E-MRS

European Materials Research Society

2014 Spring Meeting

Lille - France

May 26th - 30th

www.european-mrs.com

E-MRS 2014 PLENARY SESSION

Wednesday, May 28 (16:00 - 19:00)

room Vauban - level 3

16:00 - 16:05

Welcome address
Thomas Lippert
E-MRS President

16:05 - 16:15

Christian Bataille
Member of the National Assembly of France
(Nord Department)

16:15 - 16:55

Charge and spin transport physics of organic and oxide semiconductors
Henning Sirringhaus
Cavendish Laboratory
University of Cambridge
Cambridge CB3 OHE
UK

16:55 - 17:35

European Microelectronics Clusters: a strength for Europe !
Alain Astier
STMicroelectronics
SEMI Europe Advisory Board
Geneva
Switzerland

17:35 - 18:15

EU-40 Materials Prize Winner
A close look to the atoms: a journey to the nanoworld through advanced electron microscopy
Jordi Arbiol
ICREA & Institut de Ciència de Material de Barcelona, ICMAB-CSIC, Spain

18:15 - 18:30

Stimulate

Award Ceremony
Reach.Out! Award Ceremony

18:30 - 19:00

Symposium Organizers Address
followed by
Graduate Student Awards Ceremony

BILATERAL PLENARY SESSION

Wednesday, May 28 (12:15 - 13:45)

room Vauban - level 3

Chairs:

Hans Richter
GFWW, Frankfurt (Oder), Germany

William Tumas
National Renewable Energy Laboratory,
Denver, USA

Plenary speakers:

12:15-12:45

Materials and morphologies for efficient energy conversion
Peter F. Green
Materials Science and Engineering,
Applied Physics
University of Michigan, Ann Arbor
Director, Center for Solar and Thermal Energy Conversion (CSTEC),
Energy Frontier Research Center (EFRC)

12:45-13:15

Perovskite Solar Cells; from quantum dot sensitizers to thin film photovoltaics
Henry Snaith
Clarendon Laboratory
Parks Road
Oxford OX1 3PU
U.K.

13:15-13:45

The SEMI International Technology Roadmap for Photovoltaics (ITRPV) – Challenges in c-Si Technology for Suppliers and Manufacturers
Markus Fischer
Hanwha Q Cells GmbH
Sonnenalle 17-21
06766 Bitterfeld-Wolfen
Germany

CONFERENCE PROGRAM

MATERIALS FOR ENERGY AND ENVIRONMENT

A Thin film chalcogenide photovoltaic materials
B Advanced functional materials for environmental monitoring and applications
C Solid state ionics: thin films for energy and information applications
D Phonons and fluctuations in low dimensional structures

NANOMATERIALS

E Defect-induced effects in nanomaterials
F Established and emerging nanocolloids: from synthesis & characterization to applications
G Carbon- or nitrogen-containing nanostructured thin films
H ALTECH 2014 - Analytical techniques for precise characterization of nanomaterials
I Solution processing and properties of functional oxide thin films and nanostructures

MATERIALS AND LIGHT

J Laser interaction with advanced materials: fundamentals and applications
K Challenges for group III nitride semiconductors for solid state lighting and beyond
L Chromogenic materials and devices

HYBRID, ORGANIC AND BIO-MATERIALS

M Molecular materials - Towards quantum properties (MOLMAT-Q)
N Converging technology for nanobio-applications
O Computational modeling of organic semiconductors: from the quantum world to actual devices
P Carbon materials: surface chemistry and biomedical applications
Q Hybrid materials engineering in biology, chemistry and physics
R Towards lightweight and flexible electrochemical devices
S Memristormaterials, mechanisms and devices for unconventional computing
DD Functional materials and devices for organic electronics

CRYSTAL GROWTH IN MATERIALS SCIENCE

Jointly organized with the International Organization for Crystal Growth

T Non-classical nucleation and crystallization
U Crystal growth related twins & point defects in semiconductors & dielectrics
V Effect of natural and forced convection in materials crystallization
W Crystals for energy conversion and storage / Part of the bilateral energy conference

BILATERAL ENERGY CONFERENCE

Jointly organized with the Materials Research Society (MRS)

X Materials research for group IV semiconductors: growth, characterization and technological developments
Y Advanced materials and characterization techniques for solar cells II
Z Materials development for solar fuel production and energy conversion
AA Organic/polymer and hybrid photovoltaics
BB Materials by design for energy applications through theory and experiment
CC Materials for electrochemical energy conversion - from modular to large-scale energy generation and storage

WORKSHOPS

XX Japan in Motion - Recent WPI advances in materials
Europe in Motion (Tuesday May 27)
CEOPS Workshop «R&D on CO2 utilization in Europe» (Monday afternoon May 26)
Matval Workshop «Developing strategies to boost Materials R&D+I in Europe» (Monday afternoon May 26)
InnoMatNet Workshop (Thursday May 29)
E-MRS / MRS Workshop: the European Chapters (Tuesday afternoon May 27)

TUTORIALS

Thin films growth by PVD techniques – tips & hints
(Sunday afternoon May 25 + Monday morning May 26)
Young scientist tutorial on characterization techniques for thin-film solar cells (Sunday afternoon May 25)
Analysis of radioactive nuclear materials (Sunday afternoon May 25)

SUMMER SCHOOL

ORAMA Summer School «Oxide Materials for Electronic Applications» (Monday afternoon May 26)

SYMPO	TITLE	ROOM	LEVEL
A	Thin film chalcogenide photovoltaic materials	PASTEUR	5
B	Advanced functional materials for environmental monitoring and applications	VAN GOGH 1,2	8
C	Solid state ionics: thin films for energy and information applications	LIEGE 2	1
D	Phonons and fluctuations in low dimensional structures	VAN GOGH 3	8
E	Defect-induced effects in nanomaterials	MATISSE 1,2	8
F	Established and emerging nanocolloids: from synthesis & characterization to applications	LIEGE 1	1
G	Carbon- or nitrogen-containing nanostructured thin films	ROTTERDAM 1	1
H	ALTECH 2014 - Analytical techniques for precise characterization of nanomaterials	COLOGNE 2	1
I	Solution processing and properties of functional oxide thin films and nanostructures	JEANNE DE FLANDRE 1	11
J	Laser interaction with advanced materials: fundamentals and applications	EUROTOP	5
K	Challenges for group III nitride semiconductors for solid state lighting and beyond	ARTOIS 1	5
L	Chromogenic materials and devices	ARTOIS 2	5
M	Molecular materials - Towards quantum properties (MOLMAT-Q)	GOYA	9
N	Converging technology for nanobio-applications	MATISSE 3	8
O	Computational modeling of organic semiconductors: from the quantum world to actual devices	FAIDHERBE 1	7
P	Carbon materials: surface chemistry and biomedical applications	ROTTERDAM 2	1
Q	Hybrid materials engineering in biology, chemistry and physics	TURIN	1
R	Towards lightweight and flexible electrochemical devices	GOYA	9
S	Memristormaterials, mechanisms and devices for unconventional computing	FAIDHERBE 2	7
DD	Functional materials and devices for organic electronics	CHARLES DE GAULLE	7
T	Non-classical nucleation and crystallization	ROTTERDAM 3	1
U	Crystal growth related twins & point defects in semiconductors & dielectrics	COLOGNE 1	1
V	Effect of natural and forced convection in materials crystallization	COLOGNE 1	1
W	Crystals for energy conversion and storage	ROTTERDAM 3	1
X	Materials research for group IV semiconductors: growth, characterization and technological developments	JEANNE DE FLANDRE 2	11
Y	Advanced materials and characterization techniques for solar cells II	JEANNE DE FLANDRE 3	11
Z	Materials development for solar fuel production and energy conversion	RUBENS 2	9
AA	Organic/polymer and hybrid photovoltaics	LONDRES	3
BB	Materials by design for energy applications through theory and experiment	REMBRANDT	9
CC	Materials for electrochemical energy conversion - from modular to large-scale energy generation and storage	RUBENS 1	9
XX	Japan in Motion - Recent WPI advances in materials	HAINAUT	5
SATELLITE EVENTS		**ROOM**	**LEVEL**
SHORT COURSE: Thin Films Growth by PVD Techniques - Tips & Hints		ROTTERDAM 1	1
TUTORIAL: Young scientist tutorial on characterization techniques for thin-film solar cell		TURIN	1
TUTORIAL: Analysis of radioactive nuclear materials		ROTTERDAM 2	1
PLENARY BILATERAL		VAUBAN	3
PLENARY SESSION		VAUBAN	3
AWARD: Reach.Out! Competition Award		VAUBAN	3
EXHIBITOR WORKSHOP		PRESSE	3
EUROPE IN MOTION		HAINAUT	5
WORKSHOP MATVAL		HAINAUT	5
WORKSHOP CEOPS		CHARLES DE GAULLE	7
WORKSHOP INNOMATNET		ARTOIS 2	5
WORKSHOP: E-MRS MRS CHAPTER		FAIDHERBE 1	7
ORAMA SUMMER SCHOOL		RUBENS 1	9

CONFERENCE FLOOR PLAN

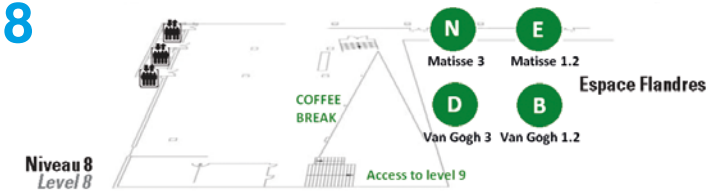
SYMPOSIUM PER LEVEL

LEVEL 11: I, X, Y
LEVEL 9: BB, CC, M, R, Z, ORAMA
LEVEL 8: B, D, E, N, COFFEE BREAK
LEVEL 7: DD, O, S, CHAPTER, CEOPS
LEVEL 5 : A, J, K, L, XX, EUROPE IN MOTION, INNOMATNET, MATVAL
LEVEL 3: AA, PLENARY SESSION, EXHIBITION, POSTER SESSIONS, RESTAURANT, SOCIAL EVENT, COFFEE BREAK
LEVEL 1: C, F, G, H, P, Q, T, U, V, W, SHORT COURSES & TUTORIALS, COFFEE BREAK

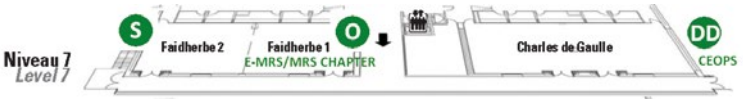
Niveau Level 11

Niveau Level 9

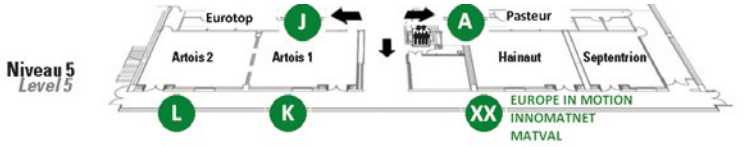
Niveau Level 8



Niveau Level 7

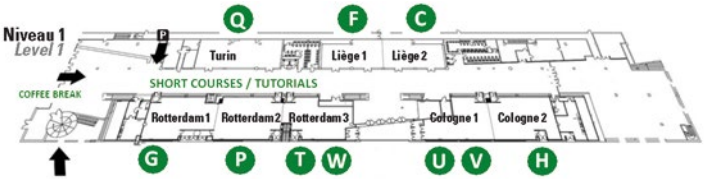


Niveau Level 5



Niveau Level 3

Niveau Level 1



SATELLITE EVENTS

Europe in Motion

Tuesday, May 27th

Room Hainaut

This full day workshop has two major objectives:

• Show to the International Materials Community that Europe is very present in key and cutting edge topics at scientific and technological levels through a number of initiatives, such as platforms, networks, committees from industry, research institutions, and academia. This will create an effective single European space for RDT in the field of materials.

• Show that advanced materials are currently present in a large majority of global bottom up or top down projects in several key areas such as Energy, Information and Communication Technologies (ICT), as well as Biotechnology.

The outcome of todays research will be the seed for new high level jobs which will be created in the future for our prosperity.

Program:

8:45	Welcome address (T. Lippert)
I. Presentation of new EU Materials related projects with E-MRS involvement (Chair: R. Martins)	
9:00	Eurosunmed (Abdelilah Slaoui)
9:15	Stimulate (Konstantinos P. Giannakopoulos)
9:30	I-flexis (Beatrice Fraboni)
9:45	EU-Knights (Bertrand Fillon)
10:00	CRM_InnoNet (Nader Akil)
10:15	Coffee break
II. European experts (Chair: R. Martins)	
10:45	Jyrki Suominen (EU Commission): "Overview on Horizon 2020"
11:10	Jan Marco Müller (EU Commission): "Inventing the future of Europe through science and technology"
III. Presentation of examples of EU Materials platforms (Chair: F. Priolo)	
11:30	Biomaterials platform (Luigi Ambrosi)
11:45	Manufacturing platform (José Caldeira)
12:00	end of session 1
	LUNCH BREAK
IV. Future jobs prospective as seen by industries in the field of materials (Chair:T. Lippert)	
14:25	Use of materials in new education initiatives at CERN (Markus Nordberg, CERN)
14:50	EMIRI (F. Stassin, EMIRI)
15:15	Coffee Break
15:45	Round table (Chairs: Jyrki Suominen, P. Siffert and Marisa Matias): "Technology Transfer in Materials worldwide" Examples in Japan, Brasil, Europe and Americas (15 min each)
17:30	END

2014 Spring Meeting Lille, France – May 26th - 30th

Workshop
"R&D on CO2 utilization in Europe"

Monday, May 26th 2014

Room Charles De Gaulle

In the frame of the E-MRS Spring Meeting in Lille, France

Preliminary Program

14:00	Jacques Amouroux	Introduction and generalities on future CO2 utilization (15min + 5 min questions)
"Fine chemicals from CO2" projects: (15min presentation + 5 min. questions)		
14:20	Guido Saracco	ECOCO2 project
14:40	Erin Schols	Cyclicco2R project
15:00	Laurent Bedel	CEOPS project
15:20		Coffee Break
Other CO2 initiatives:		
15:40	Philippe Mengal	SCOT project
16:00	Peter Styring	4CU project
16:20	Katy Armstrong & Peter Styring	CO2 Chem cluster, UK
16:40	Round table (Chair: tbc)	
17:30		End of workshop

This project has received funding from the European Union Seventh Framework Programme [FP7/2007-2013] under grant agreement n° 309984

MatVal Workshop: Developing strategies to boost Materials R&D+I in Europe

26th May 2014 - Lille, France

Room Hainaut, Time: 13.00 – 17.00

A major component of the FP7 MatVal project is the development of strategies for boosting innovationled research activities related to engineering materials in Europe. A key task is to understand the real characteristics of current research strategies and quality of delivery in order to recommend future policy options to the European Commission.
A recent survey of views and opinions from Europe's materials researchers in both academia and industry is helping to identify the barriers and critical bottlenecks in conducting innovation-led Materials research. Additionally, a recent review of national strategies and R&D+I policies is helping to understand the impact and suitability of these current strategies in relation to research into engineering materials in
Europe.
This workshop has been organised to discuss some of the key challenges facing Europe's Materials research and development.
You will not only have the opportunity to discuss the issues but as the outputs of the discussions will be captured, your comments will feed directly into the MatVal study and influence the recommendations that would be made, through the project, to the European Commission.

Program Details:

13.00	Welcome / Introduction to the MatVal Project
13.15	Presentation of MatVal Survey Results on Boosting European Materials R&D+I
13.45	Facilitated Discussion of Key Findings
15.00	Break/Refreshment
15.30	Summary Presentation by Discussion Groups
16.00	Outline of Emerging Strategy to Boost European Materials R&D+I
16.30	Open Discussion of Key Points Raised in the Emerging Strategy
16.50	Wrap Up / Close

This project has received funding from the European Union Seventh Framework Programme [FP7/2007-2013] under grant agreement n° 319142

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Thin Films Growth by PVD Techniques - Tips & Hints

25 – 26 May 2014 - Lille, France

room Rotterdam 1 (level 1)

SUNDAY, MAY 25, 2014	
15h50 – 16h00	Opening remarks
16h00 – 17h00	Overview on sputter-deposition Prof. Ivan Petrov, University of Illinois, USA
17h00 – 18h00	Atomistic view on thin film nucleation and growth Prof. Kostas Sarakinos, Linköping University, Sweden
18h00 – 19h00	Surface kinetics and thermodynamics in PVD growth Prof. Panos Patsalas, Aristotle University of Thessaloniki, Greece
MONDAY, 26 MAY	
10h00 – 11h00	Stress in thin films grown by PVD Prof. Gregory Abadias, University of Poitiers, France
11h00 – 12h00	Control of micro- and nanostructure in thin films Prof. Ivan Petrov, University of Illinois, USA

TUTORIAL ORGANIZER:
Mariana BRAIC
National National Institute for Optoelectronics
409 Atomistilor Str.
77125 Magurele - Bucharest
ROMANIA
Tel : +40-(0)21 457 5759
Fax : +40-(0)21 457 5759
E-mail : mariana_braic@inoe.ro

Young scientist tutorial on characterization techniques for thin-film solar cell

Sunday, May 25, 14:30 - 19:00
room Turin 1 (level 1)

This tutorial is intended for young researchers (students and post-graduates within 3 years of degree completion) that are active in the field of thin-film solar cells and would like to learn the fundamentals of characterization methods that are being used in research and development of these materials and devices.
All presentations will be given by young, yet experienced researchers who are active in the characterization or modeling of inorganic or organic thin-film solar cells. Although these materials will be discussed as model systems, the presentations will primarily focus on the characterization techniques and thus should be of interest to participants from symposia covering aspects of semiconductor devices. Topics include:

Fundamental characterization of inorganic and organic solar cells: basic principles of solar cell operation; basic characterization methods and identification of loss mechanisms; emphasis on information that can be obtained from current-voltage characteristic under different conditions (illumination intensity, temperature, etc).
Raman spectroscopy: basic principles of vibrational spectroscopy; Raman spectroscopy; Raman microscopy for micrometer scale chemical analysis and imaging; applications of Raman microscopy in thin-film solar cell research; tip-enhanced Raman spectroscopy (TERS) for nanometer scale chemical analysis and imaging; TERS application examples
Phase-field modeling of crystal growth: basic principles of phase field modeling; multi-component order parameter models for recrystallization and grain growth; anisotropic surface energy density incorporation; numerical simulations based on trigonometric interpolation

Tutorial Organizer:
Daniel Abou-Ras
Helmholtz-Zentrum Berlin
Hahn-Meitner-Platz 1
14109 Berlin
Germany
Tel. +49 30 8062 43218
Fax +49 30 8062 43173
daniel.abou-ras@helmholtz-berlin.de

E-MRS
2014 Spring Meeting Lille, France – May 26th - 30th

Analysis of radioactive nuclear materials

Sunday May 25, 15:00 - 18:00
room Rotterdam 2 (level 1)

The tutorial aims to update attendees who may not be fully aware of some of the new techniques available, and provide an introduction for those who are new to the topic, or are looking to move into nuclear materials science.

The characterization of radioactive materials is vital not only to understand how materials containing radioactive isotopes are formed and behave, but also how they can be improved. The analysis of the radioactive materials is not limited to spent fuel science but is applicable to the complete fuel cycle, including analysis of reactor materials.

The tutorial will cover the following main areas of radioactive materials characterization:

- Sampling and sample preparation
- Passive and active techniques, including the safe handling of materials, sub-sampling and sub-sample treatment or separation
- Interactive techniques based on photon or phonon interactions, such as x-ray absorption or infra-red spectroscopy
- Interactive techniques based on particles, such as electron, neutron, and ion interactions in transmission or reflection mode
- Comparison of the techniques with emphasis on actinide analyses

Tutorial organizer:
Claude Degueldre
Paul Scherrer Institute
OHLD 8 5232 Villigen
Switzerland
Phone: + 41 56 3104176
claude.degueldre@psi.ch

2014 Spring Meeting Lille, France – May 26th - 30th

ORAMA
www.orama-fp7.eu

Summer School

26th May, 2014 Congress Center - Lille, France
Satellite to EMRS Spring Meeting 2014
Organized by the "ORAMA" IP Consortium on

"OXIDE MATERIALS FOR ELECTRONIC APPLICATIONS"

room Rubens 1, level 9

Program

13:00-13:30	Registration
13:30-14:00	Rodrigo Martins, George Kiriakidis, Volker Sittinger Welcome / Introductory remarks/ORAMA perspective
Session A - Deposition of functional oxides Chair Person:	
14.00-14:30	Luis Pereira (Uninova) Development of TCOs, AOS and dielectrics by PVD
14:30-15:00	Volker Sittinger (FhG-IST) and Andrea Illiberi (TNO) Large area deposition: PVD and ALD
15:00-15:30	Barbara Malic (JSI) Solution processed oxides
15:30-16:00	Coffee Break
Session B - Devices and applications Chair Person:	
16:30-17:00	Sungsik Lee (UniCam) Compact device modelling of metal oxide TFTs for circuit simulation
17:00-17:30	Brian Cobb (TNO) TFTs for displays
17:30-18:00	Camilla Baratto (UniBS) and George Kiriakidis (FORTH) Functional oxides for gas sensors
18:00-18:30	Vito Lambertini (CRF) Industrial perspective
18:30	Conclusions / Closing Remarks Volker Sittinger / Rodrigo Martins/George Kiriakidis

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Reach Out!

Stimulate

Reach Out! is a science communication competition that aims to engage the members of the European Materials Science community in public outreach activities. E-MRS, as a partner of the EU project STIMULATE ("Stimulating the public attitude towards advanced materials"), seeks to recognize members of the Materials Science community (students, scientists, engineers, researchers etc) who have designed, organised and implemented a public outreach activity in the EU between the 1st of January 2013 and the 27th of April 2014.

This outreach activity must be related to Advanced Materials and its main aim must have been to uncover to the non-specialists one or more of the following aspects of work within this field: the applications, the benefit for the society and the economy, the people behind the scenes, the complexity of the work done, even possible controversies etc.
The finalists will be announced at the Reach Out! Award Ceremony held during the plenary session on Wednesday afternoon May 28 (16:00-19:00)

This Competition is organized in the frame of the EU Project STIMULATE "Stimulating the public attitude towards advanced materials" (NMP.2013.2.3-1)

Further information under: www.materialsfuture.eu

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Exhibitors Workshop

room PRESS (Level 3)

Exhibitors workshops will be held each day from Tuesday morning till Thursday afternoon.
All participant are invited to attend. The entrance is free. The exhibitor workshops provide opportunities to get acquainted with the latest developments in equipment, media, and services available on the market.
For meeting attendees, the exhibitor workshops will be an excellent opportunity to gain practical first-hand knowledge from experts in the field of materials.
Workshops will be held in room PRESS (Level 3) - 30 seats

Preliminary Program

	TUESDAY MAY 27Th	WEDNESDAY MAY 28Th	THURSDAY MAY 29Th
9:00			SPRINGER
9:30	COMPUTING & MODELLING	KRÜSS	
10:00	COMPUTING & MODELLING	KRÜSS	HIDEN ANALYTICAL
10:30			HIDEN ANALYTICAL
11:00	BRUKER NANO SYNERGIE4	INEL	
11:30	BRUKER NANO SYNERGIE4	INEL	ION-TOF
12:00			ION-TOF
12:30	XENOCS	KP TECHNOLOGY	
13:00		KP TECHNOLOGY	ELEXIENCE
13:30	WILEY		
14:00	WILEY	HAMAMATSU	NANOLANE
14:30		HAMAMATSU	NANOLANE
15:00	EDP SCIENCES / SAMPLE OF SCIENCE	HAMAMATSU	
15:30	EDP SCIENCES / SAMPLE OF SCIENCE	HAMAMATSU	SURFACE
16:00			SURFACE
16:30	KRATOS ANALYTICAL	ABCR	
17:00			ELEXIENCE

WORKSHOP

Upstream collaboration between material scientists and designers

Are you a researcher, entrepreneur, designer, materials supplier, policy maker or simply interested in the topic of collaboration between materials scientists and designers?

Do you want to have your say in future paths to improve the development and commercialization of new materials?

29th May 2014
Lille, France
Congress Center,
Room Artois 2 (level 5)

If so, please join us for what is expected to be a lively discussion on the barriers, drivers and possible ways to improve the development of new materials and materials-based creative solutions by upstream collaboration between material scientists and designers.

This workshop is an initiative promoted by InnoMatNet - "Networking of materials laboratories and innovation actors in various industrial sectors for product or process innovation" is a 30 month project launched in April 2012, funded under the NMP (Nanosciences, nanotechnologies, materials and new production technologies) theme of the European Union 7th Framework Programme.

The overall goal of the InnoMatNet project is to promote collaboration, knowledge transfer, and creation of new alliances between materials researchers, designers in industry, and others involved in innovation.

innomatnet
Innovation materials network

WOULD YOU LIKE TO BE PART OF THE NETWORK OF INNOVATION IN MATERIALS AND DESIGN? THEN REGISTER IN OUR DATABASE AT:

www.innomatnet.eu/database

@innomatnet | innomatnet.eu/rss.xml

WWW.INNOMATNET.EU

This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 290583. This publication reflects only the author's views. The European Union is not liable for any use that may be made of the information contained in it.

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European Materials Research Society

MATERIALS RESEARCH SOCIETY
Advancing materials. Improving the quality of life.

Workshop: The European Chapters

MRS / E-MRS JOINT CHAPTER
MRS COLOGNE

Tuesday May 27 (16:30 – 18:30)
Room Faidherbe 1 (level 7)

Preliminary Program

16:00	Get-together
16:30	Lecture by Prof. Mathur about MRS Cologne
17:00	Lecture by Prof. Boyd about joint chapters
17:30	Round table / Q&A session chaired by T. Lippert, E-MRS President Round table session participants: Ian Boyd, Todd Osman, Sanjay Mathur, Riccardo Raccis.
18:30	End of the meeting

Workshop organizer:
Dr. Riccardo Raccis
MRS Cologne

SYMPOSIA

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM A

Thin film chalcogenide photovoltaic materials

Symposium Organizers:

Marika Edoff, Uppsala University

Angstrom Laboratory, Sweden

Alessandro Romeo, University of Verona, Italy

Daniel Abou-Ras, Helmholz Zentrum Berlin, Germany

David Mitzi, IBM T. J. Watson Research Center, New York, USA

Takashi Minemoto, Ritsumeikan University, Shiga, Japan

Published in Thin Solid Films (Elsevier).

26 May 2014

09:00 **OPENING (welcome and various information for the participants)**

In situ monitoring : fd

09:15 **In-Situ XRD Analysis of the Recrystallization Process in CZTS Nano Particles Synthesized by Hot-Injection** A.O1 1
Marco Brandl, Rameez Ahmad, Monica Distaso, Wolfgang Peukert, Rainer Hock
Chair for Crystallography and Structural Physics, Friedrich-Alexander-University Erlangen-Nürnberg, Staudtstr. 3, 91058 Erlangen, Germany; Institute of Particle Technology, Friedrich-Alexander-University Erlangen-Nürnberg, Cauerstr. 4, 91058 Erlangen, Germany

09:30 **In-situ XRD study of alloyed Cu2ZnSnSe4 – CuInSe2 thin films for solar cells** A.O1 2
S. Hartnauer, L. A.M. Wägele, W. Fränzel, R. Scheer
Martin-Luther-University Halle-Wittenberg, Photovoltaics group

09:45 **Investigation of low temperature Cu(In,Ga)Se_2 multi-step co-evaporation growth on polyimide foil by real-time EDXRD: grain orientation and growth path** A.O1 3
Dieter Greiner, Roland Mainz, Stephan Brunken, Hengemeh Allaf Navirian, Jakob Lauche, Christian A. Kaufmann, Manuela Klaus, Christof Genzel, Thomas Unold
Helmholtz-Zentrum Berlin f?r Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

10:00 **Coffee break**

High-efficiency solar cells and modules : fd

10:30 **CIGS PV technology - Current Status and Future Prospects** A.O2 1
S. Niki1, S. Ishiuka1, Y. Kamikawa1, H. Komaki1, K. Matsubara1, H. Shibata1, A. Yamada1, K. Hara2, A. Masuda2, N. Terada3, T. Sakurai3, K Akimoto3
1, Research Center for PV Technologies, AIST, Tsukuba Ibaraki, Research Center for PV Technologies, AIST Tosu, Saga, Kagoshima University, Kagoshima, Japan, Tsukuba University, Ibaraki, Japan

11:00 **High efficiency CdTe thin film PV devices grown by MOCVD** A.O2 2
G. Kartopu*, V. Barrioz, S. D. Hodgson, E. Tedejor, D. Dupin, A.J. Clayton, S.Rugen-Hankey, W.S.M. Brooks, D. A. Lamb and S.J.C. Irvine
Centre for Solar Energy Research (CSER), Glyndŵr University, St Asaph Business Park, St Asaph, LL17 0JD, UK

11:15 **Analysis of Cu(In,Ga)Se2 solar cells with high efficiencies up to 20.8 %** A.O2 3
Philip Jackson, Dimitrios Hariskos, Roland Wuerz, Oliver Kiowski, Wolfram Witte, Wolfram Hempel, Axel Eicke, Wiltraud Wischmann, Michael Powalla
Zentrum fuer Sonnenenergie- und Wasserstoff-Forschung Baden-Wuerttemberg (ZSW), Industriestrasse 6, 70565 Stuttgart, Germany

11:30 **Very high efficiency Cu(In,Ga)Se2-based thin-film solar cells grown with a single-stage process** A.O2 5
Erik Wallin (1), Olle Lundberg (1), Ulf Malm (1), Tobias Jarmar (1), Ralf Hunger (2), Marika Edoff (1,3), Lars Stolt (1,2)
1. Solibro Research AB, Uppsala, Sweden 2. Solibro GmbH, Bitterfeld-Wolfen, Germany 3. Uppsala University, Uppsala, Sweden

11:45 **DISCUSSION SESSION: High-efficiency solar cells (M. Edoff, D. Abou-Ras)**

12:15 **Lunch break**

CIGS: Na+K : fd

14:00 **Influence of alkali and metallic impurities in Cu(In,Ga)Se2 thin film solar cells** A.O3 1
Patrick Reinhard1, Fabian Pianezzi1, Benjamin Bissig1, Debora Keller1,2, Adrian Chirila3, Shiro Nishiwaki1, Rolf Erni2, Stephan Buecheler1, Ayodhya N. Tiwari1
1 Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland; 2 Electron Microscopy Center, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland

14:30 **Atom probe tomography investigation of the influence of CIGSe deposition process on Na distribution** A.O3 2
F. Couzinie-Devy (a,b), E. Cadel (a), N. Barreau (b), L. Arzel (b), P. Pareige (a)
(a) Groupe de Physique des Matériaux (GPM), UMR 6634 CNRS, Avenue de l'Université BP 12, 76801 Saint Etienne de Rouvray, France (b) Institut des Matériaux Jean Rouxel (IMN), UMR 6502 CNRS, 2 rue de la Houssinière BP 32229, 44322 Nantes cedex 3, France

14:45 **How DC-sputtering conditions during the Mo back contact deposition influence the absorber properties in Cu(In,Ga)Se2-based thin film solar cells** A.O3 3
T. Lepetit (1), D. Mangin (2), E. Gautron (1), M. Tomassini (1), S. Harel (1), L. Arzel (1), N. Barreau (1)
(1) Institut des Mat?riaux Jean Rouxel (IMN), UMR 6502 CNRS 2 rue de la Houssini?re BP 32229, 44322 Nantes cedex 3, France ; (2) Institut Jean Lamour, UMR 7198 CNRS - Universit? de Lorraine Parc de Saurupt, CS 50840, 54011 NANCY cedex, France

15:00 **On the origin of optimum sodium content in low-temperature CIGSe** A.O3 4
S. Puttnins a/b, J. Neerken c, M.S. Hammer c, I.Riedel c, T. Unold d, F. Daume a, A. Rahm a, A.Braun a and M. Grundmann b
a Solarion AG, Pereser Hoehe 1, 04442 Zwenkau, Germany; b Institut für Experimentelle Physik II, Universität Leipzig, Linnéstraße 5, 04103 Leipzig, Germany; c Laboratory for Chalcogenide Photovoltaics, Energy and Semiconductor Research Laboratory, Univ. Oldenburg, 26111 Oldenburg, Germany; d Helmholtz Zentrum Berlin für Materialien und Energie, Hahn-Meitner Platz 1, 14109 Berlin, Germany;

15:15 **Effect of potassium fluoride post deposition treatment on chalcopyrite solar cell absorbers** A.O3 5
Paul Pistor, Dieter Greiner, Christian A. Kaufmann, Iver Lauermann, Jakob Lauche, Stephan Brunken, Wolfram Calvet, Alexander Steigert, Mihaela Gorgoi, Frank Hergert, Reiner Klenk, Thomas Unold, Martha-C. Lux-Steiner
Helmholtz-Zentrum Berlin, Bosch Solar CISTech GmbH

15:30 **Potassium and sodium post-deposition treatments of low-temperature evaporated Cu(In,Ga)Se2 thin films for high efficiency solar cells: a comparative study** A.O3 6
Patrick Reinhard1, Fabian Pianezzi1, Benjamin Bissig1, Debora Keller1,2, Max Döbeli3, Harald Hagendorfer1, Shiro Nishiwaki1, Rolf Erni2, Stephan Buecheler1, Ayodhya N. Tiwari1
1Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland; 2Electron Microscopy Center, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland; 3Ion Beam Physics, ETH Zürich – Swiss Federal Institute of Technology, Schafmattstrasse 20, CH-8093 Zürich, Switzerland;

15:45 **Coffee break**

Poster 1: Absorber growth and properties - CIGSSe and CdTe : Marika Edoff + tbd

16:00 **Effects of substrate on CuInGaSe2 thin film solar cells** A.P1 1
Chae-Woong Kim12, Ki-hwan Kim12, Jin Hyeok Kim2, Chaehwan Jeong1,*
1 Energy & Applied Optics Division, Solar Cell Research Team, Korea Institute of Industrial Technology (KITECH), Gwangju 500-480, South Korea 2 Department of Material Science and Engineering, Chonnam National University, Gwangju, 500-757, South Korea

16:00 **Selenization of printed Cu-In-Se alloy nanopowder layers for fabrication of CuInSe2 thin films solar cells** **A.P1 2**
Armin E. Zaghi1,3,6, Marie Buffière2,3,6, Guy Brammertz4,5, Nick Lenaers1,3,6, Marc Meuris4,5, Jef Poortmans2,3, Jef Vleugels1
1-Department of Metallurgy and Materials Engineering (MTM), KU Leuven, Kasteelpark Arenberg 44, 3001 Heverlee, Belgium 2-Department of Electrical Engineering (ESAT), KU Leuven, Kasteelpark Arenberg 10, 3001 Heverlee, Belgium 3-imec – partner in Solliance, Kapeldreef 75, 3001 Heverlee, Belgium 4-imec division IMOMEC – partner of Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium 5-Institute for Material Research (IMO) Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium 6-SIM vzw, Technologiepark 935 - 9052 Zwijnaarde, Belgium

16:00 **Gallium diffusion treatment of chalcopyrite absorber layers** **A.P1 3**
Nick Lenaers [1 2 3], Marie Buffiere [2 3 4], Guy Brammertz [2 5 6], Armin Zaghi [1 2 3], Marc Meuris [2 5 6], Jef Poortmans [2 4], Jef Vleugels [1]
1. Department of Metallurgy and Materials Engineering – MTM, KU Leuven, Kasteelpark Arenberg 44, BE-3001 Heverlee, Belgium 2. imec – partner in Solliance, vzw, Kapeldreef 75, BE-3001 Heverlee, Belgium 3. SIM vzw, Technologiepark 935, BE-9052 Zwijnaarde, Belgium 4. Department of Electrical Engineering – ESAT, Kasteelpark Arenberg 10, BE-3001 Heverlee, Belgium 5. imec division IMOMEC – partner in Solliance, Wetenschapspark 1, BE-3590 Diepenbeek, Belgium 6. Institute for Materials Research (IMO), Hasselt University, Wetenschapspark 1, BE 3590 Diepenbeek, Belgium

16:00 **Comparing the effects of potassium and sodium co-evaporation during Cu(In,Ga)Se2 growth in a low temperature multi-stage process** **A.P1 5**
Benjamin Bissig, Fabian Pianezzi, Patrick Reinhard, Shiro Nishiwaki, Stephan Buecheler, Ayodhya N. Tiwari
Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland

16:00 **4-Amino-1,2,4-Triazole: Playing a key role in the chemical deposition of Cu-In-Ga metal layers for photovoltaic applications** **A.P1 6**
Ulrich Berner (1)(2), Markus Widenmeyer (1), Patrick Engler (1), Philip Dale (2)
(1) Robert Bosch GmbH, Corporate Sector Research and Advance Engineering, Applied Research Chemistry (CR/ARC), Robert Bosch Platz 1, 70839 Gerlingen-Schillerhöhe, Germany; E-mail: ulrich.berner@de.bosch.com; (2) Université du Luxembourg, Laboratory for Energy Materials, 41, rue du Brill, L-4422 Belvaux, Luxembourg

16:00 **Effect of selenium content of CuInSex alloy nanopowder precursors on recrystallization of printed CIS absorber layers during selenization heat treatment** **A.P1 7**
Armin E. Zaghi1,3,8, Marie Buffière2,3,8, Jaseok Koo4, Guy Brammertz6,7, Maria Batuk5, Joke Hadermann5, Woo Kyoung Kim4, Marc Meuris6,7, Jef Poortmans2,3, Jef Vleugels1
1-Department of Metallurgy and Materials Engineering (MTM), KU Leuven, Kasteelpark Arenberg 44, 3001 Heverlee, Belgium 2-Department of Electrical Engineering (ESAT), KU Leuven, Kasteelpark Arenberg 10, 3001 Heverlee, Belgium 3-imec – partner in Solliance, Kapeldreef 75, 3001 Heverlee, Belgium 4-School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan-si, Gyeongbuk, 712-749 Korea 5-Electron Microscopy for Materials Science (EMAT), University of Antwerp, Groenenborgerlaan 171, 2020 Antwerp, Belgium 6-imec division IMOMEC – partner of Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium 7-Institute for Material Research (IMO) Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium 8-SIM vzw, Technologiepark 935 - 9052 Zwijnaarde, Belgium

16:00 **Anomalous phenomena related to Na diffusion in Cu(In,Ga)Se2 thin films** **A.P1 8**
FABIAN WILANGOWSKI1, JENS BASTEK1, ROLAND WUERZ2, J. ALBERT3, NICO STOLWIJK1
1Universitaet Muenster, Institut für Materialphysik, 48149 Muenster, 2Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Wuerttemberg, 70565 Stuttgart, 3Helmholtz-Zentrum Berlin für Materialien und Energie, 12489 Berlin

16:00 **Controlled bandgap CuIn1-xGaxS0.1Se0.9 (0.10 ≤ x ≤ 0.65) solar cells from electrodeposited precursors** **A.P1 9**
João C. Malaquias, Dominik M. Berg, Jan Sendler, William N. Shafarman, Marc Steichen, Phillip J. Dale
University of Luxembourg, Laboratory for Energy Materials ; University of Delaware, Institute of Energy Conversion ; University of Luxembourg, Laboratory for Photovoltaics ; University of Delaware, Institute of Energy Conversion ; University of Luxembourg, Laboratory for Energy Materials ; University of Luxembourg, Laboratory for Energy Materials

16:00 **Formation of dense CIGS layers from hybrid, carbon-free inks** **A.P1 10**
Ruben Dierick, Pieter Arickx, Boris Capon, Christophe Detavernier, Zeger Hens
Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, B-9000 Ghent, Belgium, Coating and Contacting of Nanostructures, Ghent University,Krijgslaan 281-S1, B-9000 Ghent, Belgium

16:00 **Deposition of CISe and CIGSe layers by hybrid approach** **A.P1 11**
P. Reyes*, T. Painchaud, L. Arzel, N. Barreau and S. Velumani
Department of Electrical Engineering (SEES),CINVESTAV- I.P.N., Av. IPN #2508 Col. San Pedro Zacatenco, Mexico D.F., Mexico ; Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322 Nantes cedex 3, France

16:00 **Fabrication of CuIn(S,Se)2 and Cu2ZnSnS4 Thin Films by Spray Pyrolysis Method and Their Photovoltaic Properties** **A.P1 12**
Wilman Septina, Shigeru Ikeda, Yoshihito Kawasaki, Nguyen Thi Hiep, Takashi Harada, Michio Matsumura
Research Center for Solar Energy Chemistry, Osaka University

16:00 **Characterization of solution-processed chalcopyrite thin film solar cells** **A.P1 13**
Ji Eun Kim(1), Yunae Cho(1), Dong-Wook Kim*(1), Se Jin Park(2), Sung Hwan Moon(2), and Byoung Koun Min(2)
(1)Department of Physics, Ewha Womans University, Seoul 120-750, Korea; (2) Clean Energy Research Center, Korea Institute of Science and Technology, Seoul 136-791, Korea

16:00 **Doping of the Polycrystalline CdTe-Absorber in CdTe/CdS Solar Cells** **A.P1 14**
Ch. Heisler, M. Salge, H. Hempel, U. Reislöhner, C. Ronning, W. Wesch
Friedrich-Schiller-Universität Jena, Physikalisch-Astronomische Fakultät, Institut für Festkörperphysik, Max-Wien-Platz 1, 07743 Jena, Germany

16:00 **Investigation of the effect of potassium on Cu(In,Ga)Se2 solar cells** **A.P1 15**
Anke Lämmle, Roland Würz, Michael Powalla
Zentrum für Sonnenernergie- und Wasserstoff-Forschung - Baden Württemberg (ZSW-BW)

16:00 **CuInSe2 semiconductor formation by laser annealing** **A.P1 16**
Helene J. Meadows, David Regesch, Maxime Thevenin, Jan Sendler, Thomas Schuler, Sudhajit Misra, Brian J. Simonds, Mike A. Scarpulla, Viktor Gerliz, Levent Guetay, Phillip J. Dale
Laboratory for Energy Materials, University of Luxembourg, Belvaux, Luxembourg; Laboratory for Photovoltaics, University of Luxembourg, Belvaux, Luxembourg; Materials Science and Engineering, University of Utah, Salt Lake City, Utah, USA; Electrical and Computer Engineering, University of Utah, Salt Lake City, Utah, USA; Laboratory for Chalcogenide Photovoltaics, University of Oldenburg, Oldenburg, Germany

16:00 **Influence of the indium/gallium gradients on the Cu(In,Ga)Se2 devices deposited by the co-evaporation without recrystallization** **A.P1 17**
Tomasz Drobiazg, Ludovic Arzel, Paweł Zabierowski, Nicolas Barreau
Faculty of Physics, Warsaw University of Technology, Koszykowa 75, PL 00-662 Warsaw, Poland, Institut des Matériaux Jean Rouxel (IMN)—UMR 6502, Université de Nantes, CNRS, 2 rue de la Houssinière B.P. 32229, 44322 Nantes Cedex 3 France; Institut des Matériaux Jean Rouxel (IMN)—UMR 6502, Université de Nantes, CNRS, 2 rue de la Houssinière B.P. 32229, 44322 Nantes Cedex 3 France; Faculty of Physics, Warsaw University of Technology, Koszykowa 75, PL 00-662 Warsaw, Poland; Institut des Matériaux Jean Rouxel (IMN)—UMR 6502, Université de Nantes, CNRS, 2 rue de la Houssinière B.P. 32229, 44322 Nantes Cedex 3 France

16:00 **Cu(In,Ga)(S,Se)2 solar cells from salt solution by non-vacuum processing** **A.P1 18**
Erik Ahlswede, Ines Klugius, Thomas Schnabel
Zentrum fuer Sonnenenergie- und Wasserstoff-Forschung ZSW

16:00 **Oxidation of In2Se3 and (In,Ga)2Se3 precursor layers and its effect on the CISe and CIGSe based solar cells** **A.P1 19**
P. Reyes*, T. Painchaud, T. Lepetit, S. Harel, L. Arzel, N. Barreau and S. Velumani
Department of Electrical Engineering (SEES),CINVESTAV- I.P.N., Av. IPN #2508 Col. San Pedro Zacatenco, Mexico D.F., Mexico ; Institut des Mate´ riaux Jean Rouxel (IMN)-UMR 6502, Universite´ de Nantes, CNRS, 2 rue de la Houssinie` re, BP 32229, 44322 Nantes Cedex 3, France

16:00 **CuInSe2 based solar cells prepared by selenization of chemical bath deposited In2S3/CuxS stacks** **A.P1 20**
S. Lugo1, Y. Sanchez2, N. Neuschitzer2, H. Xie2, C. Insignares-Cuello2, V. Izquierdo-Roca2, Y. Peña1, E. Saucedo2
1. Universidad Autonoma de Nuevo Leon, UANL, Fac. de Ciencias Quimicas, Av. Universidad S/N Ciudad Universitaria San Nicolas de Los Garza Nuevo Leon, C.P. 66451, Mexico. 2. Catalonia Institute for Energy Research (IREC), Jardins de les dones de negre 1, 08930 Sant Adria del Besos-Barcelona, Spain.

16:00 **Study on the role of oxygen during CdTe film growth by CSS and activation of junction in CdTe/CdS solar cells** **A.P1 21**
E. Regalado-Pérez, X. Mathew
Instituto de Energías Renovables, Universidad Nacional Autónoma de México

16:00 **Radiative recombination mechanisms in CdTe thin films** **A.P1 22**
S. Vatavu 1,2, S. Bakhshi 1, S. Collins 1, V. Palekis 1, C. Rotaru 2, and C. Ferekides 1
1 Department of Electrical Engineering, University of South Florida, 4202 East Fowler Ave, Tampa, FL 33620, USA; 2 Faculty of Physics and Engineering, Moldova State University, 60 A. Mateevici str., Chisinau, MD-2009, MOLDOVA.

16:00 **Formation of CuInSe2 from CuSe and InSe binary compounds by wet process** **A.P1 23**
Hyungmin Lee, Hyunsoo Kim, Dong-seob Jeong, Hyeonwook Park, Chinho Park*
School of Chemical Engineering, Yeungnam University, Republic of Korea

16:00 **Influence of hollow cathode plasma activation on the growth of Cu(In,Ga)Se2 thin films** **A.P1 24**
Roland Wuerz1, Friedrich Kessler1, Henry Morgner2, Stefan Saager2
1) Zentrum fuer Sonnenenergie- und Wasserstoff-Forschung Baden-Wuerttemberg (ZSW), Stuttgart 2) Fraunhofer-Institut f?r Elektronenstrahl- und Plasmatechnik (FEP), Dresden

16:00 **Fabrication of CIGSSe Thin Film Solar Cell by Non-Vacuum Process** **A.P1 25**
Jaehong Kim1, Yang Hwi Cho1, Yeokwon Yoon1, Kye Ung Lee1, Kyung Min Ahn1, Yong Min Jung2, Kwang Bok Kim2, Tae Seok Lee1
1. GS Caltex R&D Center, Daejeon, 350-380, Korea; 2. Kumho Electronic, Inc R&D Center, Gwangju, 546-12, Korea

16:00 **Influences of Precursors, pH, and Annealing Temperature on CIGS Thin Films prepared by Solution-based Deposition Methods** **A.P1 26**
Yujie Zhang, Ho Young Jun, Si Ok Ryu*
School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan 712-749, South Korea

16:00 **A Study of the Chelating Effect in Hybrid Ink Process for CuInSe2 (CIS) Thin Film Solar Cell** **A.P1 27**
Ara Cho, SeJin Ahn, Jae Ho Yun, Jihye Gwak, Seung Kyu Ahn, Young-Joo Eo, Jun Sik Cho, Ju Hyung Park, Jin Su Yu, Kihwan Kim, Keeshik Shin, Kyunghoon Yoon
Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), 152 Gajeong-ro, Yuseong-gu, Daejeon, 305-343, Korea

16:00 **A Method to Supply Extra Se by Sputtering For CIGS Absorber Fabrication Without Post Selenization** **A.P1 28**
Chia-Hao Hsu, Chih-Huang Lai
National Tsing Hua University

16:00 **Effect of CdCl2 vapor phase pretreatment annealing on the properties of CSS CdS and CdTe/CdS thin film solar cells** **A.P1 29**
Nicolae Spalatu, Jaan Hiie, Vello Valdna, Malle Krunks, Mihail Caraman, Valdek Mikli, Natalia Maticiuc
Department of Materials Science, Tallinn University of Technology, Ehitajate tee 5, Tallinn 19086, Estonia; Physics Department, Moldova State University, A. Mateevici str. 60, Chisinau MD 2009, Republic of Moldova

16:00 **Breath of CIGS: Introducing a post oxygen atmosphere to reduce effects of Se deficiency in one-step sputtered Cu(In1-xGax)Se2 solar cells** **A.P1 30**
Tzu-Ying Lin, Jeff Lin, Wei-hao Ho, Chia-Hao Hsu, Shih-Yuan Wei, Jung-Wei Liao, and Chih-Huang Lai *
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan

16:00 **Selenization of In/Cu-multilayer stacks - An investigation of the phase formation processes** **A.P1 31**
M. Oertel, C. Ronning
Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena, Helmholtzweg 3, 07743 Jena

16:00 **Low Temperature Formation of CuInSe2 Solarcell Absorbers by an All Printed Two Species Nanoparticulate Se + Cu In Precursor** **A.P1 32**
Stefan A. Möckel1, Tobias Wernicke1, Matthias Arzig1, Philipp Köder1, Marco Brandl2, Rameez Ahmad3, Monica Distaso3, Wolfgang Peukert3, Rainer Hock2, Peter J. Wellmann1
1) Department of Materials Science, Chair of Materials for Electronics and Energy Technology, Friedrich-Alexander-University Erlangen-Nürnberg, Martensstr. 7, 91058 Erlangen, Germany; 2) Chair for Crystallography and Structural Physics, Friedrich-Alexander-University Erlangen-Nürnberg, Staudtstr. 3, 91058 Erlangen, Germany; 3) Institute of Particle Technology, Friedrich-Alexander-University Erlangen-Nürnberg, Cauerstr. 4, 91058 Erlangen, Germany;

16:00 **Activation of CdTe-based thin films with Zinc Chloride** **A.P1 33**
C. Drost, B. Siepchen, B. Späth, V. Krishnakumar, C. Kraft, T. Modes (2), O. Zywitzki (2)
CTF-Solar GmbH, Manfred von Ardenne Ring 20 F, 01099 Dresden, Germany; (2) Fraunhofer Institute for Electron Beam and Plasma Technology FEP, Winterbergstrasse 28, 01277 Dresden, Germany

16:00 **Fabrication and characterization of homogeneous CIGSSe2 thin films solar cells by multi-step method** **A.P1 34**
Sung-Min Youn 1, Jin Hyeok Kim 2, Chaehwan Jeong1*
1. Applied Optic & Energy Research Group, Korea Institute of Industrial Technology, Gwangju 500-480, South Korea 2. Department of Material Science and Engineering, Chonnam National University, Gwangju, 500-757, South Korea

16:00 **Effects of CuSe precursor layers on the properties of CIGS thin film solar cells fabricated by one-step sputtering** **A.P1 35**
Tae-Won Kim, Jae-Cheol park, Seung-Hyoun Lee, Seong-Jae Boo, Ho-sung Kim
Applied Optics & Energy R&D Group Korea Institute of Industrial Technology Gwangju, SOUTH KOREA

16:00 **Study the effect of Al Addition to CuInSe2 Absorber on its properties** **A.P1 36**
Fianti Fianti, Kyoo Ho Kim
Yeungnam University

16:00 **Solution-processed CuIn(S,Se)2 absorber layers for application in thin film solar cells** **A.P1 37**
P. Arnou 1*, C.S. Cooper 2, A.V. Malkov 2, J.W. Bowers 1, J.M. Walls 1
1 Centre for Renewable Energy Systems Technology (CREST), School of Electronic, Electrical and Systems Engineering, Loughborough University, Loughborough, Leicestershire, LE11 3TU, UK; 2 Department of Chemistry, Loughborough University, Loughborough, Leicestershire, LE11 3TU, UK

16:00 **Cu(In,Ga)Se2 solar cells prepared by single-step reactive magnetron co-sputtering from metallic targets in an Ar:H2Se atmosphere** **A.P1 38**
Jonas Schulte, Karsten Harbauer, Klaus Ellmer
Helmholtz-Zentrum Berlin für Materialien und Energien GmbH Hahn-Meitner-Platz 1, 14109 Berlin

16:00 **CIGSe absorber layers deposition by single target magnetron sputtering** **A.P1 39**
R.Meunier, S.Fabert, M.Ricci, P.Y. Thoulon, T.Aviles, J.P. Vilcot, A. Lafond, M. Carette, P.Y. Jouan, M.P. Besland
Crosslux S.A / Institut des matériaux Jean Rouxel (IMN); Crosslux S.A / Institut des matériaux Jean Rouxel (IMN); Crosslux S.A; Crosslux S.A ; Institut d'Electronique, Microélectronique et Nanotechnologie (IEMN);Institut d'Electronique, Microélectronique et Nanotechnologie (IEMN); Institut des matériaux Jean Rouxel (IMN); Institut des matériaux Jean Rouxel (IMN); Institut des matériaux Jean Rouxel (IMN); Institut des matériaux Jean Rouxel (IMN);

16:00 **Low temperature fabrication of 15%-efficient solar cells based on Cu(In,Ga)Se2 films by Pulsed Electron Deposition technique** **A.P1 40**
Stefano Rampino(1), Matteo Bronzoni(1), Filippo Annoni(1), Francesco Bissoli(1), Marco Calicchio(1), Edmondo Gilioli(1), Enos Gombia(1), Francesco Pattini(1), T. V. Vimalkumar(2) and Massimo Mazzer(1)
(1) IMEM - CNR Parco Area Delle Scienze 37/A 43124 Parma (2) Department of Physics St.Thomas College,Thrissur Kerala,India.

16:00 **Low-temperature epitaxial growth of Cu(In,Ga)Se2 on Ge by Pulsed Electron Deposition** **A.P1 41**
Stefano Rampino(1), Matteo Bronzoni(1), Lorenzo Colace(2), Paola Frigeri(1), Enos Gombia(1), Francesco Mezzadri(1), Lucia Nasi(1), Luca Seravalli(1), Francesco Pattini(1), Giovanna Trevisi(1) and Edmondo Gilioli(1)
(1) IMEM - CNR, Parco Area Delle Scienze 37/A -43124 Parma ITALY (2) Department of Engineering - University «Roma Tre», Via Vito Volterra, 62 - 00146 Rome ITALY

16:00 **CdCl2 activation treatment: a comprehensive study by monitoring the annealing temperature** **A.P1 42**
Bing Lei Xu^, Ivan Rimmaudo^, Andrei Salavei^, Fabio Piccinelli*, Simone Di Mare, Daniele Menossi , Alessio Bosio , Nicola Romeo , and Alessandro Romeo^
^LAPS-Laboratory for Applied Physics, Department of Computer Science, University of Verona, Ca' Vignal 1, Strada Le Grazie 15, 37134 Verona, Italy, tel.: 39-045-8027974, e-mail address: alessandro.romeo@univr.it * Department of Biotechnology, University of Verona, Strada Le Grazie 15, 37134 Verona, Italy Physics and Earth Science Department, University of Parma, V.le G.P. Usberti, 7A-43124, Italy

16:00 **The activation of thin film CdTe solar cells using alternative chlorine containing compounds** **A.P1 43**
B. Maniscalco 1, G. West 2, J.W. Bowers 1, A. Abbas 1, P.M. Kaminski 1, J.M. Walls 1
1 Centre for Renewable Energy Systems Technology, (CREST), School of Electronic, Electrical and Systems Engineering, Loughborough University, Leicestershire, LE11 3TU, UK 2 Materials Department, Loughborough University, Leicestershire, LE11 3TU, UK

16:00 **Effects of deposition parameters on the composition of Cu(In,Ga)Se2 thin films deposited by magnetron pulsed DC sputtering** **A.P1 44**
Thomas AVILES, Jean-Pierre VILCOT
Institut d'Electronique, de Microélectronique et de Nanotechnologie UMR CNRS 8520

16:00 **Compensation of In loss during selenization of CuGa/In by external supply of In2Se vapor** **A.P1 45**
Junhyun Park, Kyeongchan Moon, Woo Kyoung Kim
School of Chemical Engineering, Yeungnam University

16:00 **Laser Treatment as Surface Modification Technique for CdTe Solar Cells** **A.P1 46**
V. Palekis1, B. J. Simonds2, V. Evani1, M. Khan1, P. Bane1, M. A. Scarpulla2, and C. Ferekides1
1 Department of Electrical Engineering, University of South Florida, Tampa, FL, 33620, USA; 2 Materials Science and Engineering, University of Utah, Salt Lake City, UT, 84112, USA.

16:00 **Rapid synthesis of CuInSe2 from sputter-deposited bilayer In2Se3/Cu2Se precursors** **A.P1 47**
Jaseok Koo(a), Kyeongchan Moon(a), Saleh Alhammadi(a), Chae-Woong Kim(b), Chaehwan Jeong(b), Woo Kyoung Kim(a)
(a) School of Chemical Engineering, Yeungnam University; (b) Applied Optics and Energy Research Group, Korean Institute of Industrial Technology

16:00 **Elaboration of efficient CIGS solar cells by one-step electrodeposition of oxide precursor films** **A.P1 48**
Tarik SIDALI, Aurélien DUCHATELET, Elisabeth CHASSAING, Daniel LINCOT
EDF/IRDEP (Institute of Research and Development on Photovoltaic Energy), 6 quai Watier, 78401 Chatou Cedex, France

16:00 **Cu(InGa)Se2 formation from bilayer (InGa)2Se3/CuSe precursors by following NREL 3-stage process** **A.P1 49**
Kyeongchan Moon, Junhyun Park, Saleh Alhammadi, Woo Kyoung Kim
School of Chemical Engineering, Yeungnam University

16:00 **Study of step-graded Na-doping methods and different annealing time on the electrical properties of Cu(In,Ga)Se2-based solar cells grown by Pulsed Electron Deposition technique** **A.P1 50**
A. Kingma, F. Annoni, M. Bronzoni, F. Bissoli, M. Calicchio, E. Gilioli, E. Gombia, F. Pattini, S. Rampino
IMEM-CNR, Institute of Materials for Electronics and Magnetism, Parco Area delle Scienze 37/A, 43124 - Parma (Italy)

16:00 **Photoluminescence Studies of EVT deposited CdTe Thin Films** **A.P1 51**
S. Collins 1, S. Vatavu 1, 2, S. Bakhshi 1, V. Palekis 1, M. Khan 1, V. Evani 1, C. Ferekides 1
1 Department of Electrical Engineering, University of South Florida, 4202 East Fowler Ave, Tampa, FL 33620, USA; 2 Faculty of Physics and Engineering, Moldova State University, 60 A. Mateevici str., Chisinau, MD-2009, MOLDOVA.

16:00 **Importance of green density of nanoparticle precursor film in microstructural development and photovoltaic properties of CuInSe2 thin films** **A.P1 52**
Yoonjung Hwang, Byung-Seok Lee, Ye Seul Lim, and Doh-Kwon Lee
Photo-electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea; Department of Nanomaterials Science and Engineering, University of Science and Technology, Daejeon 305-350, Korea

27 May 2014

Ultra-thin absorbers and high-efficient CdTe modules : tbd

08:45 **Highly Reflective Rear Surface Passivation Design for Ultra-Thin Cu(In,Ga) Se2 Solar Cells** — A.O4 1
Bart Vermang, Viktor Fjällström, Timo Wätjen, Fredrik Rostvall, Marika Edoff, Ratan Kotipalli, Frederic Henry, Denis Flandre, Rickard Gunnarsson, Iris Pilch, Ulf Helmersson
Bart Vermang; Viktor Fjällström; Timo Wätjen; Fredrik Rostvall; Marika Edoff: Ångström Solar Center, Uppsala University, P.O. Box 534, 75121 Uppsala, Sweden Ratan Kotipalli; Frederic Henry; Denis Flandre: ICTEAM, Université Catholique de Louvain, Place du Levant 3, 1348 Louvain-la-Neuve, Belgium Rickard Gunnarsson; Iris Pilch; Ulf Helmersson: Plasma & Coatings Physics, Linköping University, IFM, 58183 Linköping, Sweden

09:00 **Flexible CIGS solar cells on ultra-thin glass substrates** — A.O4 2
A. Gerthoffer, F. Roux, P. Faucherand, H. Fournier, F. Emieux, S. Perraud
CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France

09:15 **Superior stability of ultra thin CdTe solar cells with simple Cu/Au back contact** — A.O4 3
Ivan Rimmaudo, Andrei Salavei, Bing Lei Xu, Simone Di Mare, and Alessandro Romeo
Laboratory for Applied Physics, Department of Computer Science, University of Verona, Strada Le Grazie 15, 37134 Verona, Italy, alessandro.romeo@univr.it, ph: 390458027974, fax 390458027929

09:30 **Progress towards practical CdTe solar modules with 17 % efficiency** — A.O4 4
Markus Gloeckler
First Solar Inc.

10:00 **coffee break**

CdTe: doping + interfaces : fd

10:30 **Band alignment at the buried CdS/SnO2:F interface in CdTe thin-film solar cells** — A.O5 1
D. A. Hanks 1, P. S. Kobyakov 2, S. G. Rosenberg 1, J. H. Alsmeier 3, M. Blum 1, R.G. Wilks 3, L. Weinhardt 1,4,5, M. B?r 1,3,6, W. Sampath 2, C. Heske 1,4,5,7
1Dept. of Chemistry, University of Nevada, Las Vegas (UNLV), Las Vegas, NV 89154-4003, USA; 2Next Generation Photovoltaics Center, Colorado State University (CSU), Fort Collins, CO 80523, USA; 3Solar Energy Research, Helmholtz-Zentrum Berlin f?r Materialien und Energie GmbH (HZB), 14109 Berlin, Germany; 4ANKA Synchrotron Radiation Facility, Karlsruhe Institute of Technology (KIT), 76344 Eggenstein-Leopoldshafen, Germany; 5Institute for Photon Science and Synchrotron Radiation (IPS), Karlsruhe Institute of Technology (KIT), 76344 Eggenstein-Leopoldshafen, Germany; 6Institut f?r Physik und Chemie, Brandenburgische Technische Universit?t Cottbus-Senftenberg, 03046 Cottbus, Germany; 7Institute for Chemical Technology and Polymer Chemistry (ITCP), Karlsruhe Institute of Technology (KIT), 76128 Karlsruhe, Germany

10:45 **Luminescent, structural and chemical properties of defects in MBE- and CSS-grown CdTe films for solar cell applications** — A.O5 2
Mowafak Al-Jassim, John Moseley, Harvey Guthrey, Zhiwei Wang, Helio Moutinho, Wyatt Metzger and Yanfa Yan
National Renewable Energy Laboratory, Golden, Colorado 80401, USA.

11:00 **Copper(I) oxide (Cu2O) back contact for a pin CdTe solar cell** — A.O5 3
J. Türck, P. Conner, S. Siol, A. Klein, W. Jaegermann
Technische Universität Darmstadt, Materials and Earth Sciences, Surface Science

11:15 **TEM and XPS studies of CdS/CdTe interface: comparison of CdS films deposited by CBD and CSS techniques** — A.O5 4
Han Jun-feng1, 2*, V. Krishnakumar2, Hermann-Josef Schimper2, Wolfram Jaegermann2, M.P. Besland1
1, Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, UMR CNRS 6502, 2 rue de la Houssinière, BP 32229, 44322 Nantes Cedex 3, France 2, Institute of Materials Science, Darmstadt University of Technology, Petersenstr. 23, 64287 Darmstadt, Germany

11:30 **The physics of CdTe p-type doping with Cu** — A.O5 5
J. Perrenoud, C. Gretener, L. Kranz, S. Buecheler, and A.N. Tiwari
Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Thin Films and Photovoltaics, ?berlandstrasse 129, 8600 D?bendorf, Switzerland

11:45 **DISCUSSION SESSION: Contacts and further functional intermediate layers for CdTe solar cells (A. Romeo)**

12:15 **Lunch break**

Industry : fd

14:00 **Challenges for the industrial development of electrodeposited Cu(In,Ga)(S,Se)2 based photovoltaic modules** — A.O6 1
V. Bermudez1, S. J. Ferrer1, P. P. Grand1, V. Izquierdo-Roca2, C. Insignares2, A. Fairbrother2, A. Perez-Rodrigues23
1NEXCIS, Rousset, France, 2IREC, Barcelona, Spain, 3IN2UB Barcelona, Spain

14:30 **Impact of Gallium on variations of the composition in Cu(In,Ga)Se2 thin film solar cells grown on flexible polyimide substrate** — A.O6 2
Stefan Ribbe1,2, Andreas Rahm1, Alexander Braun1, Frank Bertram2, Jürgen Christen2
1Solarion AG, Pereser Höhe 1, 04442 Zwenkau, Germany 2Institute for Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany

14:45 **Cu(In, Ga) Se2 solar cells on flexible substrate fabricated by an innovative roll to roll hybrid sputtering an evaporation process** — A.O6 3
S. Binetti , A. Le Donne, P. Garattini, M. Raluca, S. Marchionna, A. Gasparotto^1, M. Meschia and M. Acciarri
Milano-Bicocca Solar Energy Research Center (MIB-SOLAR) and Dept. of Materials Science, University of Milano-Bicocca, via Cozzi 53, Milano (Italy) ; 1^ Physical Dept. and University of Padova , Via Marzolo 8, Padova (Italy)

15:00 **Characterizing Efficiency Losses in Printed CZTSSe Solar Cells** — A.O6 4
Kaushik Roy Choudhury, Yanyan Cao, Jonathan V. Caspar, Qijie Guo, Lynda K. Johnson, Irina Malajovich, Wei Wu
DuPont Central Research and Development, Experimental Station, Wilmington, DE 19880

15:15 **New materials and processes for thin film CIS solar modules with increased efficiencies and reduced cost** — A.O6 5
T. Dalibor, J. Palm, S. Jost, R. Lechner, S. Pohlner, R. Dietmüller, A. Heiss, H. Vogt, F. Karg
AVANCIS GmbH, Munich, Germany

15:30 **coffee break**

Poster 2: Absorber growth and properties - CZTSSe : David Mitzi + tbd

16:00 **Synthesis and characterization of Cu2ZnGeSe4 thin films for photovoltaic applications** **A.P2 1**
M. Buffière1,2, H. El Anzeery1,2,5,6, G. Brammertz3,4, M. Meuris3,4, J. Poortmans1,2
1 Department of Electrical Engineering (ESAT), KU Leuven, Kasteelpark Arenberg 10, 3001 Heverlee, Belgium; 2 imec- partner in Solliance, Kapeldreef 75, 3001 Leuven, Belgium; 3 imec division IMOMEC - partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium; 4 Institute for Material Research (IMO) Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium; 5 KACST-Intel Consortium Center of Excellence in Nano-manufacturing Applications (CENA), Riyadh, KSA; 6 Microelectronics System Design Department, Nile University, Cairo, Egypt;

16:00 **Fabrication of CZTSSe Solar Cells from Solution Processing of Nanocrystals** **A.P2 2**
Joel van Embden, Anthony Chesman, Enrico Della Gaspera, Noel Duffy, Jacek Jasieniak
CSIRO Materials Science and Engineering Bayview Ave, Clayton, VIC 3168 Australia

16:00 **Raman scattering study of the A-modes in kesterite Cu2ZnSnSe4 polycrystalline thin films** **A.P2 3**
Chia-Wen Chang, Yu-Yun Wang, Ho-Min Chen, Hung-Ru Hsu, Shih-Hsiung Wu, Tung-Po Hsieh, Chung-Shin Wu
Green Energy and Environment Research Laboratories, Industrial Technology Research Institute (ITRI)

16:00 **Study of structural and optoelectronic properties of Cu2Zn(Sn1-xGex)Se4 (x = 0 to 1) alloy compounds** **A.P2 4**
M. Grossberg, K. Timmo, T. Raadik, E. Kärber, V. Mikli
Department of Materials Science, Tallinn University of Technology, Estonia

16:00 **Preparation of Cu2ZnSnSe4 Thin Films through Selenization of Muti-layer Precursors in Selenium Atmosphere for Solar Cell Application** **A.P2 5**
Wei-Chao Chen1, 2, 3, Hsien-Wen Li4, Jih Shang Hwang4, Kuei-Hsien Chen2*, Li-Chyong Chen3
1 Engineering and System Science, National Tsing Hua University 2 Institute of Atomic and Molecular Science, Academia Sinica 3 Center for Condensed Matter Science, National Taiwan University 4 Institute of Optoelectronic Science, National Taiwan Ocean University

16:00 **Defect study of solution-processed Cu2ZnSn(Sx,Se1-x)4 thin film absorbers using photoluminescence and modulated surface photovoltage spectroscopy** **A.P2 6**
Xianzhong Lin1, Thomas Dittrich1, Sergui Levcenco1, Jaison Kavalakkatt1, Martha Ch. Lux-Steiner1,2, and Ahmed Ennaoui1
1 Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany 2 Freie Universität Berlin, Berlin, Germany

16:00 **Morphology study of CZTS formed at diverse annealing conditions using different precursor routes** **A.P2 7**
Verena Kaltenhauser(a), Christine Buchmaier(a), Thomas Rath(a), Stefan M?ller(b), Ferdinand Hofer(c), Roland Resel(d), Gregor Trimmel(a)
(a) Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria (b) Institute of Anorganic Chemistry, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria (c) Institute for Electron Microscopy and Fine Structure Research, Graz University of Technology, Steyrergasse 17, 8010 Graz, Austria (d) Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria

16:00 **Local work function of Cu2ZnSn(S,Se)4 (η> 9.1%) thin-films with respect to ZnS thickness in precursor by two-step sputtering** **A.P2 8**
Gee Yeong Kim1, Ju Ri Kim1 William Jo1,*, Dae-Ho Son2, Kee-Jeong Yang2, Dae-Hwan Kim2, and Jin-Kyu Kang2
1Department of Physics, EwhaWomans University, Seoul, 120-750, Korea; 2Daegu Gyeongbuk Institute of Science and Technology, Daegu, 711-873, Korea

16:00 **Optical spectroscopy studies of Cu2ZnSnSe4Thin Films** **A.P2 9**
M.V.Yakushev1,2; I. Forbes3; A.V.Mudryi1,4; M. Grossberg5; J.Krustok5; N. S. Beattie3; M. Moynihan2; and R.W. Martin1
1Department of Physics, SUPA, University of Strathclyde, Glasgow, G4 0NG, UK; 2Academy of Science of Russia and URFU, Ekaterinburg, Russia; 3Northumbria Photovoltaics Applications Centre, Northumbria University, Newcastle upon Tyne, UK; 4Scientific-Practical Material Research Centre of the National Academy of Science of Belarus, Minsk, Belarus; 5Tallinn University of Technology, Tallinn, Estonia.

16:00 **Formation and characterization of Cu2ZnSiSe4 high band gap absorber for thin film solar cells** **A.P2 10**
Hossam ElAnzeery, Marie Buffière, Ounsi ElDaif, Souhaib Oueslati, Khaled Ben Messaoud, Guy Brammertz , Rafik Guindi, Marc Meuris and Jef Poortmans
KACST-Intel Consortium Center of Excellence in Nano-manufacturing Applications (CENA), Riyadh, KSA; Microelectronics System Design department, Nile University, Cairo, Egypt; imec – partner in Solliance, Kapeldreef 75, 3001 Leuven, Belgium; Department of Electrical Engineering, KU Leuven, Kasteelpark Arenberg 10, 3001 Heverlee, Belgium; Department of Physics, Faculty of Sciences of Tunis, El Manar, Tunisia; Institute for Material Research (IMO) Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium; imec division IMOMEC – partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium

16:00 **Selenization of solution-deposited CZTS precursors under controlled Se overpressure in evacuated glass ampules** **A.P2 11**
Stefan G. Haaß, Carolin M. Sutter, Yaroslav E. Romanyuk, Ayodhya N. Tiwari
Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Thin Films and Photovoltaics, Ueberlandstrasse 129, 8600 Duebendorf, Switzerland

16:00 **Influence of defects on photoluminescence from Cu2ZnSnS4 thin films** **A.P2 12**
J. P. Teixeira (1), R. A. Sousa (1), J. P. Leitão (1), M. G. Sousa (1), A. F. da Cunha (1), P. A. Fernandes (1,2), P. M. P. Salomé (3)
(1) Departamento de Física and I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal; (2) Departamento de Física, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida, 431, 4200-072 Porto, Portugal; (3) International Iberian Nanotechnology Laboratory, Laboratory for Nanostructured Solar Cells, Av. Mestre José Veiga, 4715-330 Braga, Portugal;

16:00 **The influence of SnS powder during annealing process on S/(S+Se) ratio and open circuit voltage in CZTSSe thin film solar cells** **A.P2 13**
Chung-hao Cai , Shih-Yuan Wei , Chih-Huang Lai
Department of Materials Science and Engineering , National Tsing Hua University , Taiwan R.O.C

16:00 **Pulsed laser deposition of thin films of CZTS: Fluence and substrate temperature dependence** **A.P2 14**
Andrea Cazzaniga, Rebecca B. Ettlinger, Stela Canulescu, Jørgen Schou, Nini Pryds
DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde; Denmark, DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark; DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark; DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark; DTU Energy Conversion, Technical University of Denmark, DK-4000 Roskilde, Denmark

16:00 **Reactively sputtered films in the Cu2S-ZnS-SnSx system: from metastability to equilibrium** **A.P2 15**
Y. Ren, J. J. Scragg, T. Ericson, T. Kubart, C. Platzer-Björkman
Ångström Solar Center, Solid State Electronics, Uppsala University, Box 534, SE-75121 Uppsala, Sweden

16:00 **Compositionally tunable structure and optical properties of Cu1.85CdxZn1-xSnS4** **A.P2 16**
M.Pilvet, M.Kauk-Kuusik, M.Altosaar, M.Grossberg, J.Krustok, K.Timmo, A. Mere, V. Mikli, M. Danilson
Department of Materials Science, Tallinn University of Technology

16:00 **Preparation of Cu2ZnSn(S,Se)4 solar cells using a chemical bath deposition route** **A.P2 17**
Chao Gao1, Thomas Schnabel2, Tobias Abzieher2, Mario Lang1, Christoph Krämmer1, Erik Ahlswede2, Michael Powalla2,3, Heinz Kalt1, and Michael Hetterich1
1 Institute of Applied Physics, Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany; 2 Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), 70565 Stuttgart, Germany; 3 Light Technology Institute (LTI), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany

16:00 **Preparation of Cu2ZnSnSe4 solar cells using a co-evaporation route** **A.P2 18**
Chao Gao1, Thomas Schnabel2, Tobias Abzieher2, Mario Lang1, Christoph Krämmer1, Michael Powalla2,3, Heinz Kalt1, and Michael Hetterich1
1 Institute of Applied Physics, Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany; 2 Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), 70565 Stuttgart, Germany; 3 Light Technology Institute (LTI), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany

16:00 **Cu2-Zn-IV-VI4 (IV=Ge,Sn; VI=S,Se) quaternary chalcogenide: structural and optoelectronic characterization** **A.P2 19**
Eduard Garcia-Llamas(a), Raquel Caballero(a), Ivan V. Bodnar(b), Ivan A. Victorov(b), Susan Schorr (c), Máximo León(a) and José Manuel Merino(a)
(a) Photovoltaic Materials Group, Facultad de Ciencias, Universidad Autónoma de Madrid (UAM), 28049 Madrid, Spain (b) Institute of Physics of Solids and Semiconductors, Academy of Sciences of Belarus, 17 P. Brovka Str., 220072, Minsk, Belarus (c) Free University Berlin, Institute of Geological Sciences, Malteserstr. 74-100, Berlin, Germany

16:00 **A study on the importance of ligands towards the CZTS particle system for thin film solar cells** **A.P2 20**
Stijn Flamee; Kim De Nolf; Dirk Van Genechten; Phillip Dale; Jose Martins; Zeger Hens
Ghent University, Umicore, University of Luxembourg

16:00 **Optical and microstructural characterization of CZTS thin films with different composition** **A.P2 21**
C. Malerba, M. Valentini, C. L. Azanza Ricardo, P. Scardi, A. Mittiga
C. Malerba, C. L. Azanza Ricardo, P. Scardi: University of Trento – DICAM, via Mesiano 77, 38123 Trento, Italy; M.Valentini: Sapienza - University of Roma – Department of Physics, p.le Aldo Moro 5, 00156 Rome, Italy; A. Mittiga: ENEA Casaccia Research Center, via Anguillarese 301, 00123 Rome, Italy

16:00 **Evolution of the structure and the properties of copper sulfide films as a function of the deposition pressure and the annealing temperature** **A.P2 22**
A. Didelot, P. Miska, J.F. Pierson
Institut Jean Lamour, UMR CNRS Université de Lorraine, Nancy, France

16:00 **Synthesis and Characterization Cu2ZnSnS4 (CZTS) Thin Film Prepared from (Cu,Zn,Sn)-Ethanolamine Complex Compound** **A.P2 23**
Ersan Y. Muslih, Kyoo Ho Kim
Cu2ZnSnS4 (CZTS) thin film for solar cell appllication

16:00 **Detection of selenium residues in CZTSSe via Raman spectroscopy** **A.P2 24**
Mungunshagai Gansukh1, Dahyun Nam1, Dae-Ho Son2, Dae-Hwan Kim3, Kee-Jeong Yang2,3, Jin-Kyu Kang 2,3, Hyeonsik Cheong1
1Department of Physics, Sogang University, 35 Baekbeom-ro, Mapo-gu, Seoul, 121-742, Republic of Korea; 2Advanced Convergence Technology Center, Daegu Gyeongbuk Institute of Science & Technology, 223 Sang-ri, Hyeonpung-myeon, Dalseong-gun, Daegu 711-873, Republic of Korea; 3Energy Research Division, Daegu Gyeongbuk Institute of Science & Technology, 223 Sang-ri, Hyeonpung-myeon, Dalseong-gun, Daegu 711-873, Republic of Korea

16:00 **Non-toxic sol-gel spin coating approach for low cost, earth-abundant photovoltaic absorber: Cu2ZnSn(SxSe(1-x))4, for solar-cell applications** **A.P2 25**
Venkatesh Tunuguntla1,2,3, Wei-Chao Chen1,2,4, Pei Hsuan Shih1,5, Kuei-Hsien Chen1, Li-Chyong Chen2
1Institute of Atomic and Molecular Science, Academia Sinica, Taipei, Taiwan; 2Center for Condensed Matter Science, National Taiwan University, Taipei, Taiwan; 3Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan; 4 Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; 5Institute of Optoelectronic Sciences, Nation Taiwan Ocean University, Keelung, Taiwan;

16:00 **The influence of Ag incorporation on crystallinity, band gap, morphology and device characteristics in CZTSSe solar cells** **A.P2 26**
Shih-Yuan Wei, Chung-Hao Cai, Chih-Huang Lai
Department of Materials science and engineering, National Tsing Hua Unirvirsity, R.O.C.

16:00 **Galvanostatically-electrodeposited Cu-Zn-Sn multilayers as precursors for crystallising kesterite Cu2ZnSnS4 thin films** **A.P2 27**
Rachmat Adhi Wibowo1, Raad Hamid2, Theodoros Dimopoulos1
1) AIT Austrian Institute of Technology, Energy Department, Photovoltaic Systems, Giefinggasse 2, 1210 Vienna, Austria 2) AIT Austrian Institute of Technology, Mobility Department, Electric Drive Technologies, Giefinggasse 2, 1210 Vienna, Austria

16:00 **Solid State Chemistry Investigations on Cu2ZnSnS4 derivatives for photovoltaic applications** **A.P2 28**
L. Choubrac (1), A. Lafond (1), C. Guillot-Deudon (1), M. Paris (1), X. Rocquefelte (1), P. Fertey (2) and S. Jobic (1)
(1) Institut des Matériaux Jean Rouxel, Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322 Nantes cedex 3, France (2) Synchrotron SOLEIL, L'Orme des Merisiers Saint-Aubin - BP 48, GIF-sur-YVETTE CEDEX, 91192, France

16:00 **Effect of thermal annealing on the structural, morphological and optical properties of PLD grown Cu2ZnSnS4 thin films** **A.P2 29**
G. Teterina1, V. Nevolin1,2, I. Sipaylo1, A. Zenkevich1,3
1 NRNU "Moscow Engineering Physics Institute", 115409, Moscow, Russia 2 P.N. Lebedev Physical Institute of the Russian Academy of Science, 119991, Moscow, Russia 3 Russian Research Center "Kurchatov Institute", 123182, Moscow, Russia

16:00 **Effect of Annealing Atmosphere on the Structural and Optical Properties of Cu2ZnSnS4 (CZTS) Thin Films Deposited by Vacuum Evaporation Method** **A.P2 30**
R. Touati*, M. Ben Rabeh, M.Kanzari
Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs-ENIT BP 37, le Belvédère 1002-Tunis, Tunisie ; Laboratoire de Photovoltaïques et Matériaux Semi-conducteurs-ENIT-IPEITunis Montfleury-Université de Tunis.

16:00 **Fabrication of Cu2Zn(Sn,Ge)Se4 thin-film solar cells by printing and high-pressure sintering process** **A.P2 31**
M. Morihama, T. Maeda, T. Wada
Department of Materials Chemistry, Ryukoku University

16:00 **Effect of selenization conditions on the growth and properties of Cu2ZnSn(S,Se)4 thin films** **A.P2 32**
S. Ranjbar (a), M. R. Rajesh Menon (a), M. G. Sousa (a), P. A. Fernandes (a,b), A. F. da Cunha (a)
(a) I3N- Departamento de Física, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal; (b) Departamento de Física, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida, 431, 4200-072 Porto, Portugal

16:00 **Optical functions and crystal structure of epitaxial and polycrystalline CZTSe** **A.P2 33**
L. Gütay (1), Ö. Erdogan (1), C. Stroth (1), I. Riedel (1), R. Djemour (2), M. Mousel (2), A. Redinger (2), S. Siebentritt (2)
(1) Laboratory for Chalcogenide Photovoltaics, University of Oldenburg, Oldenburg, Germany; (2) Laboratory for Photovoltaics, University of Luxembourg, Belvaux, Luxembourg

16:00 **Effects of structural and microstructural properties on optoelectronic characteristics of Cu2ZnSnSe4 thin film solar cells** **A.P2 34**
M. Dimitrievska (1), S. Lopez (1), G. Gurieva (2), X. Fontané (1), R. Günder (2), V. Izquerdo-Roca (1), E. Saucedo (1), S. Schorr (2 3), A. Perez-Rodrigez (1 4)
(1) Catalonia Institute for Energy Research (IREC), Jardin de les Dones de Negre 1, 08930, Sant Adrià de Besòs, Spain; (2) Helmholtz Centre Berlin for Materials and Energy, Department Crystallography, Hahn-Meitner-Platz 1, 14109 Berlin, Germany; (3) Freie Universität Berlin, Institute of Geological Sciences, Malteserstr. 74-100, 12249 Berlin, Germany; (4) IN2UB, Departament d'Electrònica, Universitat de Barcelona, C. Martí i Franquès 1, 08028 Barcelona, Spain

16:00 **Cu2SnS3 thin films grown by co-sputtering and post-annealing** **A.P2 35**
Romain Bodeux and Sebastien Delbos
EDF R&D, Institute of Research and Development on Photovoltaic Energy (IRDEP), 6 quai Watier, 78401 Chatou, France

16:00 **Influence of sodium and H2S annealing on CZTS solar cells sputtered from a quaternary compound target** **A.P2 36**
Patrice Bras, Jan Sterner, Charlotte Platzer-Björkman
Midsummer AB, SE-17543 Järfälla, Sweden/Solid State Electronics, Uppsala University, Box 534, 75121 Uppsala, Sweden.; Midsummer AB, SE-17543 Järfälla, Sweden; Solid State Electronics, Uppsala University, Box 534, 75121 Uppsala, Sweden.

16:00 **Epitaxial Cu2ZnSnSe4 layers by annealing of Sn/Cu/ZnSe(001) precursors on GaAs(001)** **A.P2 37**
C. Krämmer, J. Sachs, L. Pfaffmann, M. Lang, C. Gao, D. Gerthsen, H. Kalt, M. Powalla, M. Hetterich
Institute of Applied Physics, Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany; Institute of Applied Physics, KIT; Laboratory for Electron Microscopy, KIT; Institute of Applied Physics, KIT; Institute of Applied Physics, KIT; Laboratory for Electron Microscopy, KIT; Institute of Applied Physics, KIT; Light Technology Institute, KIT and Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), 70565 Stuttgart, Germany; Institute of Applied Physics, KIT;

16:00 **Crystallization behavior of Cu2ZnSn(Sx ,Se1-x)4 absorbers processed from sputtered Cu2ZnSnS4 precursors under different selenization conditions** **A.P2 38**
Solange Temgoua; Romain Bodeux;Negar Naghavi and Sebastien Delbos
IRDEP(Institute of Research and Development on Photovoltaic Energy,(EDF/CNRS/Chimie-paristech, UMR7174) 6 Quai Watier, 78401, Chatou, France.

16:00 **Controlling metal ratios and electronic properties in DMSO solution-processed Cu2ZnSn(SSe)4 solar cells.** **A.P2 39**
M.Werner, C. M. Sutter-Fella, Y. E. Romanyuk, A. N. Tiwari
Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, 8600 Duebendorf, Switzerland

16:00 **Preparation and characterization of CZTSe thin films by rapid thermal selenization** **A.P2 40**
Bae-Heng Tseng, Yun-Feng Chen, Cian-Huei Gao, Ge-Wei Yeh
Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Kaohsiung 80424, Taiwan

16:00 **Structural and microstructural characterisation of Cu2ZnSn(S1-xSex)4 thin films** **A.P2 41**
G. Gurieva1, M. Dimitrievska2, R. Günder1, H. Xie2, V. Izquierdo-Roca2, A. Pérez-Rodríguez 2,3, E. Saucedo2, S. Schorr1,4
1 Helmholtz Centre Berlin for Materials and Energy, Department Crystallography, Hahn-Meitner-Platz 1, 14109 Berlin, Germany 2 Catalonia Institute for Energy Research (IREC), Jardin de les Dones de Negre 1, 08930, Sant Adrià del Besòs, Spain. 3 IN2UB, Departament d´Electrònica, Universitat de Barcelona, C. Martí Franquès 1, 08028 Barcelona, Spain 4 Freie Universität Berlin, Institute of Geological Sciences, Malteserstr. 74-100, 12249 Berlin, Germany

16:00 **CZTS inks prepared by microwave assisted method for inkjet and spray deposition** **A.P2 42**
Thibaut Martini 1.3, Alain Ricaud1, Caroline Chubileau2, Olivier Poncelet2, Konstantin Tarasov2, Céline Martin3, Anne Blayo3
1Screen-Solar La Petite Maison ZEN - 390 Route de la Traverse 73 000 MONTAGNOLE; 2 CEA LITEN / SEN / LSIN, 17 rue des martyrs, 38054 Grenoble Cedex 9; 3Laboratoire de Génie des Procédés Papetiers. UMR CNRS 5518, 461 rue de la Papeterie, CS 10065, 38402, Saint-Martin d'Hères Cedex

16:00 **Epitaxial Cu2ZnSnSe4** **A.P2 43**
Alex Redinger 1, Jan Sendler 1, R. Djemour 1, David Regesch 1, Heiko Groiss 2, Dagmar Gerthsen 2 and Susanne Siebentritt 1
[1] University of Luxembourg, Laboratory for Photovoltaics, 41 rue du Brill, Luxembourg; [2] Karlsruhe Institute of Technology, Laboratory for Microscopy, Engesserstr. 7, Karlsruhe, Germany

16:00 **Growth of Cu2ZnSnS4 Thin Films by Metal Xanthate Precursors** **A.P2 45**
Akiko MOCHIHARA1, 2, Kenji YOSHINO1, 2, *, Minobu KAWANO3, Yuhei OGOMI2, 3, Shyam S. PANDEY2, 3, Qing SHEN2, 4, Taro TOYODA2, 4 and Shuzi HAYASE2, 3
1Department of Electrical and Electronic Engineering, Miyazaki University, 1-1 Gakuen Kibanadai-nishi, Miyazaki 889-2192, Japan 2CREST, Japan Science and Technology Agency (JST), 4-1-8 Honcho, Kawaguchi, Saitama 332-0012, Japan. 3Department of Engineering Science, Faculty of Informatics and Engineering, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu, Tokyo 182-8585, Japan. 4Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, 2-4 Hibikino, Wakamatsu, Kitakyushu 808-0196, Japan

16:00 **Preparation and characterization of CZTS Thin films by electrodeposition technique** **A.P2 46**
T. S. Tlemçani1, F. Cherkaoui El Moursli2, F. Hajji2, E.B. Benameur1, I. Chaki1, A. Belayachi1and M. Abd-Lefdil1D. Muller3, K. Bouras3, and A. Slaoui3
1University of Mohammed V-Agdal, Materials Physics Laboratory, P. B. 1014, Rabat, Morocco. 2Equipe Batteries Lithium et Dépôts Electrolytiques, Université Mohammed V-Agdal, Rabat, Morocco. 3ICube UMR 7357, 23 rue du Loess - BP 20 CR - 67037 Strasbourg- France.

16:00 **Optical properties and secondary phase identification in PLD-grown Cu2ZnSnS4 for thin-film photovoltaics** **A.P2 47**
Andrea Crovetto (1), Andrea Cazzaniga (2), Rebecca B. Ettlinger (2), Jørgen Schou (2), Ole Hansen (1,3)
(1) DTU Nanotech, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark; (2) DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark; (3) CINF, Center for Individual Nanoparticle Functionality, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark

16:00 **Electronic transport properties of Cu2ZnSn(S1–xSex)4 thin films obtained from Lift-off process** **A.P2 48**
A. Darga, F. Sorin, C. Longeaud, Yury Berdnikov, Elin Sondergard, J.P. Kleider, J. Alvarez, A. Jaffre
Sorbonne Universités, UPMC Univ Paris 06, UMR 8507, Laboratoire de Génie Electrique de Paris, F-91190 Gif sur Yvette, France; Institute of Materials, Laboratory of Photonic materials and fiber devices, Ecole Polytechnique Fédérale de lausanne, Switzerland; CNRS, UMR 8507, Laboratoire de Génie Electrique de Paris, F-91190 Gif sur Yvette, France; Surface du Verre et Interfaces, UMR 125 CNRS/Saint-Gobain 39 Quai Lucien Lefranc, 93303 Aubervilliers Cedex, France

16:00 **Application of TAGUCHI's design of experiments for the preparation of Cu2ZnSnS4 (CZTS) absorber by Spray Pyrolysis.** **A.P2 49**
Y.ARBA1, H.TCHOGNIA1, B. HARTITI1, A. RIDAH1, P.THEVENIN2
1- MAC&PM Laboratory, ANEPMAER Group, Department of Physics, FSTM, University Hassan II Mohammédia-casablanca, Mohammedia, Morocco 2- LMOPS Laboratory, Université of Lorraine, Metz, France

16:00 **Cu2ZnSnS4 thin films derived from metal oxide nanoparticles** **A.P2 50**
K.Tarasov (1), A.Lafond (2), C.Guillot-Deudon (2), T.Martini (1,3)
(1) CEA-DRT (LITEN/DTNM/SEN/LSIN) 17 rue des Martyrs, 38054 Grenoble, FRANCE; (2) Faculté des sciences de Nantes, Institut des matériaux Jean Rouxel, 2 rue de la Houssinière BP 32229, 44322 Nantes, FRANCE (3) Screen-Solar, 390 Route de la Traverse (La Petite Maison ZEN) 73000 Montagnole, FRANCE;

16:00 **Nanocrystals capped with Metal Chalcogenide Complex without ligand exchange process: A simple way to prepare soluble precursor for Cu2ZnSn(S,Se)4** **A.P2 51**
Jeff Lin,Tzu-Ying Lin,Shih-Yuan Wei, Chia-Hao Hsu, Wei-Hao Ho, Jung-Wei Liao,Chih-Huang Lai*
National Tsing Hua University Department of Materials Science and Engineering

16:00 **The Influence of Precursor Cu/Sn ratio and Two-Stage Processing Conditions on the Microstructure of Cu2ZnSnSe4 and Cu2SnSe3** **A.P2 52**
J. A. Marquez, N. Pearsall, I. Forbes
NPAC, Faculty of Engineering and Environment, University of Northumbria, Ellison Place, Newcastle upon Tyne, United Kingdom, NE1 8ST.

16:00 **High Vapour Pressure Selenization and Grain Growth Mechanisms of Sulfide-CZTS Precursors** **A.P2 53**
Justus Just(1,2), Steffen Kretzschmar(1), Roland Mainz(1), Claudia Coughlan(3;4), Kevin Ryan(3;4), Thomas Unold(1)
1: Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Germany; 2: Bergische Universität Wuppertal, Gaußstraße 20, 42109 Wuppertal, Germany; 3: Materials and Surface Science Institute and Department of Chemical and Environmental Sciences, University of Limerick, Limerick, Ireland; 4: 4SFI-Strategic Research Cluster in Solar Energy Research, University of Limerick, Limerick, Ireland

16:00 **Crystallization of Cu2ZnSnS4 (CZTS) Absorber Layer Prepared by Sulfurization of Metal-Ethanolamine Complex Compound** **A.P2 54**
Kyoo Ho Kim*,Ersan Y. Muslih
School of Material Science and Engineering, Nano and Thin Film Laboratory, Yeungnam University

16:15 **GaN bulk crystals – status and challenges** **W.1 1**
Izabella Grzegory
Institute of High Pressure Physics PAS Unipress Warsaw, Poland

16:45 **Chemistry of Ammonothermal Nitride Crystal Growth** **W.1 2**
Shiyu Zhang, Theresia M. M. Richter, Jan Hertrampf, Nicolas S. U. Alt, Eberhard Schlücker, Rainer Niewa
Shiyu Zhang; Theresia M. M. Richter; Jan Hertrampf; Rainer Niewa, Universität Stuttgart, Institut für Anorganische Chemie, Pfaffenwaldring 55, 70569 Stuttgart, Germany Nicolas S. U. Alt; Eberhard Schlücker, Friedrich-Alexander-Universität Erlangen-Nürnberg, Lehrstuhl für Prozessmaschinen und Anlagentechnik, Cauerstr. 4, 91058 Erlangen, Germany

17:15 **Charge transfer contribution to adsorption energy– consequences to crystal growth of semiconductors from the vapor** **W.1 3**
Stanislaw Krukowski, Pawel Kempisty, Pawel Strąk, Konrad Sakowski1
Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland and Interdisciplinary Centre for Materials Modeling, Warsaw University, Pawińskiego 5a, 02-106 Warsaw, Poland

17:30 **Multiphonon Processes in cubic and hexagonal GaN and ZnO** **W.1 4**
H.W. Kunert 1, A.G. J. Machatine 1, M. Govender 1,2, B. Mwakikunga 2
1 Department of Physics, University of Pretoria, South Africa, 2 National Centre for Nano-structured Materials, CSIR, P. O. Box 395, Pretoria, 0001, South Africa

18:00 **Development of single crystalline magnetoelastic materials for energy conversion applications** **W.2 1**
Thomas A. Lograsso
Division of Materials Science and Engineering, Ames Laboratory, Ames IA 50011

18:30 **Investigation of High Performance Relaxor-based Ferroelectric Single Crystals and Their Applications in Infrared Detectors** **W.2 2**
Long Li, Haosu Luo, Xiangyong Zhao, Xiaobing Li, Qing Xu, Linrong Yang, Wenning Di
Key Laboratory of Inorganic Functional Materials and Devices, Shanghai Institute of Ceramics, Chinese Academy of Sciences

18:45 **Conformational studies of poly(vinylidene fluoride) (PVDF) – a density functional theory investigation of the formation of the piezoelectric β-phase PVDF** **W.2 3**
Martin Bohlén, Kim Bolton
University of Borås – School of Engineering, Allégatan 1, 501 90 Borås, Sweden

19:00 **Pyroelectricity in the model perovskite SrTiO3?** **W.2 4**
Jachalke S. (1), Mehner E. (1), Hanzig J. (1), Hanzig F. (1), Zschornak M. (1), Stoecker H. (1), Meyer D.C. (1)
(1) TU Bergakademie Freiberg, Leipziger Str. 23, 09596 Freiberg

28 May 2014

08:15 **Growth of AlN bulk crystals for AlGaN-based devices (UV LEDs, lasers, sensors, and power electronics)** **W.3 1**
Matthias Bickermann, Andrea Dittmar, Carsten Hartmann, Klaus Irmscher, Sandro Kollowa, Albert Kwasniewski, Frank Langhans, Tom Neugut, Jürgen Wollweber, Arne Knauer, Markus Weyers, Christoph Reich, Frank Mehnke, Christian Kuhn, Michael Kneissl
Leibniz-Institute for Crystal Growth, Max-Born-Strasse 2, 12489 Berlin, Germany; Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Str. 4 12489 Berlin, Germany; Institute of Solid State Physics, Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany

CZTSSe: growth : fd

08:30 **High temperature coevaporation of Cu2ZnSnSe4** **A.O7 1**
Alex Redinger, Rabie Djemour, Jan Sendler, Thomas Paul Weiss, Marina Mousel and Susanne Siebentritt
University of Luxembourg, Laboratory for Photovoltaics, 41 rue du Brill, Luxembourg

08:45 **The formation mechanism of secondary phases in Cu2ZnSnSe4 absorber layer** **A.O7 2**
H. Yoo, R. A. Wibowo, G. Manoharan, A. Verger, R. Lechner, J. Palm, S. Jost, R. Hock
Chair for Crystallography and Structural Physics, Friedrich-Alexander University Erlangen-Nürnberg, Staudtstraße 3, D-91058, Erlangen, Germany; Saint-Gobain Recherche, 39, Quai Lucien Lefranc, 93303 Aubervilliers Cedex, France; AVANCIS GmbH & Co. KG, Otto-Hahn-Ring 6, D-81739 München, Germany

08:45 **Growth of large size diamond single crystals by plasma assisted chemical vapour deposition** **W.3 2**
Alexandre Tallaire
LSPM-CNRS, Université Paris 13

09:00 **Electrodeposited Cu2ZnSnS4 thin film solar cell with an efficiency of 8%** **A.O7 3**
Feng Jiang, Shigeru Ikeda, Takashi Harada, Michio Matsumura
Research Center for Solar Energy Chemistry, Osaka University

09:15 **GaN on Si – a hype or the bright future** **W.3 3**
Marianne Germain
EpiGaN nv, Kempische Steenweg 293, 3500 Hasselt, Belgium

09:15 **Soft thermal processing of Cu2ZnSnSe4/CdS hetero-junction for solar cell efficiency improvement** **A.O7 4**
Y. Sanchez1, M. Neuschitzer1, S. Lopez-Marino1, V. Izquierdo-Roca1, L. Calvo-Barrio2,4, O. Vigil-Galan3, A. Perez-Rodriguez1,4, E. Saucedo1
1. Catalonia Institute for Energy Research (IREC), Jardins de les dones de negre 1, 08930 Sant Adria del Besos-Barcelona, Spain 2. Centres Cientifics i Tecnologics de la Universitat de Barcelona (CCiTUB). LLuis Sole i Sabaris 1-3, 08028 Barcelona, Spain. 3. Escuela Superior de Fisica y Matematicas-Instituto Politecnico Nacional (IPN), 07738 Mexico DF, Mexico. 4. Departament de Electronica (IN2UB), Universitat de Barcelona, Marti i Franques 1, 08028 Barcelona, Spain.

09:30 **Effects of deposition termination on CZTSe device characteristics** **A.O7 5**
I.L. Repins,1 J.V. Li,1 A. Kanevce,1 C. Perkins,1 K.X. Steirer,1 J. Pankow,1 G. Teeter,1 M. Bär,2,3,4 J.H. Alsmeier,2 L. Weinhardt,4,5,6 D.A. Hanks,2,4 R.G. Wilks,2 C. Heske,4,5,6 D. Kuciauskas,1 C. Beall,1 C. Dehart, 1 J. Carapella, 1 B. Bob, 7 J.S. Park, 1 S.H. Wei1
1 National Renewable Energy Laboratory, Golden, CO 80401, USA ; 2 Solar Energy Research, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; 3 Institut für Physik und Chemie, Brandenburgische Technische Universität Cottbus-Senftenberg, Cottbus, Germany; 4 Department of Chemistry, University of Nevada, Las Vegas, Las Vegas, NV, USA; 5 Institute for Photon Science and Synchrotron Radiation, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany; 6 ANKA Synchrotron Radiation Facility, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany; 7 Department of Materials Science and Engineering, University of California, Los Angeles, CA 90095, USA;

09:45 **High temperature epitaxial growth of graphene and SiC** W.3 4
Mikael Syväjärvi
Linköping University and Graphensic AB, Sweden

10:00 **coffee break**

CZTSSe: interface + electrical analyses : fd

10:30 **Observations of an order-disorder transition in Cu2ZnSnS4 thin films** A.O8 1
Jonathan J. S. Scragg (a), Charlotte Platzer-Björkman (a), Mukesh Kumar (b), Clas Persson (c), Léo Choubrac (d), Jan Sendler (e), Susanne Siebentritt (e)
(a) Ångström Solar Center, Solid State Electronics, Uppsala University, Box 534, SE-751 21 Uppsala, Sweden (b) Environmental Remediation Materials Unit, National Institute for Materials Science, Ibaraki 305-0044, Japan (c) Department of Physics, University of Oslo, NO-0316 Oslo, Norway and Department of Materials Science and Engineering, Royal Institute of Technology, SE-100 44 Stockholm, Sweden (d) Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS 2, rue de la Houssinière, BP 32229, 44322 Nantes cedex 03, France, (e) Université du Luxembourg, Laboratoire Photovoltaïque, 41, rue du Brill, L-4422 Belvaux, Luxembourg

10:45 **Development of SiC crystal growth in the past, present and future** W.4 1
Shin-ichi NISHIZAWA
National Institute of Advanced Industrial Science and Technology

10:45 **Atomic scale insights into Cu2ZnSnSe4 thin-film solar cells by Atom Probe Tomography** A.O8 2
Torsten Schwarz 1, Pyuck-Pa Choi 1, Oana Cojocaru-Mirédin 1, Marina Mousel 2, Alex Redinger 2, Susanne Siebentritt 2, Silvana Botti 3, and Dierk Raabe 1
1 Max-Planck-Institut für Eisenforschung, Max-Planck-Str. 1, 40237, Düsseldorf, Germany; 2 Laboratory for Photovoltaics, University of Luxembourg, Belvaux, Luxembourg; 3 LPMCN, CNRS, Université Lyon 1, Villeurbanne, France

11:00 **Physical and Electrical characterization of high-performance Cu2ZnSnSe4 based thin film solar cells** A.O8 3
S. Oueslati, G. Brammertz, M. Buffière, H. ElAnzeery, O.Touayar, C. Köble, M. Meuris, J. Poortmans.
KACST-Intel Consortium Center of Excellence in Nano-manufacturing Applications (CENA), Riyadh, KSA; imec division IMOMEC - partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium ; Institute for Material Research (IMO) Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium ; imec-partner in Solliance, Kapeldreef 75, 3001 Leuven, Belgium ;Department of Electrical Engineering, KU Leuven, Kasteelpark Arenberg 10, 3001 Heverlee, Belgium ; Department of Physics, Faculty of Sciences of Tunis, El Maner, Tunisia ;Microelectronics System Design Department, Nile University, Cairo, Egypt ;National Institute of Applied Sciences and Technology, INSAT, Tunisia; Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany.

11:15 **Phase and Defect Quantization in CZTS Films using Resonant Diffraction** A.O8 4
K.H. Stone, M.I. Ahmad, V.L. Pool, B. Shyam, S. Christensen, I. Repins M.F. Toney
SSRL, Materials Science Division, SLAC National Accelerator Laboratory, Menlo Park, CA; Chemical and Material Science, National Renewable Energy Laboratory, Golden, CO

11:30 **Photoluminescence and DLTS investigation of reactively sputtered Cu2ZnSnS4 thin film solar cells** A.O8 5
L. Van Puyvelde (1), J. Lauwaert (1), P. F. Smet (1), D. Poelman (1), R. Van Deun (2), T. Ericson (3), J. J. Scragg (3), C. Platzer-Björkman (3), S. Khelifi (4), H. Vrielinck (1)
(1) Department of Solid State Sciences, Ghent University, Gent, Belgium (2) L3 – Luminescent Lanthanide Lab, Department of Inorganic and Physical chemistry, Ghent University, Gent, Belgium (3) Ångström Solar Center, Solid State Electronics, Uppsala University, Uppsala, Sweden (4) Department of Electronics and Information Systems, Ghent University, Gent, Belgium

11:45 **Impact of Annealing Treatment Before Buffer Layer Deposition on Cu2ZnSn(S,Se)4 Solar Cell** A.O8 6
Daisuke Hironiwa1, Noriyuki Sakai2, Takuya Katou2, Hiroki Sugimoto2, Ryo Takai3, Jakapan Chantana3 and Takashi Minemoto3
1Ritsumeikan Global Innovation Research Organization, Ritsumeikan University 2Energy Solution Business Center, Showa Shell Sekiyu K.K 3Department of Electrical and Electronic Engineering, Ritsumeikan University

12:00 **DISCUSSION SESSION: CZTSSe solar cells - limited by bulk or interface(s)? (D. Mitzi/T. Minemoto)**

12:30 **Lunch break**

Poster 3: buffers/contacts, structural studies and modeling, growth control, and nanostructuring : Takashi Minemoto + tbd

14:00 **Transmission Electron Microscopy Studies on Cu2ZnSnS4 Solar Cell Absorber Material** A.P3 1
Nessrin Kattan, Bo Hou, David J. Ferm?n, David Cherns
University of Bristol

14:00 **Raman Peak Position of Cu(In,Ga)Se2 Film for Predication of Ga/(In+Ga) Content near Its Surface and Open-Circuit Voltage** A.P3 2
Jakapan Chantana[a],Daisuke Hironiwa[a],Taichi Watanabe[b],Seiki Teraji[b],Kazunori Kawamura[b],Takashi Minemoto[a]
[a]Department of Electrical and Electronic Engineering, Ritsumeikan University, 1-1-1 Nojihigashi, Kusatsu, Shiga 525-8577, Japan [b]Environment & Energy Research Center, Nitto Denko Corporation, 2-8 Yamadaoka, Suita, Osaka 565-0871, Japan

14:00 **Spray deposition of Ag nano-dots for absorption enhancement of extremely thin ILGAR® absorber layers** A.P3 3
Y. Liu, Y.P. Fu, T. Dittrich, R. Sáez-Araoz, M. Schmid, M.C. Lux-Steiner, C.-H. Fischer
Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany

14:00 **Second generation of PV structures based on zinc oxide films grown by atomic layer deposition** A.P3 4
R. Pietruszka1, G. Luka1, B. S. Witkowski1, M. Godlewski1,2
1Institute of Physics, Polish Academy of Sciences, Warsaw, Poland 2 Department of Mathematics and Natural Sciences College of Science, Cardinal Stefan Wyszynski University, Warsaw, Poland

14:00 **Cu(InGa)Se2 thin film solar cell with an inset of rare-earth doped ZnO conversion layer** A.P3 5
Hyeonwook Park(a), Hyungmin Lee(a), Matteo Balestrieri(b), Guy Shmerber(b), Gerald Ferblantier(c), S. Colis(b), Aziz Dinia(b), Abdelilah Slaoui(c), Chinho Park(a), Jae Hak Jung(a) and Woo Kyoung Kim(a)(*)
(a) School of Chemical Engineering, Yeungnam University, Republic of Korea ; (b) Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, CNRS UMR 7504, France ; (c) ICube, Université de Strasbourg-CNRS, France

14:00 **Improvement of CdTe Solar Cell Performance by Using O-doped CdS Window Layer** A.P3 6
Hui Li, Xiangxin Liu, Junfeng Han, Marie-paule Besland
The Key Laboratory of Solar Thermal Energy and Photovoltaic System, Institute of Electrical Engineering, Chiness Academy of Sciences; Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, UMR CNRS;

14:00 **Photothermal and photoluminescence spectra of Cu(InGa)Se2 with CdS and ZnS buffer layers -- Effect of buffer layer formation on the absorption edges** A.P3 7
T. Hamada1), H. Hisamatsu1), N. Naghavi2), J. F. Guillemoles2), D. Lincot2), K. Sakai1), A. Fukuyama1), and T. Ikari1)
1) DEEAP, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki, 889-2192, Japan 2 IRDEP - UMR 7174 EDF/CNRS/CHIMIE-PARISTECH, 6 quai Watier, 78401 Chatou Cedex, France

14:00 **Fabrication of vertical Cu2ZnSnS4/Mo/Si nanocylinder arrays** **A.P3 8**
Chonge Wang, Akihito Kondo , Takuya Yamaguchi, Shukichi Tanaka, Yukihiro Tominari,Yasuhiro Hara, Tomohiro Shimizu, Shoso Shingubara
Department of Mechanical Engineering, Kansai University, Japan

14:00 **Adaptation of the surface-near Ga content in co-evaporated CIGS for CdS versus ZnS-based buffer layers** **A.P3 9**
Torben Klinkert, Thibaud Hildebrandt, Marie Jubault, Frédérique Donsanti, Jean-François Guillemoles, Negar Naghavi
1 EDF R&D, Institute of Research and Development on Photovoltaic Energy (IRDEP), Chatou, France 2 CNRS, IRDEP, UMR 7174, 78401 Chatou, France 3 Chimie ParisTech, IRDEP, 75005 Paris, France

14:00 **Indium Oxysulfide films by Atomic Layer Deposition (ALD) as buffer layers in CIGS solar cells** **A.P3 10**
Cathy Bugot, Nathanaëlle Schneider, Daniel Lincot, Frédérique Donsanti
Institut de Recherche et Développement sur l'Energie Photovoltaïque (IRDEP), UMR 7174 (EDF-CNRS-Chimie Praistech)

14:00 **Optimization of parameters for deposition of ZnO films by Sol Gel using Taguchi method** **A.P3 11**
Youssef Ammaih ,Abderrazak Lfakir , Bouchaib Hartiti Abderraouf Ridah ,Philippe Thevenin,Meryane Siadat
1) MAC & PM Laboratory, ANEPMAER group, Faculty of Science and Technique, University Hassan II Mohammedia, Mohammedia, Morocco: AMMAIH Youssef ; Bouchaib Hartiti ; Abderrazak Lfakir; Abderraouf Ridah 2) LMOPS Laboratory, Supelec, University of Lorraine, Metz, France: Philippe Thevenin 3) Laboratoire LCOMS, Université de Lorraine, France : Meryane Siadat

14:00 **COPPER VARIATION IN CU(IN,GA)SE2 SOLAR CELLS WITH INDIUM SULPHIDE BUFFER LAYER** **A.P3 12**
S. Spiering1, S. Paetel1, F. Kessler1, M. Igalson2, H. AbdelMaksoud2
1Zentrum f?r Sonnenenergie- und Wasserstoff-Forschung Baden-W?rttemberg, Industriestrasse 6, 70565 Stuttgart, Germany;2 Warsaw University of Technology, Faculty of Physics, Koszykowa 75, 00-662 Warszawa

14:00 **In-situ monitoring of CuInSe2 thin films growth by light scattering** **A.P3 13**
Yoann ROBIN, Matthieu MORET, Sandra RUFFENACH, Roger-Louis AULOMBARD, Olivier BRIOT
Université Montpellier 2, Laboratoire Charles Coulomb UMR 5221, F-34095, Montpellier, France ; CNRS, Laboratoire Charles Coulomb UMR 5221, F-34095, Montpellier, France ; CNRS, Laboratoire Charles Coulomb UMR 5221, F-34095, Montpellier, France ; Université Montpellier 2, Laboratoire Charles Coulomb UMR 5221, F-34095, Montpellier, France ; CNRS, Laboratoire Charles Coulomb UMR 5221, F-34095, Montpellier, France ;

14:00 **Impact of degradation on optical and electrical properties of sputtered aluminun doped zinc oxide** **A.P3 14**
L. Arzel (a), M. Theelen (b,c) , E. Leornard (a) , N. Barreau (a)
(a) Institut des Matériaux Jean Rouxel (IMN), UMR 6502 CNRS,2 rue de la Houssinière BP 32229, 44322 Nantes cedex 3, France (b) TNO, Thin Film Technology, The Netherlands (c) Delft University of Technology, Photovoltaic Materials and Devices, The Netherlands

14:00 **Composition-dependent nanostructure of Cu(In,Ga)Se2 powders and thin films** **A.P3 15**
C. S. Schnohr1, H. Kämmer1, T. Steinbach1, M. Gnauck1, C. A. Kaufmann2, C. Stephan2, S. Schorr2,3
1Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena, Max-Wien-Platz 1, 07743 Jena, Germany; 2Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Germany; 3Institut für Geologische Wissenschaften, Freie Universität Berlin, Malteserstr. 74-100, 12249 Berlin, Germany

14:00 **Cu-(Sb,Bi)-(S,Se) based absorber materials for thin-film solar cells: first-principles description** **A.P3 16**
Mukesh Kumar<1,2>, Clas Persson <2,3>
<1> Environmental Remediation Materials Unit, National Institute for Materials Science, Ibaraki 305-0044, Japan <2> Department of Materials Science and Engineering, Royal Institute of Technology, SE-100 44 Stockholm, Sweden <3> Department of Physics, University of Oslo, NO-0316 Oslo, Norway

14:00 **Effects of pH and Annealing Temperature on ZnS(O,OH) Thin Films deposited by Solution-based CFM Method for Solar Cells** **A.P3 17**
Ho Young Jun , Seon Young Park, Si Ok Ryu*
School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan 712-749, South Korea

14:00 **Understanding the effect of sputtering process during i-ZnO deposition on cell efficiency of CIGS solar cells** **A.P3 18**
1,2K.-N. Lee, 1Eun-A Ok, 1,2Yu-Seung Son,1 Jong-Keuk Park, 1Won-Mok Kim, 1Young-Joon Baik, 1Doh-Kwon Lee, 2Donghwan Kim, 1Jeung-hyun Jeong
1Korea Institute of Science and Technology, Seoul 136-791, Korea; 2Department of Materials Science and Engineering, Korea University, Seoul 136-701, Korea

14:00 **Zinc Tin Oxide (ZTO) thin films deposited via r.f. sputtering as alternative buffer layer for Cu(In,Ga)Se2 solar cells** **A.P3 19**
R.A. Mereu*, A. Le Donne, P. Garattini, S. Binetti, M. Acciarri*
Dept. of Materials Science and Solar Energy Research Center (MIB-SOLAR), University of Milano Bicocca, Via Cozzi 55, 20125 Milan, Italy * Corresponding author. Tel.: +390264485134. E-mail address: raluca.mereu@unimib.it; maurizio.acciarri@unimib.it

14:00 **Application of transparent p-type conductive BaCuSeF films to the back contacts of CdS/CdTe solar cells** **A.P3 20**
K. Yamamoto 1, H. Sakakima 1, R. Hayashi 2, Y. Ogawa 2, and T. Okamoto 2, T. Wada 1
1 Department of Materials Chemistry Ryukoku University; 2 Ksarazu National College of Technology

14:00 **First-principles study of the electronic structure of CuSbS2 and related photovoltaic semiconductors** **A.P3 21**
T. MAEDA, T. WADA
Department of Materials Chemistry, Ryukoku University

14:00 **Ohmic back contact with Copper Sulfide (Cu2S) for CdTe solar cells** **A.P3 22**
J. Türck, S. Siol, A. Klein, W. Jaegermann
Technische Universität Darmstadt, Materials and Earth Sciences, Surface Science

14:00 **Inversed Cu2ZnSn(S,Se)4/CdS/ZnO Nanorods Thin Film Solar Cells** **A.P3 23**
Li-Wen Hsueh, Yu-Tung Yin and Liang-Yih Chen*
Department of Chemical Engineering, National Taiwan University of Science and Technology

14:00 **Fabrication of efficient compound solar cell back contacts by a new developed deposition process** **A.P3 24**
M. Winkler 1), C. Gretener 2), L. Kranz 2), J. D. König 1), J. Perrenoud 2), S. Buecheler 2), A. N. Tiwari 2), K. Bartholomé 1)
1) Fraunhofer Institute for Physical Measurement Techniques IPM, Thermoelectric Systems, Heidenhofstraße 8, D-79110 Freiburg, Germany, markus.winkler@ipm.fraunhofer.de, Phone: +49 / 761 8857 611, Fax: +49 / 761 8857 224 2) Empa - Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Thin Films and Photovoltaics, Überlandstrasse 129, CH-8600 Dübendorf, Switzerland,

14:00 **On the metastable properties of GaCu-related defect and defect complexes in wide bandgap chalopirytes from first principles** **A.P3 25**
Marek Maciaszek (1), Xavier Rocquefelte (2), Pawel Zabierowski (1)
1 - Faculty of Physics, Warsaw University of Technology, Koszykowa 75, 00-662 Warszawa, Poland; 2 - Institut des Materiaux Jean Rouxel, Universite de Nantes, 2 rue de la Houssiniere, Nantes, 44322, BP 32229, Cedex 3, France

14:00 **Defect characteristics and the influence of sodium in Cu(In,Ga)Se2** **A.P3 26**
Christiane Stephan, Christian A. Kaufmann, Dieter Greiner
Helmholtz-Zentrum Berlin für Materialien und Energie

14:00 **Spatially resolved X-ray fluorescence on Cu(In,Ga)Se2 cross sections** **A.P3 27**
Ph. Schöppe1, A. Kusch1, M. Oertel1, C. S. Schnohr1, A. Johannes1, S. Eckner1, M. Burghammer2, U. Reislöhner1, C. Ronning1
1 Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena, Max-Wien-Platz 1, 07743 Jena, Germany; 2 European Synchrotron Radiation Facility, B.P. 220, F-38043 Grenoble Cedex, France

14:00 **The structural properties of CdS deposited by Chemical Bath Deposition and Pulsed DC Magnetron Sputtering** **A.P3 28**
F Lisco, J W Bowers, G Claudio, P.M Kaminski, J M Walls
Centre for Renewable Energy Systems Technology, (CREST), School of Electronic, Electrical and Systems Engineering, Loughborough University, Leicestershire, LE11 3TU, UK

14:00 **Thickness dependent investigation of wedged Cu(In,Ga)Se2 films prepared by physical vapor deposition (PVD) using hard x-ray photoelectron spectroscopy (HAXPES)** **A.P3 29**
W. Calvet1, B. Ümsür1, A. Steigert1, B. Höpfner1, I. Lauermann1, K. Prietzel1, C. Kaufmann1, T. Unold1 and M. Lux-Steiner1,2
1 Helmholtz-Zentrum-Berlin, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany 2 Freie Universität Berlin, Department of Physics, Arnimallee 14, D-14195 Berlin, Germany

14:00 **Sprayed ZnO Films for CuInGaSe2 Solar Cells** **A.P3 30**
Kenji YOSHINOa, *, Akiko IDEa, Akiko MOCHIHARAa, Shigeru IKEDAb, Takashi MINEMOTOc
a Department of Applied Physics and Electronic Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, 889-2192 Miyazaki, Japan bResearch Center for Solar Energy Chemistry, Osaka University, 1-1 Yamadaoka Suita Osaka, 565-0871, Japan cDepartment of Electrical and Electronic Engineering, Ritsumeikan University, 1-1-1 Nojihigashi Kusatsu Shiga 525-8577, Japan

14:00 **Electrochemically-deposited ZnO and Al-doped ZnO transparent layers with variable conductivity for use in thin film photovoltaics** **A.P3 31**
Michael Richter[1],[2]; Stefan Edinger[1]; Rachmat Adhi Wibowo[1]; Raad Hamid[3]; Johann Summhammer[2]; Theodoros Dimopoulos[1]
[1] AIT Austrian Institute of Technology, Energy Department, Photovoltaic Systems, Giefinggasse 2, 1210, Vienna, Austria [2] Atominstitut of the Austrian Universities, Stadionallee 2, 1020, Vienna, Austria [3] AIT Austrian Institute of Technology, Mobility Department, Electric Drive Technologies, Giefinggasse 2, 1210, Vienna, Austria

14:00 **Study and optimization of a low power plasma reactor for synthesis of doped and undoped Zinc oxide as the window layer in CIGS solar cells** **A.P3 32**
Alexandre MA (1,2,3), Frédérique DONSANTI (2), Frédéric ROUSSEAU (1), Daniel MORVAN (1)
(1) Institut de Recherche de Chimie Paris (IRCP), Equipe 2PM (Procédés, Plasmas, Microsystèmes) – UMR 8247, Chimie ParisTech-CNRS – 11 Rue Pierre et Marie Curie, 75005 Paris, France; (2) Institut de Recherche et Développement sur l'Energie Photovoltaïque (IRDEP) –UMR 7174, EDF-CNRS-Chimie ParisTech – 6 Quai Watier, 78401 Chatou, France; (3) Agence de l'Environnement et de la Maîtrise de l'Énergie (ADEME)– 20 avenue du Grésillé, BP 90406, 49004 Angers Cedex 01, France

14:00 **Numerical Reactive Diffusion Modeling of SEL-RTP Chalcopyrite Absorber Layer Formation** **A.P3 33**
André Zweschke[1], Peter J. Wellmann[1]
1) Department of Materials Science and Engineering, Chair of Materials for Electronics and Energy Technology, Friedrich-Alexander-University Erlangen-Nürnberg, Martensstr. 7, 91058 Erlangen, Germany

14:00 **Dependence on morphology of electrical properties and optical anisotropy in nanostructured CuIn5S8 thin films** **A.P3 34**
F. Chaffar Akkari, A. Sinaoui, S. Chenot, B. Gallas, M. Kanzari
Laboratoire de Photovoltaique et Materiaux Semiconducteur, ecole nationale d'ingenieurs de Tunis, Tunisia CNRS, UMR 7588, INSP, F-75005, Paris, France Sorbonne Universites, UPMC Univ Paris 06, UMR 7588, INSP, F-75005, Paris, France

14:00 **Atomic scale investigation of the p-n Junction in CIGS based solar cells: correlation between cell efficiency and impurities.** **A.P3 35**
A. Koprek*, O. Cojocaru-Mirédin*, C. Freysoldt*, R. Wuerz,** and D. Raabe*
* Max-Planck-Institut für Eisenforschung, Max-Planck-Straße 1, 40237 Düsseldorf, Germany.; ** Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Industriestrasse 6, 70565 Stuttgart, Germany.

14:00 **Spatial characterization of CIGS solar cells inhomogeneities** **A.P3 36**
L. Lombez; G. El Hajje; A. Delamarre; D. Ory; M. Paire; J-F. Guillemoles
Institute of Research and Development on Photovoltaic Energy, 6 quai Watier,78401 Chatou, France

14:00 **Electrical characterization of CdS films, annealed in reducing, neutral and oxidizing ambients of H2, N2, and air** **A.P3 37**
Aleksandr Graf, Natalia Maticiuc, Aleksei Gavrilov, Jaan Hiie
Tallinn University of Technology

14:00 **Reactive sputtering process control for one-step industrial CIGS absorber deposition** **A.P3 38**
Ivan Fernandez-Martinez 1, Victor Bellido-Gonzalez, Fernando Briones 1,3, Benoit Daniel 2, Joseph Brindley 2, Ambiorn Wennberg 1, Dermot Monaghan 2.
1. Nano4Energy SL Spain ; 2. Gencoa Ltd, ; 3. IMM-CSIC, Spain

14:00 **Reference-free quantification of in-depth matrix gradients in chalcopyrite solar cell absorbers** **A.P3 39**
C. Streeck 1, B. Pollakowski 1, C. Herzog 2, J. Lubeck 1, M. Gerlach 1, P. Hönicke 1, R. Unterumsberger 1, S. Brunken 3, C. A. Kaufmann 3, A.Weber 3, B. Beckhoff 1, B. Kanngießer 2, H.-W. Schock 3 und R. Mainz 3
1 Physikalisch-Technische Bundesanstalt, Abbestr.2-12, 10587 Berlin, Germany 2 Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany 3 Helmholtz-Zentrum Berlin, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

14:00 **Influence of CdS, ZnSnO and Zn(O,S) buffer layers on the metastable behavior of CIGS solar cells** **A.P3 40**
Sabrina Novalin, Tobias Törndahl, Adam Hultqvist, Uwe Zimmermann, Johan Lindahl, Marika Edoff, Marcus Rennhofer, Johann Summhammer
Austrian Institute of Technology; Ångström Solar Center, Uppsala University; Ångström Solar Center, Uppsala University; Ångström Solar Center, Uppsala University; Ångström Solar Center, Uppsala University; Ångström Solar Center, Uppsala University; Austrian Institute of Technology; Vienna University of Technology

14:00 **Characterization of RTP-SEL Kesterite Thin Films by spatially resolved Cathodoluminescence** **A.P3 41**
Ulrike Künecke, Christina Hetzner, Stefan Möckel, Peter Wellmann
Materials Department 6, University of Erlangen-Nürnberg, Martensstr. 7, D-91058 Erlangen, Germany.

14:00 **Comparative study about AZO thin films deposited by Pulsed Electron Deposition and RF-sputtering as TCO for solar cells based on CIGS deposited by PED** **A.P3 42**
F. Pattini, F. Annoni, M. Bronzoni, F. Bissoli, J. P. Garcia, E. Gilioli, S. Rampino
IMEM-CNR, Institute of Materials for Electronics and Magnetism, Parco Area delle Scienze 37/A, 43124 - Parma (Italy)

14:00 **Ab initio thermodynamics for CZTS formation and annealing** **A.P3 43**
Adam J. Jackson, Jarvist M. Frost, Aron Walsh
Centre for Sustainable Chemical Technologies and Department of Chemistry, University of Bath

14:00 **In-situ optical emission spectroscopy for a better control of hybrid sputtering/evaporation Cu(In,Ga)Se2 deposition process** **A.P3 44**
J. Posada(1), M. Jubault(1), A. Bousquet(2), E. Tomasella(2), D. Lincot(1)
1 - Institut de Recherche et Développement sur l'Energie Photovoltaïque (IRDEP - EDF R&D - UMR CNRS 7174) 6 Quai Watier, 78401 Chatou, France; 2 - Institut de Chimie de Clermont - Ferrand (ICCF - UMR CNRS 6296 – Université Blaise Pascal)

14:00 **Controlled in-situ sulfur incorporation with different Cu(In,Ga)Se2 absorber pre-treatments for graded Cu(In,Ga)(S,Se)2 solar cell applications** **A.P3 45**
Björn J. Müller (1,3), Markus Mock (2,3), Christian Zimmermann (3,4), Veronika Haug (3), Siegmund Zweigart (3), Ulrich Herr (1)
(1) Department of Micro- and Nanomaterials, University of Ulm, D-89081, Germany; (2) Technical University of Darmstadt, D-64289, Germany; (3) Corporate Research, Robert Bosch GmbH, D-70839 Gerlingen, Germany; (4) Karlsruhe Institute of Technology, D-76131 Karlsruhe, Germany

14:00 **Efficient Thermal and Chemical Treatments on CdS Growth to Improve Solar Cells Efficiency** **A.P3 46**
J.M. Flores Marquez1, M.L. Albor Aguilera1, Y. Matsumoto Kuwabara2, M.A. Gonzalez Trujillo3
1ESFM-IPN, Depto. Fisica, U.P.A.L.M., Zacatenco, Mexico D.F. 07738, Mexico; 2CINVESTAV-SEES-IPN, Av. IPN 2508, Zacatenco, Mexico D.F. 07360, Mexico; 3ESCOM – IPN, Formacion Basica, U.P.A.L.M., Zacatenco, Mexico D.F., 07738, Mexico.

Novel materials and devices : fd

08:45 **Thermal Evaporation of Tin Sulfide for Solar Cell Applications with Potential for Industrial Scale-Up** — A.O9 1
V. Steinmann [1], H.H. Park [2], R. Jaramillo [1], K. Hartman [1], L. Sun [2], R.E. Brandt [1], R. Chakraborty [1], R.G. Gordon [2], T. Buonassisi [1]
[1] Massachusetts Institute of Technology, Cambridge, MA 02139, USA [2] Harvard University, Cambridge, MA 02138, USA

09:00 **Cu(In,Ga)Se2 mesa diodes for the study of edge recombination** — A.O9 2
Myriam Paire (1), Cyril Jean (1), Laurent Lombez (1), Stéphane Collin (2), Jean-Luc Pelouard (2), Jean-François Guillemoles (1), Daniel Lincot (1)
(1) - Institute of research and development on photovoltaic energy, 6 quai Watier, 78401 Chatou, France (2) - Laboratoire de photonique et de nanostructures, Route de Nozay, 91460 Marcoussis, France

09:15 **Improved Solar Cells with Tin Monosulfide Absorber** — A.O9 3
P. Sinsermsuksakul, L. Sun, S. Woon Lee, H. H. Park, S. Bok Kim, C. Yang and R. G. Gordon
Harvard University, Cambridge, Massachusetts

09:45 **coffee break**

Joint session with Symp. H - Metrology in solar cells and highlights of EMRP projects : Burkhard Beckhoff, Daniel Abou-Ras

10:15 **Diffusion of buffer-layer and substrate impurities in solar-grade CIGSe and epitaxial CISe layers** — H17 1
N. Stolwijk1, J. Bastek1, R. Wuerz2, S. Sadewasser3
1Universitaet Muenster, Institut fuer Materialphysik, 48149 Muenster, 2Zentrum fuer Sonnenenergie- und Wasserstoff-Forschung Baden-Wuerttemberg, 70565 Stuttgart, 3International Iberian Nanotechnology Laboratory, 4715-330 Braga, Portugal

10:30 **The role of Ga content in CIGSe efficiency : an atom probe study** — AH 1
Mohit Raghuwanshi, Emmanuel Cadel, Sébastien Duguay, Philippe Pareige, Nicolas Barreau
Groupe de Physique des Matériaux (GPM), University of Rouen; University of Nantes

10:45 **Strain measurements in CuInSe2 absorber layers by several diffraction techniques** — AH 2
Norbert Schäfer1, Daniel Abou-Ras1, Manuela Klaus1, Christoph Genzel1, Julien Marquart1,2, Susan Schorr1,2, Thorsten Rissom1, Angus Wilkinson3, Tobias Schulli4
1. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany; 2. Freie Universitaet Berlin, Institute of Geological Sciences, Malteserstr. 74-100, 12249 Berlin, Germany; 3. Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, U.K.; 4. European Synchrotron Radiation Facility, BP 220, Grenoble Cedex, France

11:00 **EMRP - Thin Films - Project: Traceable Raman mappings on solar cell thin-film materials** — AH 3
S. Zakel, S. Wundrack, B. Güttler, R. Stosch
Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

11:15 **EMRP - Thin Films - Project: Reference-free quantification of in-depth matrix gradients – the uncertainty dependencies of the effective solid angle of detection** — AH 4
C. Streeck 1, C. Herzog 2, B. Kanngießer 2, B. Beckhoff 1
1 Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin 2 Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin

11:30 **Lunch break**

Characterization techniques : fd

14:00 **Characterization of Electronic Structure of CZTSSe Absorber Layers and CdS/CZTSSe Interfaces by PES/IPES** — A.O10 1
N. Terada 1, 2, S. Yoshimoto 1, K. Chochi 1, T. Fukuyama 1, M. Mitsunaga 1, H. Tampo 2, H. Shibata 2, K. Matsubara 2, S. Niki 2, N. Sakai 3, T. Kato 3 and H. Sugimoto 3
1. Kagoshima University, Kagoshima, Kagoshima 890-0065, Japan; 2. Advanced Industrial Science and Technology, Tsukuba, Ibaraki 305-8568; 3. Showa Shell Sekiyu K. K., Atsugi, Kanagawa 243-0206, Japan

14:30 **Investigation of Cu-poor and Cu-rich Cu(In, Ga)Se2/CdS interfaces using hard X-ray photoelectron spectroscopy (HAX-PES)** — A.O10 2
B. Ümsür1, W. Calvet1, B. Höpfner1, A. Steigert1, I. Lauermann1, K. Prietzel1, H. Allaf Navirian1, C. Kaufmann1, T. Unold1 and M. Lux-Steiner1,2
1 Helmholtz-Zentrum-Berlin, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany; 2 Freie Universität Berlin, Department of Physics, Arnimallee 14, D-14195 Berlin, Germany

14:45 **Characterization of local electronic properties of CIGS thin film solar cells by VEELS and in-line holography** — A.O10 3
Debora Keller 1,2, Stephan Buecheler 1, Patrick Reinhard 1, Fabian Pianezzi 1, Darius Pohl 3, Alexander Surrey 3,4, Bernd Rellinghaus 3, Rolf Erni 2, Ayodhya N. Tiwari 1
1 Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland; 2 Electron Microscopy Center, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland; 3 Institute for Metallic Materials, IFW Dresden, P.O. Box 270116, D-01171 Dresden, Germany; 4 Institute for Solid State Physics, TU Dresden, Zellescher Weg 16, D-01062 Dresden, Germany;

15:00 **Chemistry of structural defects in Cu(In,Ga)Se2 by means of STEM** — A.O10 4
E. Simsek, Q.M. Ramasse, R. Mainz, A. Weber, D. Abou-Ras, P.A. van Aken
E. Simsek; P.A. van Aken Max Planck Institute for Intelligent Systems, Heisenbergstr. 3, 70569 Stuttgart, Germany; Q. M. Ramasse SuperSTEM, STFC Daresbury Laboratories, Keckwick Lane, Warrington, WA4 4AD, United Kingdom; R. Mainz; A. Weber; D. Abou-Ras Helmholtz Zentrum Berlin, Hahn Meitner Platz 1, 14109 Berlin, Germany

15:15 **3-Dimensional Microstructural and Crystallographic Characterization of CdTe Absorber Layers from CdTe/CdS Solar Cells Grown in Substrate Configuration.** — A.O10 5
Guillaume Stechmann, Stefan Zaefferer, Peter Konijnenberg, Dierk Raabe, Christina Gretener, Lukas Kranz, Julian Perrenoud, Stephan Buecheler, Ayodhya Tiwari
Max Planck Institute for Iron Research, Düsseldorf, Germany; Max Planck Institute for Iron Research, Düsseldorf, Germany; Max Planck Institute for Iron Research, Düsseldorf, Germany; Max Planck Institute for Iron Research, Düsseldorf, Germany; Laboratory for Thin Films and Photovoltaics, Empa, Duebendorf, Switzerland; Laboratory for Thin Films and Photovoltaics, Empa, Duebendorf, Switzerland
Laboratory for Thin Films and Photovoltaics, Empa, Duebendorf, Switzerland
Laboratory for Thin Films and Photovoltaics, Empa, Duebendorf, Switzerland

15:30 **coffee break**

Poster 4: Electrical characterization, device studies and modelling, novel materials, and ultra-thin absorbers : Alessandro Romeo, Daniel Abou-Ras

16:00 **Electrical modeling of CuIn1-xGaxSe2 based solar cells with ZnO1-ySy buffer layer.** — A.P4 1
S. Ouédraogo, F. Zougmoré, J.M. Ndjaka
S. Ouédraogo; F. Zougmoré: Laboratoire de Matériaux et Environnement (LA.M.E), UFR-SEA, Université de Ouagadougou, 03 B.P. 7021 Ouaga 03, Burkina Faso.
S.Ouédraogo, J.M. Ndjaka: Département de Physique, Faculté des sciences, Université de Yaoundé I, B.P.812 Yaoundé, Cameroun

16:00 **An optimization-based approach to enhancing carriers collection in superstrate Cu(In,Ga)Se2 solar cells** **A.P4 2**
Idris Bouchama1,2,*, Kamal Djessas3,4, Ammar Messous2, Abdessalam Bouloufa2
1 Département d'Electronique, Faculté de Technologie, Université de Msila, Algeria. 2 Laboratoire d'Electrochimie et Matériaux, Université Ferhat Abbas de Sétif, Algeria. 3 Laboratoire Procédés Matériaux et Energie Solaire PROMES-CNRS, Rambla de la Thermodynamique, Technosud, 66100 Perpignan, France. 4 Université de Perpignan Via Domitia, 52 avenue Paul Alduy, 68860, Perpignan Cedex9, France. *Bouchama.idris@yahoo.fr

16:00 **Fabrication and characterization of photosensitive n-ZnO/p-InSe heterojunctions** **A.P4 3**
Z. Kudrynskyi (1), V. Khomyak (2), V. Katerynchuk (1), M. Kovalyuk (1), V. Netyaga (1), B. Kushnir (1)
(1) Frantsevich Institute for Problems of Materials Science, National Academy of Sciences of Ukraine, Chernivtsi Department, str. I. Vilde 5, 58001 Chernivtsi, Ukraine, (e-mail: kudrynskyi [at] gmail.com); (2) Yuriy Fedkovich Chernivtsi National University, str. Kotsubinsky 2, 58012 Chernivtsi, Ukraine

16:00 **Modulated Photo current experiments – what is the correct data treatment?** **A.P4 4**
Jennifer Luckas, Christophe Longeaud, Tobias Bertram, Valérie Depredurand,Susanne Siebentritt
Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg ; Laboratoire de Génie Electrique de Paris (CNRS UMR 8507), Supelec, Universités Paris VI et XI, Plateau de Moulon, 11 rue Joliot Curie, 91190 Gif sur Yvette, France ; Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg ; Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg ; Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg ;

16:00 **RF sputtered single phase CuSbS thin films** **A.P4 5**
F. Al-Saab, C.C. Huang, J. Yao, B.E. Hayden, D.W. Hewak
University of Southampton, Southampton, SO17 1BJ, United Kingdom

16:00 **Electroreflectance Spectroscopy on Cu(In,Ga)Se2 Solar Cells with Different Buffer Layers** **A.P4 6**
Oliver Kiowski1, Wolfram Witte1, Andreas Bauer1, David Sperber2, Christoph Krämmer2, Michael Hetterich2 and Michael Powalla1,2
1 Zentrum fuer Sonnenenergie- und Wasserstoff-Forschung Baden-Wuerttemberg (ZSW), Stuttgart, Germany. 2 Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany.

16:00 **The impact of Na and K on the degradation of CIGS solar cells** **A.P4 7**
Mirjam Theelen, Nicolas Barreau, Henk Steijvers, Zeger Vroon, Miro Zeman
Mirjam Theelen 1,2,3; Nicolas Barreau 4; Henk Steijvers 1; Zeger Vroon 1; Miro Zeman 2; 1 TNO, dept. Thin Film Technology - De Rondom 1, 5612 AP, Eindhoven, The Netherlands 2 Delft University of Technology, Photovoltaic Materials and Devices, Mekelweg 4, 2628 CD Delft, The Netherlands 3 Materials innovation institute (M2i), Mekelweg 2 2628 CD DELFT, The Netherlands 4 Institut des Matériaux Jean Rouxel (IMN)—UMR 6502, Université de Nantes, CNRS, 2 rue de la Houssinière B.P. 32229, 44322 Nantes Cedex 3 France

16:00 **Metastable behavior of defects in n-CdTe/p-ZnTe photodiodes grown by MBE method** **A.P4 8**
E. Zielony1, E. Płaczek-Popko1, A. Racino1, K. Paradowska1, Z. Gumienny1, S. Chusnutdionow2 and G. Karczewski2
1 Institute of Physics, Wroclaw University of Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wroclaw, Poland 2 Institute of Physics, Polish Academy of Sciences, al. Lotnikow 32/46, 02-668 Warsaw, Poland

16:00 **Deep-level transient spectroscopy measurements on Mo/CIGS/Metal Schottky diodes** **A.P4 9**
L. Van Puyvelde 1, J. Lauwaert 1, F. Pianezzi 2, A.N. Tiwari 2 and H. Vrielinck 1
1 Department of Solid State Sciences, Ghent University, Krijgslaan 281-S1, 9000 Gent Belgium 2 Laboratory for Thin Films and Photovoltaics, Swiss Federal Laboratories for Materials Science and Technology (Empa), Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland

16:00 **Behavior of Deep Level Defects on Voltage-Induced Stress of CIGS Solar Cells** **A.P4 10**
D.W. Lee, S.E. Cho, J.H. Jeong, and H.Y. Cho
Department of Physics, Dongguk University, Solar Cell Center, KIST, Seoul, Korea

16:00 **Temperature dependent current transport properties in Cu2ZnSnS4 solar cells** **A.P4 11**
Mati Danilson (1), Erkki Kask (2), Nikhil Pokharel (1,3), Maarja Grossberg (1), Jüri Krustok (1,2)
(1) Department of Materials Science, Tallinn University of Technology, Estonia; (2) Department of Physics, Tallinn University of Technology, Estonia; (3) Department of Natural Sciences (Physics), Kathmandu University,Nepal

16:00 **An approach using point contact back reflector for efficiency improvements in submicron Cu(In,Ga)Se2-based solar cells** **A.P4 12**
E. Leonard, L. Arzel, N. Barreau
Institut des Matériaux Jean Rouxel (IMN)-UMR 6502, Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322 Nantes Cedex 3, France

16:00 **Backwall superstrate configuration for ultrathin Cu(In,Ga)Se2 solar cells** **A.P4 13**
J. K. Larsen, H. Simchi, P. Xin, K. Kim, W. N. Shafarman
Institute of Energy Conversion, University of Delaware, 451 Wyoming Road, Newark, Delaware 19716, USA, current address: Uppsala University, Engineering Sciences, Solid State Electronics, Box 534, SE-751 21, Uppsala Sweden; Institute of Energy Conversion, University of Delaware, 451 Wyoming Road, Newark, Delaware 19716, USA;Institute of Energy Conversion, University of Delaware, 451 Wyoming Road, Newark, Delaware 19716, USA;Institute of Energy Conversion, University of Delaware, 451 Wyoming Road, Newark, Delaware 19716, USA;Institute of Energy Conversion, University of Delaware, 451 Wyoming Road, Newark, Delaware 19716, USA

16:00 **Photomodulated Photoelectron Spectroscopy of Ag/CuInSe2 to Probe Atomic Charge State** **A.P4 14**
Aydogan, Pinar, Johnson, Nicole, Rockett, Angus, Suzer, Sefik
Aydogan, Pinar: Department of Chemistry, Bilkent University, 06800 Ankara. Turkey; Johnson, Nicole: Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign; Rockett, Angus: Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign; Suzer, Sefik: Department of Chemistry, Bilkent University, 06800 Ankara. Turkey

16:00 **Investigation of defect-related recombination process around pn-interface of CIGS solar cells by impedance spectroscopy** **A.P4 15**
H. Sakakura, Y. Kondo, S. Aihara, M. Itagaki, M. Sugiyama
Research Institute for Science and Technology / Faculty of Science & Technology, Tokyo University of Science, 2641 Yamazaki, Noda 278-8510, Japan

16:00 **Ultrafast Carrier Dynamics in CdS/Cu(In,Ga)Se2 Grown on Different Substrate Types (Soda lime glass, Borosilicate)** **A.P4 16**
Woo-jung Lee1, Dae-Hyung Cho1, Jae-Hyung Wi1, Won Seok Han1, Yong-Duck Chung1,2, Seonghoon Jung3, Jaehun Park3
1Solar Cell Technology Research Section, Electronics and Telecommunications Research Institute, Daejeon 305-700, Korea; 2Department of Advanced Device Engineering, University of Science and Technology, Daejeon 305-350, Korea; 3fs-THz Laboratory, Pohang Accelerator Laboratory, POSTECH, Pohang 790-784, Korea

16:00 **How post deposition treatment with NaF and KF improves the electronic properties of low temperature grown Cu(In,Ga)Se2 solar cells** **A.P4 17**
Fabian Pianezzi, Patrick Reinhard, Benjamin Bissig, Shiro Nishiwaki, Adrian Chirila, Stephan Buecheler, Ayodhya N. Tiwari
Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland

16:00 **Sulfurization growth mechanism and defect properties of SnS thin films** **A.P4 18**
M. Sugiyama, H. Nagayasu, T. Tsugawa, T. Hiramatsu, K. Hisatomi, S. Aihara
Research Institute for Science and Technology / Faculty of Science & Technology, Tokyo University of Science, 2641 Yamazaki, Noda 278-8510, Japan

16:00 **SnS absorber thin films by co-evaporation: optimization of the growth rate and influence of the annealing** **A.P4 19**
Víctor Robles, Juan Francisco Trigo, Cecilia Guillén, José Herrero
CIEMAT

16:00 **DEGRADATION OF CIGS THIN-FILM SOLAR CELLS DUE TO THE IONIZATION EFFECT OF ELECTRON IRRADIATION** **A.P4 20**
Shirou Kawakita1, Mitsuru Imaizumi1, Shogo Ishizuka2, Shigeru Niki2, Shuichi Okuda3, Hiroaki Kusawake1
1 Japan Aerospace Exploration Agency; 2 National Institute of Advanced Industrial Science and Technology; 3 Osaka Prefecture University

16:00 **Growth and characterization of SnSe2 by selenization of sputtered metallic precursors** **A.P4 21**
P. A. Fernandes (a,b), M. G. Sousa (a), P. M. P. Salomé (c), J. P. Teixeira (a), J. P. Leitão (a) and A. F. da Cunha (a)
(a) I3N and Departamento de Física, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal;(b) Departamento de Física, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida, 431, 4200-072 Porto, Portugal;(c) International Iberian Nanotechnology Laboratory, Av. Mestre José Veiga, 4715-330 Braga, Portugal

16:00 **PVTEAM - Photovoltaic Technology based on Earth Abundant Materials** **A.P4 22**
Aron Walsh (1), Laurence Peter (1), David Fermin (2), Ralph Gottschalg (3), Jake Bowers (3), Michael Walls (3), Ian Forbes (4), David Worseley (5), Trystan Watson (5)
1. University of Bath 2. University of Bristol 3. Loughborough University 4. Northumbria University 5. Swansea University

16:00 **CdS segregation in CZTS solar cells** **A.P4 23**
Dahyun Nam1, Mungunshagai Gansukh1, Dae-Ho Son2, Jun-Hyoung Sim2, Dong-Hwan Jeon2, Byoung-Soo Ko2, Dae-Hwan Kim3, Kee-Jeong Yang2,3, Dae-Kue Hwang2, Jin-Kyu Kang 2,3, Hyeonsik Cheong1
1Department of Physics, Sogang University, 35 Baekbeom-ro, Mapo-gu, Seoul, 121-742, Republic of Korea; 2Advanced Convergence Technology Center, Daegu Gyeongbuk Institute of Science & Technology, 223 Sang-ri, Hyeonpung-myeon, Dalseong-gun, Daegu 711-873, Republic of Korea; 3Energy Research Division, Daegu Gyeongbuk Institute of Science & Technology, 223 Sang-ri, Hyeonpung-myeon, Dalseong-gun, Daegu 711-873, Republic of Korea

16:00 **p-n junction improvements of Cu2ZnSnS4/CdS monograin layer solar cells** **A.P4 24**
M.Kauk-Kuusik1, K.Timmo1, M. Danilson1 M. Altosaar1, K. Ernits2, T.Holopainen2
1 Department of Materials Science, Tallinn University of Technology Ehitajate tee 5, 19086 Tallinn, Estonia; 2 crystalsol GmbH, Tallinn

16:00 **CZTS solar cells with efficiency of 5.7% obtained from binary sulfides co-sputtered precursors** **A.P4 25**
M. Valentini, C. Malerba, A. Mittiga
SAPIENZA – University of Rome, Department of Physics, P.le Aldo Moro 5, 00156 Roma, ITALY; University of Trento, DICAM, via Mesiano 77, 38123, Trento, ITALY; ENEA, Casaccia Research Center, via Anguillarese 301, 00123, Roma, ITALY;

16:00 **N-type conduction in SnS-based thin films** **A.P4 26**
Fan-Yong Ran (1), Zewen Xiao (1), Hidenori Hiramatsu (1,2), Hideo Hosono(1,2), and Toshio Kamiya(1,2*)
(1) Materials and Structures Laboratory, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan; (2) Materials Research Center for Element Strategy, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan.

16:00 **Photovoltaic Performance of a Cd1-xMgxTe/CdS device** **A.P4 27**
Omar S. Martinez1, 2, Eulises Regalado-Pérez1, Erik R. Morales1, 3, Xavier Mathew1
1 Instituto de Energías Renovables, Universidad Nacional Autónoma de México, Temixco, Morelos, 62580, México 2 Centro del Cambio Global y la Sustentabilidad en el Sureste, Villahermosa, Tabasco, 86080, México 3 División Académica de Ingeniería y Arquitectura- Universidad Juárez Autónoma de Tabasco, Cunduacán, Tabasco, 86690, México

16:00 **The Frequency-time-resolved microwave photoconductivity and the Broad band photodielectric spectroscopy are two advanced techniques for research of loss process of charge carriers in semiconductors on examples of CIGS and CdS.** **A.P4 28**
G.F. Novikov
Dr.Sci., Prof., Head of Lab of Photoelectrophysics. The Institute of Problems of Chemical Physics, RAS. Chernogolovka, Moscow region, Russia, 142432. e-mail: ngf@icp.ac.ru; tel./fax: +7 (49652)21842.

16:00 **Crystallographic and optical properties of CuSbS2 and CuSb(S1-xSex)2 solid solution** **A.P4 29**
K. Takei, T. Maeda, T. Wada
Department of Materials Chemistry, Ryukoku University

16:00 **OPTIMIZATION OF FLEXIBLE CIGS SOLAR CELLS/MODULES** **A.P4 30**
N.Severino [1], N.Bednar [1], M.Acciarri [2], N.Adamovic [1]
[1]Institute of Sensor and Actuator Systems, Vienna University of Technology Floragasse 7, A-1040 Vienna, AUSTRIA; [2]Department of Material Science and Solar Energy Research Center, University of Milano Bicocca Via Cozzi 53, 20125 Milan, ITALY

16:00 **Analysis of the back contact properties of Cu(In,Ga)Se2 solar cells employing the thermionic emission model** **A.P4 31**
Nils Neugebohrn, Maria S. Hammer, Janet Neerken, Jürgen Parisi, Ingo Riedel
Laboratory for Chalcogenide Photovoltaics, Energy and Semiconductor Research Laboratory, Department of Physics, University of Oldenburg, 26111 Oldenburg, Germany

16:00 **Impact of Sulphur and Gallium Gradients on the Performance of Thin Film Cu(In,Ga)(Se,S)2 Solar Cells** **A.P4 32**
Tetiana Lavrenko, Thomas Walter
University of Applied Sciences Ulm, Albert-Einstein-Allee 55, 89081 Ulm, Germany; University of Applied Sciences Ulm, Albert-Einstein-Allee 55, 89081 Ulm, Germany.

16:00 **Influence of different Na-Treatments on CIGSe Solar Cells: Experiment and Simulation** **A.P4 33**
Hengameh Allaf Navirian, Stephan Brunken, Dieter Greiner, Volker Hoffmann, Varvara Brackmann, Christian Kaufmann, Thomas Unold
Helmholtz-Zentrum Berlin für Materialien und Energie Hahn-Meitner-Platz 1 14109 Berlin Germany

16:00 **TiO2 / CuInS2 heterostructures for solar cell applications** **A.P4 34**
Anna Frank1, Angela Wochnik2, Sophia Betzler2, Christina Scheu2
1 Max-Planck-Institut für Eisenforschung, Max-Planck-Straße 1, 40237 Düsseldorf, Germany.; 2 Ludwig-Maximilians-University Munich, Department of Chemistry and Center for NanoScience, Butenandtstraße 5-13, 81377 Munich, Germany.

16:00 **Light-induced doping increase in Cu(In,Ga)Se2-based thin film solar cells** **A.P4 35**
Si Chen, Tobias Jarmar, Sven Södergren, Ulf Malm, Erik Wallin, Olle Lundberg, Sebastian Jander, Ralf Hunger, Lars Stolt
Si Chen; Tobias Jarmar; Sven Södergren; Ulf Malm; Erik Wallin; Olle Lundberg;Lars Stolt; Solibro Research AB, Vallvägen 5, SE-756 51 Uppsala, Sweden Sebastian Jander; Ralf Hunger; Solibro GmbH, Sonnenallee 32-36, 06766 Bitterfeld-Wolfen, Germany

16:00 **Verification of Phototransistor Model for CIGS Solar Cells** **A.P4 36**
Thomas Ott 1, Francillina Schoenberger 1, Thomas Walter 1, Dimitrios Hariskos 2, Oliver Kiowski 2, Oliver Salomon 2 and Raymund Schaeffler 3
1 University of Applied Sciences Ulm, Albert-Einstein-Allee 55, 89081 Ulm, Germany 2 Zentrum fuer Sonnenenergie- und Wasserstoff-Forschung Baden Wuerttemberg, Industriestr. 6, 70565 Stuttgart, Germany 3 Manz CIGS Technology GmbH, Alfred-Leikam-Str.25, 74523 Schw?bisch Hall, Germany

16:00 **Annealing of wet treated CIGSSe solar cells with an indium sulfide buffer** **A.P4 37**
Christian Hönes (a), Susanne Siebentritt (a)
(a) Université du Luxembourg, Luxembourg

16:00 **Characterization of defects in CuInGaSe2 thin films by the charge-based Deep Level Transient Spectroscopy** **A.P4 38**
Yan Xu1,3, Cédric Renaud2, Abdeljalil Lahmar3, Thien-Phap Nguyen1*
1Institut des Matériaux Jean Rouxel, 2 Rue de la Houssinière 44322 Nantes, France. ; 2LAPLACE, University of Toulouse, 118 Route de Narbonne 31062 Toulouse Cedex 9 France. ; 3LTN, 18 Bd Gaston Defferre 85000 La Roche-sur-Yon, France

16:00 **Transient surface photovoltage on the nanometer scale on Cu(In,Ga)Se2 solar cells** **A.P4 39**
Nicoleta Nicoara (1), Pedro Salome (1,2), Humberto Rodriguez Alvarez (1), Viktor Fjällström (2), Bart Vermang (2), Marika Edoff (2), Sascha Sadewasser (1)
(1) International Iberian Nanotechnology Laboratory, Av. Mestre José Veiga s/n, 4715-330 Braga, Portugal; (2) Ångström Solar Center, Uppsala University, P.O. Box 534, 751 21 Uppsala, Sweden

16:00 **Characterization of the properties of CdS/CdTe solar cells grown by close space vapour sublimation using resistive elements** **A.P4 40**
O. Martínez1, J.L. Plaza2, S. Rubio2, P. Iñiguez1, J. Jiménez1, E. Diéguez2
1 GdS-Optronlab, Dpto. Física Materia Condensada, Univ. de Valladolid, Edificio I+D, 47011 Valladolid (Spain). 2 Laboratorio de Crecimiento de Cristales, Departamento de Física de Materiales, Facultad de Ciencias, Universidad Autónoma de Madrid.

16:00 **Influence post-deposition selenium supply on CIGSe-based solar cell properties** **A.P4 41**
1- N. Barreau, L. Arzel, T. Lepetit, T. Painchaud, F. Couzinié-Devy 2- J. Kessler 3- P. Zabierowski, M. Igalson, A. Urbaniak, K. Macielak
1- Institut des Mat?riaux Jean Rouxel, (IMN-UMR6502), CNRS, Universit? de Nantes, France 2- 44solar, France 3- Warsaw University of Technology, Faculty of Physics, Warsaw, Poland

16:00 **Influence of the n-side doping on space charge profiles in CIGS-based solar cells** **A.P4 42**
Marek Maciaszek, Pawel Zabierowski
Faculty of Physics, Warsaw University of Technology, Koszykowa 75, 00-662 Warszawa, Poland

16:00 **Enhanced solar efficiency by Au@SiO2 core shell Nanoparticles in Non-Vacuum Process CISSe Solar Cell** **A.P4 43**
Yi-Ju Chen, Yu-Ting Yen, Chen Chia-Wei, Manikandan Arumugam, and Yu-Lun Chueh*
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan

16:00 **CdTe/CdS/ZnO:Al solar cells in substrate and superstrate configuration: thin film and device characterization** **A.P4 44**
C. Rotaru 1, V. Palekis 2, S. Vatavu 1,2, C. Ferekides 2, P. Petrenko 3, P. Gasin and M. Rusu 1,4
1 Faculty of Physics and Engineering, Moldova State University, 60 A. Mateevici str., Chisinau, MD-2009, MOLDOVA; 2 Department of Electrical Engineering, University of South Florida, 4202 East Fowler Ave, Tampa, FL 33620, USA; 3 Institute of Applied Physics of the, Academy of Sciences of Moldova, 5 Academiei str., Chisinau, MD-2028, MOLDOVA; 4 Institut für Heterogene Materialsysteme, Helmholtz-Zentrum Berlin für Materialien und Energie, Lise-Meitner-Campus, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

16:00 **Numerical Analysis of Photovoltaic Solar Cells based on low cost thin film sulfides** **A.P4 45**
HANIF ULLAH1,2 , SHAFI ULLAH1,2 and BERNABÉ MARÍ SOUCASE 1
1) Departament de Física Aplicada-IDF, Universitat Politècnica de València, València, Spain. 2) Electrical Engineering Department, Federal Urdu University Islamabad Pakistan.

16:00 **Thermal stability of CZTS-monograins in photovoltaic devices, investigation of diffusion processes in the photoactive region** **A.P4 46**
Lukas Plessing; Stöger Pollach; Christian Bühlmeyer; Christoph Waldauf; Axel Neisser;
crystalsol GmbH; TU Wien; crystalsol GmbH; crystalsol GmbH; crystalsol GmbH;

16:00 **On the thin films based solar cell main recombination mechanisms characterization with the temperature-dependent open circuit voltage measurements technique** **A.P4 47**
Djicknoum Diouf, A. Darga
UFR Sciences Appliqu?es et Technologie Universit? Gaston Berger Saint-Louis SENEGAL; Sorbonne Universit?s, UPMC Univ Paris 06, UMR 8507, Laboratoire de G?nie Electrique de Paris, F-91190 Gif sur Yvette, France

16:00 **Effects of air-annealing on photovoltaic performance of sputtered In2S3/CIGSe device** **A.P4 48**
Wei-Hao Ho, Chia-Hao Hsu, Tzu-Ying Lin and Chih-Huang Lai
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan

16:00 **Device performance improvement in low-temperature grown CuInGaSe2 solar cells by Ag alloying** **A.P4 49**
Kihwan Kim (a), Joo Wan Park (a,b), Jin Su Yu (a), Jun-sik Cho (a), Jihye Gwak (a), Sejin Ahn (a), Ara Cho (a), Seung Kyu Ahn (a), Young-joo Eo (a), Joo Hyung Park (a), Keeshik Shin (a), Kyung Hoon Yoon (a), Hi-Deok Lee (b), and Jae Ho Yun (a)
(a)Photovoltaic Laboratory, Korea Institute of Energy Research, Daejeon 305-343, Republic of Korea ; (b) (b)Department of Electronic Engineering, Chungnam National University, Daejeon 305-764, Republic of Korea

30 May 2014

Ab-initio calculations + point defects : fd

08:30 **Intrinsic point defects of CuInSe2 and CuGaSe2 revisited** **A.O11 1**
Karsten Albe, Johan Pohl
Technische Universität Darmstadt, FB Material- und Geowissenschaften, FG Materialmodellierung, Jovanka-Bontschits-Str. 2, D-64287 Germany

09:00 **Direct Observation of Band Tails – a Comparative Study of Chalcopyrite and Kesterite Absorbers** **A.O11 2**
J.H. Alsmeier, I. Repins, L. Mansfield, L. Korte, R.G. Wilks, R. Noufi and M. Bär
Solar Energy Research, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; National Renewable Energy Laboratory, Golden, CO, USA;National Renewable Energy Laboratory, Golden, CO, USA; Solar Energy Research, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; Solar Energy Research, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany;National Renewable Energy Laboratory, Golden, CO, USA;Energy Research, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany and Institut für Physik und Chemie, Brandenburgische Technische Universität Cottbus-Senftenberg, Cottbus, Germany

09:15 **First-principles study of point defects in Cu(In,Ga)Se2** **A.O11 3**
Jonas Bekaert, Rolando Saniz, Bart Partoens
University of Antwerp, Department of Physics, Groenenborgerlaan 171, 2020 Antwerp, Belgium

09:30 **Defect levels in Cu(In,Ga)Se2 polycrystalline layers by sub-bandgap photo-induced current transient spectroscopy** **A.O11 4**
K. Macielak 1, M. Igalson 1, P. Zabierowski 1, N. Barreau 2, L. Arzel 2
1 Faculty of Physics, Warsaw University of Technology, ul. Koszykowa 75, 00-662 Warszawa, Poland; 2 Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, 44322 Nantes cedex 3, France

09:45 **Metastable defect in CuInSe2 probed by Modulated Photo current experiments above 390 K** **A.O11 5**
Jennifer Luckas, Christophe Longeaud, Tobias Bertram, Thomas Paul Weiss, Valérie Depredurand, Susanne Siebentritt
Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg ; Laboratoire de Génie Electrique de Paris (CNRS UMR 8507), Supelec, Universités Paris VI et XI, Plateau de Moulon, 11 rue Joliot Curie, 91190 Gif sur Yvette, France ; Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg; Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg; Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg; Laboratory of Photovoltaics, University of Luxembourg, 41 Rue de Brill, Luxembourg

10:00 **Coffee break**

Electrical characterization : fd

10:30 **Integration of device characterization into development methodology of CIGS solar cells** **A.O12 1**
A. Bayman
Miasole

11:00 **The Fermi level in CdS buffer layers** **A.O12 2**
A. Fuchs, J. Pohl, W. Witte, D. Hariskos, T. Adler, E. Feldmeier, J. Schaffner, A. Schneikart, S. Siol, J. Türck, K. Albe, W. Jaegermann, A. Klein
A. Fuchs; J. Pohl; T. Adler; E. Feldmeier; J. Schaffner; A. Schneikart; S. Siol; J. Türck; K. Albe; W. Jaegermann; A. Klein: Technische Universität Darmstadt, Institut für Materialwissenschaft, Jovanka-Bontschits-Strasse 2, 64287 Darmstadt, Germany W. Witte; D. Hariskos: Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Industriestraße 6, 70565 Stuttgart, Germany

11:15 **Influence of solution-grown Zn(O,S) buffer layer thickness on the electrical properties of Cu(In,Ga)Se2 solar cells** **A.O12 3**
Wolfram Witte, Oliver Kiowski, Richard Menner, and Dimitrios Hariskos
Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Industriestraße 6, D-70565 Stuttgart, Germany

11:30 **Heat Induced Passivation of CuInSe2 Surfaces: A Strategy to Optimize the Efficiency of Chalcopyrite Thin Film Solar Cells?** **A.O12 4**
Harry Mönig, David Lockhorn, Nabi Aghdassi, Alexander Timmer, Christian A. Kaufmann, Raquel Caballero, Helmut Zacharias, and Harald Fuchs
Physikalisches Institut and Center for Nanotechnology (CeNTech) Universität Münster; Physikalisches Institut and Center for Nanotechnology (CeNTech) Universität Münster; Physikalisches Institut and Center for Nanotechnology (CeNTech) Universität Münster; Physikalisches Institut and Center for Nanotechnology (CeNTech) Universität Münster; Helmholtz-Zentrum Berlin für Materialien und Energie; Departamento de Física Aplicada, Universidad Autónoma de Madrid; Physikalisches Institut and Center for Nanotechnology (CeNTech) Universität Münster; Physikalisches Institut and Center for Nanotechnology (CeNTech) Universität Münster

11:45 **Electrical characterization of Cu(In,Ga)Se2-solar cells by voltage dependent time-resolved photoluminescence** **A.O12 5**
Matthias Maiberg, Conrad Spindler, Roland Scheer
matthias.maiberg@physik.uni-halle.de; conrad.spindler@student.uni-halle.de; roland.scheer@physik.uni-halle.de

12:00 **Lunch break**

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM B

Advanced functional materials for environmental monitoring and applications

Symposium Organizers:

Michele Penza, ENEA Italian National Agency for New Sensing Technologies, Brindisi, Italy

Anita Lloyd Spetz, Linköping University/Oulu University, Linköping, Sweden

Albert Romano-Rodriguez, University of Barcelona, Spain

Yongxiang Li, Shanghai Institute of Ceramics, China

Meyya Meyyappan, NASA, Moffett Field, USA

26 May 2014

08:45 **Welcome Address**

Nanostructured Metal Oxides Chemical Sensors I : Albert Romano-Rodriguez, UB, Barcelona, Spain

09:00 **Nanostructured oxide layers for high temperature gas sensing applications** **B.I 1**
Bilge Saruhan, Azhar A. Haidry, Yakup Gönüllü
German Aerospace Center, German Aerospace Center, University of Cologne

09:30 **X-Ray and Raman Spectroscopy Studies of Vanadium Oxide Thin Films Used as Ammonia Sensors** **B.I 2**
Joni Huotari (1), Wei Cao (2), Robert Bjorklund (3), Yuran Niu (4), Vladimir Pankratov (2), Jyrki Lappalainen (1), Anita Lloyd Spetz (1,3), Marko Huttula (2)
(1) Microelectronics and Materials Physics Laboratories, University of Oulu, P.O. Box 4500, FIN-90014 Oulu, Finland; (2) Department of Physics, University of Oulu, P.O. Box 3000, FIN-90014 Oulu, Finland; (3) Department of Physics, Chemistry and Biology, Linköping University, SE-581 83, Linköping, Sweden; (4) MAX-lab, Lund University, SE-221 00 Lund, Sweden

09:45 **Sensitive detection (PPT) and fast recovery of gases using SnO2 nano-pillars grown on ITO** **B.I 3**
A. Goldoni #, L. D'Arsiè ^, G. Di Santo #, M. Caputo #, L. Sangaletti *, V. Alijani #
Elettra - Sincrotrone Trieste, Trieste, Italy ^ Queens' College, Cambridge, UK * Università Cattolica del Sacro Cuore, Brescia, Italy

10:00 **Coffee Break**

Nanostructured Metal Oxides Chemical Sensors II : Albert Romano-Rodriguez, UB, Barcelona, Spain

10:30 **Hydrogen sensing properties of metal-decorated tungsten oxide nanowires grown by aerosol assisted CVD on polymeric microhotplates** **B.II 1**
F.E. Annanouch, J.L. Ramírez, M. Camara*, D. Briand* and E. Llobet
MINOS-EMaS, Universitat Rovira i Virgili, Tarragona, Spain *EPFL, Samlab, Neuchatel, Switzerland

11:00 **Ozone sensing with p-type copper aluminum oxide thin films** **B.II 2**
C. Baratto*, Raj Kumar*, G. Faglia*, G. Sberveglieri*, K.Vojisavljevic**, B.Malic**
* CNR-INO SENSOR Lab. and University of Brescia, Dept. of Information Engineering, Via Valotti, 9 25133 Brescia, Italy ** Electronic Ceramics Department, Jozef Stefan Institute Jamova 39, SI-1000, Ljubljana, Slovenia

11:15 **Investigation of UV Effects on Gas Sensing Properties of 1D ZnO Hetero-Nanostructures** **B.II 3**
Sadullah OZTURK1, Arif KOSEMEN2, Necmettin KILINC1, Zafer Ziya OZTURK1.3*
1Gebze Institute of Technology, Department of Physics, Kocaeli 41400, Turkey 2Mus Alparslan University, Department of Physics, 49100 Mus, Turkey 3TUBITAK Marmara Research Center, Institute of Material Science, Kocaeli, Turkey

11:30 **Suitability of doped SnO2 nanofibers for exhaust gas sensor** **B.II 4**
E. Xuriguera (1), O. Monereo (1), C. López-Gándara (2), N. Bonet (2), F. M. Ramos (2), A. Cirera (1)
(1) MIND-IN2UB, Electronics Department, Universitat de Barcelona, Martí i Franquès 1, 08028, Barcelona, Spain; (2) FAE-Francisco Albero S.A.U., Rafael Barradas 19, 08908, L'Hospitalet de Llobregat, Spain

11:45 **Single Nanowire Gas Sensor for Nitrogen Oxide Detection** **B.II 5**
T. Sauerwald 1; M. Afshar 2; Marius Rodner 1; E. Preiß 2; D. Feili 2; H. Seidel 2; A. Schütze 1
1 Saarland University /Lab for Measurement Technology, Saarbrücken/GER; 2 Saarland University / Lab of Micromechanics, Microfluidics/Microactuators, Saarbrücken/GER

12:00 **Metal-oxides nanowires for gas sensing applications** **B.II 6**
C.Fabrega, J.R.Morante
IREC, Catalonian Institute for Energy Research, Jardíns de les Dones de Negre,1. San Adrià del Besòs. 08930. Spain

12:30 **Lunch**

Graphene Chemical Sensors I : Anita Lloyd Spetz, Linkoping University (Sweden) and Oulu University (Finland)

14:00 **Graphene sensor development and characterisation techniques for investigating sensor mechanisms** **B.III 1**
Ruth Pearce 1, Anita Lloyd Spetz 2, Jens Eriksson 2 and Rositza Yakimova 2
1) The National Physical Laboratory, U.K. 2) Linkoping University, Sweden

14:30 **Graphene quantum resistive sensors for environmental monitoring** **B.III 2**
J. F. Feller*, M. Castro, T. T. Tung
Smart Plastics Group, European University of Brittany (UEB), LIMATB-UBS, Lorient, France

14:45 **Graphene based materials with tailored properties for vapor sensing** **B.III 3**
Giuseppe Valerio Bianco, Maria Michela Giangregorio, Maria Losurdo, Pio Capezzuto, Giovanni Bruno
Institute of Inorganic Methodologies and of Plasmas, IMIP-CNR, Department of Chemistry, University of Bari, via Orabona 4, 70126 Bari, Italy

15:00 **Optical gas sensing properties of graphene oxide coupled with noble metal nanoparticles monolayer** **B.III 4**
A. Martucci (1), M. Cittadini (1), M. Bersani (1), F. Perrozzi (2), L. Ottaviano (2), W. Wlodarski (3)
(1) Università di Padova, Dipartimento di Ingegneria Industriale, Italy; (2) Università dell'Aquila, Dipartimento di Scienze Fisiche e Chimiche, Italy; (3) RMIT University Melbourne, School of Electrical and Computer Engineering, Australia

15:15 **Influence of environment on graphene grown on SiC** **B.III 5**
G. Reza Yazdi1, F. Akhtar1, T. Iakimov1,3, I. Ivanov1, A. Zakharov2, R. Yakimova1,3
1-Dep of Physics, Chemistry and Biology, Linköping University, SE-58183 Linköping, Sweden 2-Maxlab, Lund University, S-22100 Lund, Sweden 3-Graphensic AB, Linkoping, Sweden

15:30 **Coffee Break**

Poster Session 1: Materials for Environmental Sensing : Michele Penza, ENEA, Brindisi, Italy

16:00 **Electrical and optical properties of ZnO nanorods** **B.PI 1**
R.Yatskiv, J. Grym, M.Verde, M. Hamplova, P. Gladkov
Institute of Photonics and Electronics, Academy of Sciences CR, v.v.i.

16:00 **Contribution to the study of zinc oxide (ZnO) for biological applications** **B.PI 2**
Zeggai Oussama , Ould-Abbes Ammaria , Zeggai Hichem
Research unit of Materials and Renewable energies (URMER), University Abou Bakr Belkaïd, B.P. 119, Tlemcen, Algeria

16:00 **Characterization of individual CuO nanowires for conductometric gas sensing** **B.PI 3**
F.Shao1, F.Hernández-Ramírez1 2, J.D. Prades2, N. López3, C.Fàbrega1, T. Andreu1, J.R.Morante1 2
1 Catalonia Institute for Energy Research (IREC), E-08930 Sant Adrià del Besòs, Spain; 2 Department of Electronics, University of Barcelona, E-08028 Barcelona, Spain; 3 Institute of Chemical Research of Catalonia, ICIQ, Av. Països Catalans 16, 43007 Tarragona, Spain

16:00 **Electrochemical modification of nanostructured metal-oxides by gold nanoparticles for the development of NO2 gas sensors** **B.PI 4**
Elena Dilonardo 1, Michele Penza 2, Marco Alvisi 2, Domenico Suriano 2, Gennaro Cassano 2, Francesco Palmisano 1, Luisa Torsi 1, Nicola Cioffi 1
1 Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Campus Universitario, via Orabona 4, 70126 Bari, Italy 2 ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic DevelopmentTechnical Unit for Materials Technologies - Brindisi Research Center, PO Box 51 Br4; I-72100 Brindisi -Italy

16:00 **Chitosan-based films and hydrogels as advanced optical sensor materials for determination of biologically active compounds** **B.PI 5**
I. Veselova, N. Borzenkova, O. Vashkinskaya, T. Shekhovtsova, A. Sidorov, A. Grigoryeva, E. Goodilin
Lomonosov Moscow State University, Moscow, Russia

16:00 **Electrosynthetized functional ZnO nanomaterials for sensing applications** **B.PI 6**
M.C. Sportelli1, D. Hoetger2, R.A. Picca1, K. Manoli1, C. Kranz2, B. Mizaikoff2, L. Torsi1, N. Cioffi1
1 Chemistry Department, Univ. degli Studi Bari Aldo Moro, Italy 2 Institute of Anal. and Bioanal. Chemistry, University of Ulm, Germany

16:00 **Enhancing H2S sensitivity and selectivity with CuO decorated SnO2 nanowires** **B.PI 7**
F. Shao a b, M.W.G. Hoffmann a b f, J.D. Prades b, R. Zamani a c, J. Arbiol c d, J.R. Morante a b, E. Varechkinae, M. Rumyantseva e, A. Gaskov e, I. Giebelhaus f, T. Fischer f, S. Mathur f, F. Hernández-Ramírez a b
a Catalonia Institute for Energy Research (IREC), Barcelona, Spain; b Department of Electronics, University of Barcelona, Barcelona, Spain; c Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Campus de la UAB, Bellaterra, Spain; d Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain; e Chemistry Department, Moscow State University, Moscow, Russia; f Institute of Inorganic Chemistry, University of Cologne,Cologne, Germany

16:00 **Functionalized carbon nanotubes-based gas sensors for VOC detection: investigation on different transduction modes and interfering gases.** **B.PI 8**
Amadou NDIAYE1,2, Michele Penza3, Jérôme BRUNET1,2, Marco Alvisi3, Alain PAULY1,2, Christelle VARENNE1,2
1Clermont Université, Université Blaise Pascal, Institut Pascal, BP 10448, F-63000 Clermont-Ferrand, France 2 CNRS, UMR 6602, Institut Pascal, F-63171 Aubière, France 3 ENEA Technical Unit of Technologies for Materials, Brindisi Research Center, I-72100 Brindisi, Italy,

16:00 **Gas microsensor arrays based on Au- and Pt-nanoparticle-functionalized tungsten oxide nanostructures synthesized via localized AACVD** **B.PI 9**
S. Vallejos, F. Annanouch, E. Llobet, E. Figueras, C. Canè, I. Gràcia
Instituto de Microelectrónica de Barcelona (IMB-CNM), CSIC, Barcelona, Spain; MINOS-EMaS, Department d'Enginyeria Electrónica, Universitat Rovira i Virigili, Tarragona, Spain

16:00 **Gas sensing properties of nanostructured ZnO films obtained by atomic layer deposition on porous anodic alumina templates** **B.PI 10**
R. Calavia, S. Roso, R. Vázquez, I. M. Szilagyi* and E. Llobet
MINOS-EMaS, Universitat Rovira i Virgili, Tarragona, Spain *Budapest University of Technology and Economics, Department of Inorganic and Analytical Chemistry, Hungary

16:00 **Gas sensing properties of ZnO nanowires grown via vapor-liquid-solid method over sapphire substrates** **B.PI 11**
S. Roso, F. Guell*, E. Llobet
MINOS-EMaS, Universitat Rovira i Virgili, Tarragona, Spain *Departament d'Electronica, Universitat de Barcelona, Barcelona, Spain

16:00 **Gold nanoparticle thin film sensors for formaldehyde detection** **B.PI 12**
Umut Cindemir, Zareh Topalian, Raul Calavia, Eduard Llobet, Claes-Göran Granqvist, Radu Ionescu
Uppsala University, Uppsala, Sweden. Rovira i Virgili University, Tarragona, Spain

16:00 **Graphene decorated high-selective ZnO CO2 gas sensor** **B.PI 13**
Xu Yong, Hu Xue Feng, Wang Rui , Li Tao，Qin Wei Wei, Xu Meigui, and Wei Zhang*
State Key Laboratory of Material-oriented Chemical Engineering and School of Chemical Engineering, Nanjing Tech University, Nanjing, Jiangsu 210009, PR China

16:00 **Hybrid polymer nanocomposite for gaseous analyte detection** **B.PI 14**
Gita Sakale, Maris Knite, Igors Klemenoks, Egons Skadins, Santa Stepina
Riga Technical University, Institute of Technical Physics

16:00 **Localized growth of SnO2 nanowires for environmental monitoring** **B.PI 15**
J. Sama 1, S. Barth 2, J.D. Prades 1, O. Casals 1, I. Gracia 3, C. Cané 3, A. Romano-Rodríguez 1
1 MIND-IN2UB-Dept. Electronics, Universitat de Barcelona (UB), Martí i Franquès 1, 08028, Barcelona, Spain; 2 Institute of Materials Chemistry, TU Wien, Getreidemarkt 9/165, A-1060 Vienna, Austria; 3 Institut de Microelectrònica de Barcelona, IMB-CNM-CSIC, 08193 Bellaterra, Spain

16:00 **Preparation and Carbon Dioxide Uptake Capacity of N-doped Porous Materials Derived from Direct Carbonization of Zeolitic Imidazolate Framework** **B.PI 16**
Yongde Xia,1 Fenghua Bai,1,2 Binling Chen,1 Yanqiu Zhu1
1 College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter EX4 4QF, United Kingdom 2 School of Chemistry and Chemical Engineering, Inner Mongolia University, Hohhot 010021, Inner Mongolia, People's Republic of China

16:00 **N2O interaction with Pdn nanoparticles (n = 1-6). A Theoretical study** **B.PI 17**
V. H. Uc, J. C. Gonzalez, E. Poulain, O. Olvera-Neria, V. Bertin
Area de Fisica Atomica y Molecular Aplicada, Universidad Autonoma Metropolitana de Azcapotzalco. Av. San Pablo 180, Edificio HP. Col. Reynosa-Tamaulipas, Mexico D.F., C.P. 02200, Mexico. Departamento de Quimica, Universidad Autonoma Metropolitana de Iztapalapa. San Rafael Atlixco 186. Edificio R-216, Col. Vicentina. Mexico D.F., C.P. 09340, Mexico.

16:00 **Nanostructured polymers decorated with Cu(I) salts as novel active materials for ethylene detection** **B.PI 18**
Fabrizio Caprioli, Paolo Di Lorenzo, Domenico Palumbo, Iole Venditti, Ilaria Fratoddi, Maria Vittoria Russo, Luigi Quercia
ENEA Centro Ricerche Casaccia; ENEA Centro Ricerche Casaccia; ENEA Centro Ricerche Casaccia; Dipartimento di Chimica Università La Sapienza di Roma; Dipartimento di Chimica Università La Sapienza di Roma; Dipartimento di Chimica Università La Sapienza di Roma; ENEA Centro Ricerche Casaccia

16:00 **Perovskite materials for oxygen gas sensors integrated on silicon on insulator membranes** **B.PI 19**
C.Fabrega 1, A. M. Saranya 1, A. Morata 1, A. De Luca 2, S. Zeeshan 3 A. Tarancón 1, F. Udrea 2-3, J.R.Morante 1
1. IREC, Catalonian Institute for Energy Research, Jardíns de les Dones de Negre,1. San Adrià del Besòs. 08930. Spain; 2. Cambridge University; 3. CMOS sensor

16:00 **Phase and Temperature Effects on NH3 and NO2 sensing of Cx:WO3** **B.PI 20**
M. Govender1,2, B. W. Mwakikunga1, A. K. Prasad3, S. Umapathy4, S. Sil4, A. J. G. Machatine2, H. W. Kunert2, S. Mathur5, T. Singh5, Y. Gönüllü5, R. Müller5, E. Manikandan6
1DST/CSIR National Centre for Nano-Structured Materials. CSIR. P. O Box 395, Pretoria, 0001, South Africa, 2Department of Physics, University of Pretoria, Pretoria, 0002, South Africa; 3Surface and Nanoscience Division, IGCAR, Kalpakkam, 603102, India; 4Department of Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore, 560012, India; 5Department für Chemie, Lehrstuhl für Anorganische und Materialchemie, Universität zu Köln, Greinstraße 6, D-50939 Köln, Germany; 6Department of Physics, B.S. Abdur Rahman University, Chennai-600048, India

16:00 **Porous Nickel Oxide Sensor for Formaldehyde Detection** **B.PI 21**
Umut Cindemir, Zareh Topalian, Lars Österlund, Claes-Göran Granqvist, Gunnar Niklasson.
Uppsala University

16:00 **Silicon and graphene micro/nano-levers studied by laser photo-acoustic detection** **B.PI 22**
Z. Zelinger, P. Janda
J. Heyrovský Institute of Physical Chemistry AS CR, v.v.i., Dolejškova 3, 182 23 Prague 8 Czech Republic

16:00 **Single-wall carbon nanotube chemiresistor gas sensors to detect ammonia concentrations in the environment: towards ppt detection limit of [NH3] and water selectivity.** **B.PI 23**
Federica Rigoni(ab), Silvia Tognolini(ab), Patrizia Borghetti(bc), Giovanni Drera(ab), Stefania Pagliara(ab), Andrea Goldoni(d), Luigi Sangaletti(ab)
(a)Interdisciplinary Laboratories for Advanced Materials Physics (I-LAMP), via dei Musei 41, Brescia, Italy; (b)Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, via dei Musei 41, Brescia, Italy; (c)Centro de Fisica de Materiales CSIC/UPV-EHU-Materials Physics Center, E-20018 San Sebastian, Spain; (d)Elettra Sincrotrone Trieste S.C.p.A., s.s.14 Km. 163.5, 34149, Trieste, Italy

16:00 **SnO2/V2O5 composite gas sensing material: synthesis and BTEX sensing properties** **B.PI 24**
Nana Qian, Liping Gao, Feihu Zhang, Jun He, Nan Qin, Jiaqiang Xu
Shanghai university，China

16:00 **Sol-gel synthesis of calcium nanomaterials for conservation of paper documents** **B.PI 25**
O. Darčanova, A. Begansksienė, A. Kareiva
Department of Inorganic Chemistry, Vilnius University, Naugarduko 24, LT-03225 Vilnius, Lithuania

16:00 **Stark effect in GaNAsBi/GaAs quantum wells operating at 1.55 μm** **B.PI 26**
C. Bilel*, M. M. Habchi, A. Rebey, and B. El Jani
University of Monastir, Faculty of Sciences Unité de Recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5019 Monastir, Tunisia E-mail: * chakroun_bilel01@yahoo.fr

16:00 **Stress-modulated piezoelectric property in ZnO nanogenerator** **B.PI 27**
Qin Wei Wei, Wang Rui, Gao Zhi Qiang, Li Tao, Hu Xue Feng□Xu Meigui, Huang Shengming, Liang Qi, and Wei Zhang,*
a State Key Laboratory of Material-oriented Chemical Engineering and School of Chemical Engineering, Nanjing Tech University, Nanjing, Jiangsu 210009, PR China b School of Physical Science, Hefei University of Technology, Hefei, Anhui 230009, PR China

16:00 **Signal processing of vapour sensors based on Blue butterfly wings** **B.PI 28**
Gábor Piszter (a); Krisztián Kertész (a); Zofia Vértesy (a); Zsolt Bálint (b); László Péter Biró (a)
(a) Institute for Technical Physics and Materials Science, Research Centre for Natural Sciences, H-1525 Budapest, PO Box 49, Hungary, http://www.nano-technology.hu/; (b) Hungarian Natural History Museum, Baross utca 13, H-1088 Budapest, Hungary

16:00 **Tailoring the morphological and electrical properties of thin films of tungsten oxide nanoparticles embedded in polyaniline matrix by MAPLE technique** **B.PI 29**
M. Filipescu, A. Palla-Papavlu, A. Matei, B. Mitu, V. Ion, F. Stokker-Cheregi, M. Dinescu
Department of Lasers, National Institute for Laser Plasma and Radiation Physics, 077125 Magurele, Romania

16:00 **Tetra-tert-butyl Metallophthalocyanines (ttb-MPc) as sensitive materials of QCM-based sensors for aromatic hydrocarbons detection at room temperature** **B.PI 30**
Abhishek KUMAR(1,2), Jérôme BRUNET(1,2), Amadou NDIAYE(1,2), Alain PAULY(1,2), Michele PENZA(3), Christelle VARENNE(1,2), Marco ALVISI(3)
1. Clermont Université, Université Blaise Pascal, Institut Pascal, BP 10448, F-63000 Clermont-Ferrand, France 2. CNRS, UMR 6602, Institut Pascal, F-63171 Aubière, France 3. ENEA, Brindisi Technical Unit of Technologies for Materials, PO Box 51-Br4, I-72100 Brindisi, Italy

16:00 **The N2O activation by the Rh5 cluster. The key rol of the spin multiplicity and geometrical factors** **B.PI 31**
Oscar Olvera-Neria, Virineya Bertin, Enrique Poulain
1 Area de Fisica Atomica Molecular Aplicada (FAMA), CBI, Universidad Autonoma Metropolitana-Azcapotzalco, Av. San Pablo 180, Col. Reynosa Tamaulipas, Mexico, D. F. 02200, Mexico. 2 Departamento de Quimica, Universidad Autonoma Metropolitana-Iztapalapa, San Rafael Atlixco 186, Col. Vicentina, Mexico, D. F. 09340, Mexico.

16:00 **Tuning self-assembled plasmonic nanoparticle arrays for SERS measurements** **B.PI 32**
Oral Ualibek, Ruggero Verre, Ehsan Razvani, Brendan Bulfin, Karsten Fleischer, Igor V. Shvets
Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), School of Physics, Trinity College Dublin, Dublin 2 , Ireland; Department of Applied Physics, Chalmers University of Technology, Goteborg, Sweden; Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), School of Chemistry, Trinity College Dublin, Dublin 2 , Ireland; School of Physics, Trinity College Dublin, Dublin 2 , Ireland

16:00 **Core-shell structured heterojunction nanofibers via electrospinning and atomic layer deposition to isolate electron and hole in photocatalysis** **B.PI 33**
Fatma Kayaci,a,b Sesha Vempati,*a Cagla Ozgit-Akgun,a,b Necmi Biyikli,a,b and Tamer Uyar*a,b
a UNAM-National Nanotechnology Research Center, Bilkent University, Ankara, 06800, Turkey b Institute of Materials Science & Nanotechnology, Bilkent University, Ankara, 06800, Turkey

16:00 **High Quantum Efficiency Photocathode for Water Reduction** **B.PI 34**
Thomas J. Macdonald(a), Soundarrajan Chandrasekaran(b), Nicolas H. Voelcker(b)*, Thomas Nann(a)*
(a) Ian Wark Research Institute, University of South Australia Mawson Lakes, Adelaide SA 5095, Australia; (b) Mawson Institute, University of South Australia Mawson Lakes, Adelaide SA 5095, Australia

16:00 **Highly effective removal of heavy metals using NaX zeolithe : Kinetics and equilibrium studies** **B.PI 35**
Aoudia Hanane
engineering process

16:00 **Highly Efficient Multifunctional Recyclable Nanocomposite Adsorbent for Water Cleaning** **B.PI 36**
K. F. KAM, J. K. YUAN
The Hong Kong Polytechnic University

16:00 **Multifunctional materials based on tungstate phases: correlation between photocatalytic and luminescence properties** **B.PI 37**
A.Taoufyq, F.Guinneton , J-C. Valmalette, A. Benlhachemi, B. Bakiz, A. Lyoussi, G. Nolibe, J.R. Gavarri
Institut Matériaux Microélectronique et Nanosciences de Provence, IM2NP, UMR CNRS 7334, Université de Toulon, BP 20132, 83957, La Garde Cedex, France. Institut Matériaux Microélectronique et Nanosciences de Provence, IM2NP, UMR CNRS 7334, Université de Toulon, BP 20132, 83957, La Garde Cedex, France. Institut Matériaux Microélectronique et Nanosciences de Provence, IM2NP, UMR CNRS 7334, Université de Toulon, BP 20132, 83957, La Garde Cedex, France. Laboratoire Matériaux et Environnement LME, Faculté des Sciences, Université Ibn Zohr, BP 8106, Cité Dakhla, Agadir, Maroc. Laboratoire Matériaux et Environnement LME, Faculté des Sciences, Université Ibn Zohr, BP 8106, Cité Dakhla, Agadir, Maroc. Département d'Études des Réacteurs, Laboratoire Dosimétrie Capteurs Instrumentation, CEA, 13108, Cadarache, France. Société CESIGMA-signals & systems, 1576 Chemin de La Planquette, 83130, La Garde, France. Institut Matériaux Microélectronique et Nanosciences de Provence, IM2NP, UMR CNRS 7334, Université de Toulon, BP 20132, 83957, La Garde Cedex, France.

16:00 **p-CuFe2O4 photocathode for photocatalytic hydrogen production** **B.PI 38**
Hyun Kim, Bee Lyong Yang
School of Advanced Materials and System Engineering, Kumoh National Institute of Technology

16:00 **The highly activity of Rh6 nanoparticles in the dissociation of N2O.** **B.PI 39**
Héctor Francisco-Rodríguez1, Julio Cesar Gonzalez-Torres2, Oscar Olvera-Neria2, Virineya Bertin1 and Enrique Poulain2
1Departamento de Química, Universidad Autónoma Metropolitana-Iztapalapa, San Rafael Atlixco 186, Col. Vicentina, México, D. F. 09340, México. 2Área de Física Atómica Molecular Aplicada (FAMA), CBI, Universidad Autónoma Metropolitana-Azcapotzalco, Av. San Pablo 180, Col. Reynosa Tamaulipas, México, D. F. 02200, México.

16:00 **Environmental purification by biomass derived magnetic C/TiO2 nanocomposites.** **B.PI 40**
Ece UNUR.
Department of Chemistry, Bursa Technical University, Osmangazi 16190, Bursa, Turkey

16:00 **Nanoparticulate Au(Ag)-(titanium-oxo-alkoxy) coatings for plasma-catalytic air purification** **B.PI 41**
Zixian JIA, Mounir BEN AMAR, Arlette VEGA, Xavier DUTEN, Andrei KANAEV
LSPM ; Universite Paris-Nord 13, Sorbonne Paris Cite, CNRS, Villetaneuse, France; LPP, Ecole Polytechnique, UPMC, Universite Paris sud 11, CNRS, Palaiseau, France

16:00 **p-CuO/Pt NPs photocathodes in double photoelectrode systems for solar hydrogen generation** **B.PI 42**
Hyun Kim, Bee Lyong Yang
School of Advanced Materials and System Engineering, Kumoh National Institute of Technology

16:00 **Preparation, Characterization and Photocatalytic Applications of TiO2-Sb2S3 Composite** **B.PI 43**
Pragati Thakur, Kirti Shitole
Department of Chemistry, University of Pune, Pune, India

16:00 **Prof., Ph.D.** **B.PI 44**
Jiri Mosinger
Faculty of Science Charles University in Prague, Czech Republic Institute of Inorganic Chemistry, v.v.i, Academy of Sciences of the Czech Republic, Řež 1001

16:00 **Effect of nanoscale free volumes on the gas transport properties in aliphatic epoxy resins** **B.PI 45**
(1), (2) Pushkar N. Patil (1) Riccardo Checchetto (1) Roberto S. Brusa (1) Antonio Miotello
(1) Department of Physics, University of Trento, via Sommarive 14, I-38123, Povo, TN, Italy (2) Institute for Composites and Biomedical Materials, National Research Council, Piazzale Tecchio, 80, I-80125 Napoli, Italy

18:30 **Gathering of Day**

Integration of Nanosensors for Scale-Up : Michele Penza, ENEA, Brindisi, Italy

08:45 **COST Action TD1105 on New Sensing Technologies for Air-Pollution Control and Environmental Sustainability: Overview and Plans** **B.IV 1**
Michele Penza and EuNetAir Consortium (www.cost.eunetair.it)
ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development Technical Unit for Materials Technologies - Brindisi Research Center, PO Box 51 Br4; I-72100 Brindisi, ITALY

09:00 **Zero-power highly specific gas sensors** **B.IV 2**
Martin W. G. Hoffmann (1,2,3), Olga Casals (1), Francisco Hernandez-Ramirez (1,3), Andreas Waag (2), Hao Shen (2), J. Daniel Prades (1)
1) Department of Electronics, University of Barcelona, Barcelona, Spain 2) Institut f?r Halbleitertechnik, Technische Universit?t Braunschweig, Braunschweig, Germany 3) Department of Advanced Materials for Energy Applications, Catalonia Institute for Energy Research (IREC), Barcelona, Spain

09:30 **Metal Oxide Nanowires for CMOS.integrated Smart Gas Sensing Devices** **B.IV 3**
A. Koeck, S. Defregger, E. Kraker, S. Steimnhauer, T. Maier, G.C. Mutinati, K. Rohracher, J. Siegert, F. Schrank, E. Wachmann
Materials Center Leoben, AIT Austrian Institute of Technology, ams AG

09:45 **Low cost integrated gas sensors using Pulsed Laser Deposition techniques and Silicon on Insulator platforms** **B.IV 4**
C.Fabrega 1, A. De Luca 2, S. Zeeshan 3, F. Udrea 2-3 J.R. Morante 1
1. IREC, Catalonian Institute for Energy Research, Jardíns de les Dones de Negre,1. San Adrià del Besòs. 08930. Spain; 2. Cambridge University; 3. CMOS sensor

10:00 **Coffee Break**

Carbon Nanomaterials for Gas Detection : Michele Penza, ENEA, Brindisi, Italy

10:30 **Carbon Nanotube Sensors for Gas and Organic Vapor Detection** **B.V 1**
Jing Li
NASA Ames Research Center

11:00 **Electrophoretic deposition of Au NPs on CNTs for sensitive NO2 detection** **B.V 2**
Elena Dilonardo 1, Michele Penza 2, Marco Alvisi 2, Domenico Suriano 2, Riccardo Rossi 2, Francesco Palmisano 1, Luisa Torsi 1, Nicola Cioffi 1
1 Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Campus Universitario, via Orabona 4, 70126 Bari, Italy. 2 ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development Technical Unit for Materials Technologies - Brindisi Research Center, PO Box 51 Br4; I-72100 Brindisi – Italy.

11:15 **Gas sensing mechanism of carbon nanotube field effect transistors: From single tubes to high-density networks** **B.V 3**
A. K. Boyd, I. Dube, G. Fedorov, M. Paranjape, and P. Barbara
Georgetown University, Washington DC, USA; RRC Kurchatov Institute, Moscow, 123182, Russia

11:30 **Is an isolated, ultra-clean single-walled carbon nanotube sensitive to NO2? An experimental approach.** **B.V 4**
K. Chikkadi, M. Muoth, M. Haluska, C. Roman, C. Hierold
Micro and Nanosystems, ETH Zurich, Switzerland

11:45 **DEFECTS AND SENSING PROPERTIES OF CARBON NANOTUBE-BASED DEVICES** **B.V 5**
S. Baldo, V. Scuderi, L. Tripodi, A. La Magna, S. G. Leonardi, N. Donato, G. Neri, L. Romano, S. Scalese
Istituto per la Microelettronica e Microsistemi, CNR, Catania, VIII Strada 5, 95121 Catania (Italy); Dipartimento di Ingegneria Elettronica, Chimica e Ingegneria Industriale, Università di Messina, Contrada di Dio, Salita Sperone 31, Messina (Italy); Dipartimento di Fisica ed Astronomia, Università di Catania, via S. Sofia, 95125 Catania (Italy);

12:00 **Relevance of pristine and functionalized nanocarbonaceous materials for O3 removal from air: a way for the development of selective NO2 chemosensors** **B.V 6**
Jérôme BRUNET (1,2), Alain PAULY(1,2), Amadou NDIAYE(1,2), Christelle VARENNE(1,2), Abhishek KUMAR(1,2),Marc DUBOIS(3,4)
1. Clermont Université, Université Blaise Pascal, Institut Pascal, BP 10448, F-63000 Clermont-Ferrand, France; 2. CNRS, UMR 6602, Institut Pascal, F-63171 Aubière, France; 3. Clermont Université, Université Blaise Pascal, Institut de Chimie de Clermont-Ferrand, BP 10448, F-63000 Clermont-Ferrand, France; 4. CNRS, UMR 6002, Institut de Chimie de Clermont-Ferrand, F-63177 Aubière, France.

12:30 **Lunch**

Modelling of Sensors and Sensor/Gas Interaction : Albert Romano-Rodriguez, UB, Barcelona, Spain

14:00 **Interaction Mechanisms of Ammonia and Tin Oxide: A Combined Analysis Using Single Nanowire Devices and DFT Calculations** **B.VI 1**
Feng Shao1, Martin W. G. Hoffmann1 2, Joan Daniel Prades2, Joan Ramon Morante1 2, Núria López3, Francisco Hernández-Ramírez1 2
1 Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs, Barcelona, Spain; 2 Department of Electronics, University of Barcelona, Marti i Franquès 1, 08028 Barcelona, Spain; 3 Institute of Chemical Research of Catalonia, ICIQ, Av. Països Catalans 16, 43007 Tarragona, Spain

14:15 **The CO oxidation catalized by small Pd clusters. An alternative mechanism to Langmuir-Hinshelwood** **B.VI 2**
Luz Maria Garcia-Cruz, Julio Cesar Gonzalez Torres, Enrique Poulain, Oscar Olvera-Neria
Area de Fisica Atomica Molecular Aplicada (FAMA), CBI, Universidad Autonoma Metropolitana-Azcapotzalco, Av. San Pablo 180, Col. Reynosa Tamaulipas, Mexico, D. F. 02200, Mexico.

14:30 **Crystal faceting and sensing mechanism in shape controlled oxide nanocrystals: SnO2 and WO3 as case studies** **B.VI 3**
Massimiliano D'Arienzo, Lidia Armelao, Claudio Maria Mari, Riccardo Ruffo, Roberto Scotti, Franca Morazzoni
University of Milano Bicocca

14:45 **First-principles investigation of H2O adsorption on SnO2-TiO2 gas sensors** **B.VI 4**
Konstanze Hahn, Antonio Tricoli, Alfons Baiker
Department of Pysics, University of Cagliari; College of Engineering and Computer Science, Australian National University; Department of Chemistry and Applied Biosciences, ETH Zürich

15:00 **Fermi level pinning at the semiconductor surface and its effect on the adsorption of the gaseous phase components - Density Functional Theory (DFT) study** **B.VI 5**
Pawel Kempisty, Stanislaw Krukowski, Pawel Strąk
Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland

15:15 **First-principles calculation of the change in electrical resistivity of Pd due to H absorption** **B.VI 6**
Felipe Murphy-Armando
Tyndall National Institute, University College Cork, Ireland

15:30 **Coffee Break**

Hybrid and Composite Materials for Bio- and Chemical Sensing : Anita Lloyd-Spetz, Linkoping University (Sweden) and Oulu University (Finland)

16:00 **Ultrasensitive detection of volatile general anesthetics by an innovative OFET platform** **B.VII 1**
Maria Magliulo1, Antonia Mallardi2, Kyriaki Manoli1, Nicola Cioffi1, Gerardo Palazzo1 and Luisa Torsi1
1 Department of Chemistry, University of Bari, Via Orabona, 4, I-70126 Bari, Italy.
2 Istituto per i Processi Chimico-Fisici (IPCF), CNR – Via Orabona, 4, I-70126 Bari, Italy

16:30 **OPTIMIZATION OF NANOSTRUCTURED POLYANILINE COMPOSITES POLYANILINE FOR AMMONIA AND TRIMETHYLAMINE DETECTION** **B.VII 2**
T M?rian1,2, N.Redon1,2, Z. Zujovic3, D. Stanisavljev4, JL Wojkiewicz1,2, M. Gizdavic-Nikolaidis3,4
1 Univ Lille Nord de France, F59000 Lille, France 2Mines-Douai, CE, F-59508 Douai, France 3School of Chemical Sciences, the University of Auckland, Private Bag 92019, Auckland 1142, New Zealand 4 Faculty of Physical Chemistry, Studentski trg 12-16, 11001 Belgrade, University of Belgrade, Serbia

16:45 **CMOS-based capacitance measurements applied in evaluating cell viability and cytotoxicity of nanomaterials** **B.VII 3**
Niina Halonen 1), Timir Datta-Chaudhuri 2)3), Antti Hassinen 4), Somashekar B. Prakash 3)5), Peter Möller 6), Pamela Abshire 3), Elisabeth Smela 2), Sakari Kellokumpu 4) and Anita Lloyd Spetz 1)6)
1) Microelectronics and Materials Physics Laboratories, Department of Electrical Engineering, University of Oulu, P.O. Box 4500, FI-90014 University of Oulu, Finland; 2) Laboratory for MicroTechnologies, Department of Mechanical Engineering, A. James Clark School of Engineering, University of Maryland, College Park, MD 20742, USA; 3) Integrated Biomorphic Information System Laboratory, Department of Electrical & Computer Engineering, A. James Clark School of Engineering, University of Maryland, College Park, MD 20742, USA; 4) Division of Cell Biology, Department of Biochemistry, University of Oulu, P.O. Box 3000, FI-90014 University of Oulu, Finland; 5) Advanced Design Organization, Intel Corporation, Hillsboro, Oregon USA; 6) Division of Applied Sensor Science, Department of Physics, Chemistry and Biology, Linköping University, SE-58183 Linköping, Sweden

17:00 **Silicon Nanowires FETs for Biosensor Applications** **B.VII 4**
Sebastian Pregl, Felix Zoergiebel, Lotta Roemhildt, Larysa Baraban, Walter M. Weber, Thomas Mikolajick, and Gianaurelio Cuniberti
Technische Universität Dresden, Faculty of Mechanical Science and Engineering, Institute for Materials Science, Materials Science and Nanotechnology Team, Hallwachsstrasse 3, 01069 Dresden, Germany

17:15 **Ion-Sensitive Field-Effect-Transistor Glucose Biosensor with Integration of ZnO based-Field-effect-Transistors and ZnO nanorod sensing membrane** **B.VII 5**
Ying-Shuo Chiu, Ching-Ting Lee
Institute of Microelectronics, Department of Electrical Engineering, National Cheng Kung University 701, Tainan, Taiwan, Republic of China

17:30 **AlGaN/GaN based sensors for environmental monitoring** **B.VII 6**
Rob van Schaijk, Peter Offermans
imec/Holst Centre High Tech Campus 31, Eindhoven, the Netherlands

17:45 **Robust Hybrid SiC/GaN/Metal Nanoparticle (NP) hemin-functionalized platforms for NO gas sensing** **B.VII 7**
Maria Losurdo, Tong-Ho Kim, Maria M. Giangregorio, Giovanni Bruno and April S. Brown
1 Institute of Inorganic Methodologies and of Plasmas, IMIP-CNR, via Orabona 4, 70126 Bari, Italy 2 Electrical Computer Engineering Department, Duke University, 27708 Durham, North Carolina, US

18:00 **MICROSTRUCTURED ELECTRODEPOSITED POLYPYRROLE-PHTHALOCYANINE HYBRID MATERIALS FOR HUMIDITY-INSENSITIVE AMMONIA SENSING** **B.VII 8**
M. Bouvet1, T. Sizun1, J.-M. Suisse1, T. Patois2, and B. Lakard2
1: Institut de Chimie Moléculaire de l'Université de Bourgogne, Dijon, FRANCE 2: UTINAM, Besançon, FRANCE

18:30 **Gathering of Day**

Graphene Chemical Sensors II :
Anita Lloyd Spetz, Linkoping University (Sweden) and Oulu University (Finland)

08:45 **Charging the Quantum Capacitance of Graphene with a Single Biological Ion Channel** **B.VIII 1**
Yung Yu Wang?, Ted D. Pham??, Katayoun Zand?, and Peter J. Burke?
?Department of Chemical Engineering and Materials Science, ??Department of Biomedical Engineering, and ?Department of Electrical Engineering and Computer Science, University of California, Irvine, Irvine, California 92697, United States.

09:00 **A Ready-to-Use and Effective Substrate Consisting of Layer-by-Layer Thin Film of Reduced Graphene Oxide and Gold Nanoparticles for Laser-Induced Desorption Ionization Mass Spectrometry** **B.VIII 2**
Di-Yan Wang,1 Tsung-Rong Kuo,1 Chun-Wei Chen,2 Yuh-Lin Wang,1 Cho-Chun Hu,3 Chia-Chun Chen.1,4
1 Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei 10617, Taiwan 2Department of Materials Science and Engineering, National Taiwan University, Taipei 10617, Taiwan 3Department of Applied Science, National Taitung University, Taitung 95002, Taiwan 4 Department of Chemistry, National Taiwan Normal University, Taipei 11677, Taiwan

09:15 **Green synthesis of reduced graphene oxide-silver nanoparticles using environmentally friendly arginine** **B.VIII 3**
Amer Al-Nafiey, Palaniappan Subramanian, Ahmed Addad, Sabine Szunerits, Brigitte Sieber, Rabah Boukherroub
Institut de Recherche Interdisciplinaire (IRI, USR CNRS 3078), Université Lille 1;Unité des Matériaux Et Transformations (UMET, UMR 8207), Université Lille1

09:30 **Gas sensing with epitaxial graphene on silicon carbide: performance tuning for air quality control** **B.VIII 4**
Jens Eriksson1, Donatella Puglisi1, Hossein Fashandi1, Mike Anderson1, Rositza Yakimova1-2, Anita Lloyd Spetz1
1 Department of Physics, Chemistry, and Biology, Linköping University, 58183, Sweden; 2 Graphensic AB, SE-58333 Linköping, Sweden

10:00 **Coffee Break**

Nanomaterials and Nanotechnologies for Environmental Chemical Sensing :
Michele Penza, Action Chair - ENEA, Italy

10:30 **Post-process growth of nanostructures in metal oxides semiconductors for conductometric gas sensors** **B.IX 1**
G.G. Mandayo, J. Gonzalez-Chávarri, I. Castro-Hurtado, E. Castaño
Ceit and Tecnun, Paseo Manuel Lardizabal 15, 20018 San Sebastián, Spain CIC microGUNE, Goiru kalea 9, Polo de Innovación Garaia 20500, Arrasate-Mondragón, Spain.

11:00 **Resistive temperature independent oxygen and NO sensors of BaFe1-xTaxO3-δ produced by aerosol deposition method** **B.IX 2**
Murat Bektas, Dominik Hanft, Daniela Schönauer-Kamin, Thomas Stöcker, Gunter Hagen, Ralf Moos
Department of Functional Materials, University of Bayreuth, 95447 Bayreuth, Germany

11:15 **Gas Measurement System and Silicon Nanowire based Sensor for the Detection of Ammonia** **B.IX 3**
Cindy Schmädicke, Sebastian Pregl, Jan Voigt, Lars D. Renner, Larysa Baraban, Gianaurelio Cuniberti
TU Dresden

11:30 **Diazonium salt-functionalized nanostructures for an organic pollutant sensing by Surface Enhanced Raman Spectroscopy** **B.IX 4**
Inga Tijunelyte a, Stephanie Betelu b , Anne-Caroline Schnepf b, Ioannis Ignatiadis b, Nathalie Lidgi-Guigui a, Erwann Guenin a, Timothée Toury c, Joyce Ibrahim c, Emmanuel Rinnert d, Marc Lamy de la Chapelle a
a Université Paris13, Sorbonne Paris Cité, Laboratoire CSPBAT, CNRS, (UMR7244), 74 rue Marcel Cachin, 93017 Bobigny, France; b BRGM, Direction de l'Eau, Environnement et Ecotechnologies, D3E/SVP, 3 avenue Claude Guillemin - BP 36009, 45060 Orléans, France; c Université de technologie de Troyes, Laboratoire de Nanotechnologie et d'instrumentation Optique, Institut Charles Delaunay, FRE 2848, 12 rue Marie Curie, 10010 Troyes, France; d IFREMER, Service Interfaces et Capteurs, Département Recherches et Développements Technologiques, BP70, 29280 Plouzané, France

11:45 **AACVD of functionalised metal oxides and application in sensing common air pollutants** **B.IX 5**
Mr Francesco Di Maggio, Dr Chris Blackman, Dr James Covington, Dr John Saffell, Mr Alan Tsang
Di Maggio, Blackman, Tsang University College London Christopher Ingold Building (Chemistry Dept) 20 Gordon Street WC1H 0AJ London; Covington School of Engineering, University of Warwick, Coventry, CV4 7AL; Saffell Alphasense 300 Avenue West Skyline 120 Great Notley Essex CM77 7AA

12:00 **Hydrogenated nanostructured TiO2 electrodes for sensing organic compounds in waters under visible light illumination** **B.IX 6**
Shanqing Zhang
Centre for Clean Environment and Energy, Griffith School of Environment, Gold Coast Campus, Griffith University, QLD 4222, Australia

12:30 **Lunch**

Poster Session 2: Technologies for Chemical Sensing Applications :
Michele Penza, ENEA, Brindisi, Italy

14:00 **Selective and simultaneous detection of toxic metal ions using samarium hexacyanoferrate modified diamond nanowire electrode.** **B.PII 1**
Shalini Jayakumar 1, Kamatchi Jothiramalingam Sankaran 1, Chi-Young Lee 1*, Nyan-Hwa Tai 1, and I-Nan Lin 2*
1Department of Material Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan, R.O.C. 2Department of Physics, Tamkang University, New-Taipei, Taiwan, R.O.C.

14:00 **ETHANOL GAS SENSORS CHARACTERISTICS OF Cr DOPED TiO2 THIN FILMS AND THEIR STRUCTURAL, OPTOLECTRONIC PROPERTIES** **B.PII 2**
A. Hajjaji1,2, A. Labidi3, , B. Bessais2, M. Gaidi and M. A. EL Khakani1*
1 Institut National de la Recherche Scientifique, INRS-Énergie, Matériaux et Télécommunications, 1650, Blvd. Lionel-Boulet, Varennes, Québec, Canada J3X 1S2 2Laboratoire de Photovoltaïque, Centre de Recherches et de technologies de l'énergie, Technopôle de Borj-Cedria, Tunisia 3 Unité de Recherche de Physique des Semi-conducteurs et Capteurs, IPEST, BP 51, La Marsa 2070, Tunis, Tunisia

14:00 **Numerical investigation of a new Junctionless-Multigate design for low- cost pH sensing applications** **B.PII 3**
N. Abdelmalek, F. Djeffal, T. Bentrcia and M. Meguellati
LEA, Department of Electronics, University of Batna, Batna 05000, Algeria. E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

14:00 **Colorimetric sensors for the detection of NH2Cl and NCl3 at ppb level in swimming pools** **B.PII 4**
T.-H. Nguyen(a,c), E. Chevallier(a), Cl. Beaubestre(c), C. Rivron(c), Y. Bigay(a), T.-H. Tran-Thi(c)
(a) ETHERA R&D, CEA-Saclay, Bât. 451, F-91191 Gif-sur-Yvette Cedex, France (b) Laboratoire d'Hygiène de la Ville de Paris, 11 rue Georges Eastman, 75013 Paris, France (c) CEA-Saclay, DSM/DRECAM/SPAM/Laboratoire Francis Perrin, URA CEA-CNRS 2453, 91191 Gif-sur-Yvette Cedex, France,

14:00 **Carbon Monoxide Gas Sensing Properties of Ga Doped ZnO Film Grown by Ion Plating with DC Arc Discharge** **B.PII 5**
S. Kishimoto1)2), H. Song,2) J. Nomoto2), H. Makino2), T. Yamamoto2)
1) Department of Mechanical Engineering, Kochi National College of Technology, 2) Materials Design Center, Research Institute, Kochi University of Technology

14:00 **Characterization of dust and ash particles with a micro heater and gas sensitive SiC field effect transistors** **B.PII 6**
Christian Bur, Andreas Schütze, Mike Andersson, Anita Lloyd Spetz
Linköping University / Division of Applied Sensor Science, Saarland University / Lab for Measurement Technology, Linköping University / Division of Applied Sensor Science, Linköping University / Division of Applied Sensor Science

14:00 **Selective and stable metal oxide gas sensors for ppb measurement of O3, NO2 and NOx in ambient air.** **B.PII 7**
Geoff Henshaw, Ayo Afonja, Simon Naisbitt,
Aeroqual Ltd, Auckland, New Zealand

14:00 **Ozone gas sensor based on ZnO nanorods film obtained via hydrothermal method** **B.PII 8**
A. C. Catto, L. F. da Silva, C. A. Escanhoela Jr, V. R. Mastelaro, S. Bernardini, K. Aguir,
Instituto de Física de São Carlos, Universidade de São Paulo, São Carlos, SP, Brazil Instituto de Química, Universidade Estadual Paulista, Araraquara, SP, Brazil CNRS, IM2NP (UMR 7334), Aix-Marseille Université, 13397, Marseille, France

14:00 **Toward an easy-to-use tuberculosis diagnosis tool via the detection of specific markers by photoluminescence** **B.PII 9**
William Bamogo(a), Laurent Mugherli(b), Armelle Novelli-Rousseau(c), Frédéric Mallard(c) and Thu-Hoa Tran-Thi(a)
(a) CNRS, DSM, SPAM, URA CEA-CNRS 2453, 91191 Gif-sur-Yvette Cedex, France; (b) CEA, DSM, SPAM, URA CEA-CNRS 2453, 91191 Gif-sur-Yvette Cedex, France; (c) bioMérieux, 38054 Grenoble Cedex 9, France

14:00 **pH-Responsive Block Copolymer Photonic Sensors** **B.PII 10**
Ho Sun Lim
Electronic Materials and Device Research Center, Korea Electronics Technology Institute

14:00 **Chemiresistive Gas Sensor based on 3D Suspended Conducting Polymer Wires** **B.PII 11**
Won Suk Chang1, Jung Hyun Kim1, Daeho Kim1 3, Seung Kwon Seol1 2
1Nano Hybrid Technology Research Center, Korea Electrotechnology Research Institute (KERI), Changwon 642-120, KOREA;2Electrical Functionality Material Engineering, University of Science and Technology (UST), Changwon 642-120, KOREA;3Energy and Power Conversion Engineering, University of Science and Technology (UST), Changwon 642-120, KOREA

14:00 **Fluorescent and Colorimetric Chemosensor for Carbon Dioxide based on Polydiacetylene** **B.PII 12**
Dayoung Lee, Qingling Xu, Songyi Lee, Xin Zhang
Jean Bouffard; Juyoung Yoon

14:00 **Electrolyte gated ZnO field-effect transistor** **B.PII 13**
Mandeep Singh, Maria Magliulo, Mohammad Yusuf Mulla, Antonella Mallardi, Luisa Torsi and Gerardo Palazzo
Dipartmento di Chimica, Universita degli Studi di Bari “Aldo Moro”, Bari, Italy-70126

14:00 **SENSOR ARRAY FOR INDOOR GASES USING NANOMATERIALS** **B.PII 14**
N-.J. Choi1, H-.K. Lee, S.E. Moon, and W. S. Yang
IT materials & Components Laboratory, Electronics and Telecommunications Research Institute

14:00 **Peculiarity of characteristics 0f graphene humidity sensors** **B.PII 15**
V.M.Aroutionian,H.A.Zakaryan
Master student of Yerevan State University, Republic of Armenia, Yerevan, 0025, 1 Alex Manoogian

14:00 **Luminescent determination of some organic and inorganic compounds incorporated into cellulose host matrix** **B.PII 16**
*Nedilko S.G(1), Revo S.L.(1), Scherbatskii V.P.(1), Nedielko M.S.(2)
(1) Taras Shevchenko National University of Kyiv, 01601, Kyiv, Ukraine; (2) 2 E.O. Paton Electric Welding Institute of NASU, Kyiv, Ukraine

14:00 **Pellet Photonic Sensor : an innovant gas sensor using catalysis and integrated photonics** **B.PII 17**
1) T. Mazingue, M. Lomello-Tafin, M. Passard, L. Goujon, C. Hernandez-Rodriguez, 2) J.-L. Rousset, F. Morfin, 3) G. Maulion, R. D. Kribich, 4) P. Coudray, 5) T. Wood, J. Le Rouzo, F. Flory 6) J.-F. Laithier
1) Université de Savoie, Laboratoire SYMME, BP 80439, 74944 Annecy le Vieux Cedex, France ; 2) Institut de Recherches sur la Catalyse et l’Environnement de Lyon IRCELYON, CNRS-University of Lyon 2 avenue Albert Einstein, F-69626 Villeurbanne Cedex, France ; 3) Université Montpellier II, Institut d’Électronique du Sud – IES, UMR CNRS/UM2 5214, Place Eugène Bataillon, 34095 Montpellier, France ; 4) Kloé SA, Hôtel d’Entreprise du Millénaire, 1068 Rue de la Vieille Poste, 34000 Montpellier, France ; 5) Aix-Marseille Université, Institut Matériaux Microélectronique Nanosciences de Provence – IM2NP, CNRS-UMR 7334, Domaine Universitaire de Saint-Jérôme, Service 231, 13397 Marseille, France ; 6) Comelec SA, Rue de la Paix 129 - CH-2301 La Chaux-de-Fonds, Switzerland

14:00 **Gas sensor self-test using Fourier-based impedance spectroscopy** **B.PII 18**
Marco Schüler, Tilman Sauerwald, Andreas Schütze
Saarland University, Laboratory for Measurement Technology

14:00 **Field effect transistor based on electrodeposited semiconducting nanowire for sensor applications** **B.PII 19**
Camelia FLORICA (a), Elena MATEI (a), Andreea COSTAS(a), Monica ENCULESCU(a), Maria Eugenia Toimil Molares (b), Ionut ENCULESCU (a)
(a) National Institute of Materials Physics, PO Box MG-7, 77125, Magurele-Bucharest, Romania; (b) GSI, Helmholtz Centre, Planck str. 1, D-64291, Darmstadt, Germany

14:00 **Real-time Toluene Monitoring with a Conductometric Sensor** **B.PII 20**
J.-M. Suisse, M. Bouvet, T. Sizun
Institut de Chimie Moléculaire de l’Université de Bourgogne (ICMUB), Université de Bourgogne, UMR CNRS 6302, 9 avenue A. Savary, F-21078 Dijon, France

14:00 **Low-cost, high density sensor networks for air quality monitoring** **B.PII 21**
V. B. Bright, R. L. Jones, O. A. M. Popoola, M. I. Mead, I. Heimann, G. B. Stewart, R. J. North, P. H. Kaye, D. Carruthers, R. P. Baron, J. Saffell
Department of Chemistry, University of Cambridge, Cambridge; Department of Chemistry, University of Cambridge, Cambridge; Department of Chemistry, University of Cambridge, Cambridge; Department of Chemistry, University of Cambridge, Cambridge; Department of Chemistry, University of Cambridge, Cambridge; Department of Chemistry, University of Cambridge, Cambridge; Centre for Transport Studies, Department of Civil and Environmental Engineering, Imperial College, London; Science and Technology Research Institute, University of Hertfordshire, Hatfield, Hertfordshire; Cambridge Environmental Research Consultants, Cambridge; Alphasense Ltd, Sensor Technology House, Essex; Alphasense Ltd, Sensor Technology House, Essex

14:00 **Effect of humidity on NO2 sensing characteristics of aluminum-doped and un-doped SnO2 based sensors** **B.PII 22**
Azhar Ali Haidry, Nora Kind and Bilge Saruhan
German Aerospace Center, Institute of Materilas Research

14:00 **Simulation of manufacturing and operation of transistor and bolometer set.** **B.PII 23**
Mario Eduardo de Barros Gomes e Nunes da Silva, Leandro Tiago Manera
FEEC / UNICAMP

14:00 **Sensing characteristics of highly conductive 50-nm-thcik Ga-doped ZnO films as hydrogen gas sensor** **B.PII 24**
T. Yamamoto1), H. Song1), J. Nomoto1), H. Makino1) and S. Kishimoto1,2)
1)Kochi University of Technology; 2)Kochi National College of Technology

14:00 **Hydrogen Gas Sensor Based on Series Connection of Schottky junction and beta-Ga2O3 / SiC Heterojunction** **B.PII 25**
Shinji Nakagomi, Keigo Yokoyama, Yoshihiro Kokubun
Faculty of Science and Engineering, Ishinomaki Senshu University

14:00 **UV Sensor by Inkjet Printing Technology** **B.PII 26**
Binas V.,1,3 Noshchenko O.,4 Kuscer D.,4 Gagaoudakis E.,1,2 Malic B.,4 Kiriakidis G.1,2
1 Institute of Electronic Structure and Laser (IESL), FORTH, P.O. Box 1527, Vasilika Vouton, GR-70013 Heraklion, Crete, Greece 2 Physics Department, University of Crete, 710 03 Heraklion, Crete, Greece 3 Quantum Complexity & Nanotechnology Center (QCN), Department of Physics, University of Crete, GR – 71003, Heraklion, Greece 4 Jožef Stefan Institute, Jamova cesta 39, SI-1000 Ljubljana, Slovenia

14:00 **Fluorescence detection of oxygen in gas and liquid media by means of ZnO thin films prepared by plasma enhanced chemical vapor deposition** **B.PII 27**
J.R. Sanchez-Valencia, M. Alcaire, P. Romero-Gómez, M. Macías-Montero, F.J. Aparicio, A. Borras, A.R. González-Elipe, A. Barranco
Consejo Superior de Investigaciones Científicas. Instituto de Ciencia de Materiales de Sevilla (CSIC-Universidad de Sevilla). c/Américo Vespucio 49, 41092 Sevilla, Spain.

14:00 **Conductometric gas sensor based on ZnO nanostructures for indoor pollutant detection** **B.PII 28**
J. Gonzalez-Chavarri, I. Castro-Hurtado, G. G. Mandayo, E. Castaño
Ceit and Tecnun, Paseo Manuel Lardizabal 15, 20.018, Donostia, Spain CIC microGUNE, Goiru kalea 9, 20500 Arrasate-Mondragón, Spain.

14:00 **Self-powered ZnO nanorod/CuSCN diode-based UV photodetector with rapid response** **B.PII 29**
Joe Briscoe, Sabina M. Hatch, Steve Dunn
Joe Briscoe, Steve Dunn: Queen Mary University of London, UK; Sabina M. Hatch: University College London, UK

14:00 **Ultralow power gas sensor based on SnO2 selfheated nanowires** **B.PII 30**
Albert Romano-Rodriguez 1, Jordi Sama 1, J. Daniel Prades 1, O. Casals 1, Francisco Hernandez-Ramirez 1 2, Sven Barth 3
1 MIND-IN2UB-Dept. Electronics, Universitat de Barcelona (UB), Martí i Franquès 1, 08028, Barcelona, Spain; 2 Institut de Recerca en Energia de Catalunya (IREC), E-08930 Sant Adrià de Besós, Spain; 3 Institute of Materials Chemistry, TU Wien, Getreidemarkt 9/165, A-1060 Vienna, Austria

14:00 **Oxygen and water vapor interference in carbon nanofibers based humidity sensor** **B.PII 31**
O.Monereo, G. Vescio, S. Claramunt, O. Casals, J.D. Prades, A. Cirera, A. Cornet
MIND/IN2UB Electronics Department, Universitat de Barcelona, Spain

14:00 **NH3 and NO2 detection with carbon nanofibers flexible sensor modulated by ultraviolet light** **B.PII 32**
O.Monereo, S. Claramunt, G. Vescio, O. Casals, J.D. Prades, A. Cirera, A. Cornet
MIND/IN2UB Electronics Department, Universitat de Barcelona, Spain

14:00 **Development of a capacitive chemical sensor based on phthalocyanine acrylate-polymer/ HfO2/Si for detection of perchlorate** **B.PII 33**
M. Braik, C.Dridi, M. Ben Ali A. Ali, M. Abbes, M. Zabala, J. Bausells, N. Zine, N. Jaffrezic-Renault, A. Errachid
Université de Sousse, ISSAT de Sousse, Cité Ettafala, 4003 Ibn Khaldoun Sousse, Tunisia / Université de Monastir, LIMA, Faculté des Sciences de Monastir, 5019 Monastir, Tunisia / Analytical Laboratory, Department of Applied Organic Chemistry, National Research Centre, Cairo, Egypt / Centro National of Microelectronica (IMB-CSIC), Campus UAB, 08193 Bellaterra, Barcelona, Spain / Institut des Sciences Analytiques (ISA), Université Lyon, Université de Claude Bernard Lyon 1, UMR 5280, 5 rue de la Doua, 69100 Villeurbanne, France

14:00 **Surface Enhanced Raman Spectroscopy based sensing of aromatic hydrocarbons, using cyclodextrins functionalized nanosensor** **B.PII 34**
Inga Tijunelyte a , Nathalie Lidgi-Guigui a , Erwann Guenin a , Timothée Toury b , Marc Lamy de la Chapelle a
a Université Paris13, Sorbonne Paris Cité, Laboratoire CSPBAT, CNRS, (UMR7244), 74 rue Marcel Cachin, 93017 Bobigny, France; b Université de technologie de Troyes, Laboratoire de Nanotechnologie et d'instrumentation Optique, Institut Charles Delaunay, FRE 2848, 12 rue Marie Curie, 10010 Troyes, France

14:00 **A simple method to recover the graphene-based chemi-resistors signal** **B.PII 35**
Filippo Fedi1, Filiberto Ricciardella2-3, Maria Lucia Miglietta2, Tiziana Polichetti2, Ettore Massera2 and Girolamo Di Francia2
1 CNR-Institute for Composite and Biomedical Materials, Piazzale E. Fermi 1, Portici (Naples), I-80055, Italy; 2ENEA UTTP-MDB Laboratory, R.C. Portici, Piazzale E. Fermi 1, Portici (Naples), I-80055, Italy 3University of Naples 'Federico II', Department of Physics, Via Cinthia, I-80126, Naples, Italy

14:00 **Raman spectroscopy and thermogravimetric analysis based study of host-guest complex formation between cyclodextrins and aromatic compounds** **B.PII 36**
Inga Tijunelyte, Nathalie Lidgi-Guigui, Irena Milosevic Erwann Guenin, Marc Lamy de la Chapelle
Université Paris13, Sorbonne Paris Cité, Laboratoire CSPBAT, CNRS, (UMR7244), 74 rue Marcel Cachin, 93017 Bobigny, France

14:00 **PbS-based Schottky-diodes nitrogen dioxide sensors** **B.PII 37**
KACI Samira; KEFFOUS Aissa; MANSRI Omar; MENARI hamid
Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique , 02 Bd Frantz Fanon, B.P. 140, Alger 7 Merveilles, Alger, ALGERIE

14:00 **Electroactive polymer vibration energy harvesters for wireless sensor applications** **B.PII 38**
Kirstin Bornhorst, Christian Schirrmann, Andreas Weder, Andreas Heinig, Florenta Costache
Fraunhofer Institute for Photonic Microsystems IPMS, Dresden, Germany

14:00 **Intelligent Self Sealing Systems for Chemical Protection and Radiation Dosimetry Based on Carbon Nanotube Fibres** **B.PII 39**
N. Bardi, I. Jurewicz, A. B. Dalton
Department of Physics, University of Surrey, Guildford, GU2 7XH, UK

14:00 **On the influence of FET transducer platform and materials design on emissions and environmental monitoring** **B.PII 40**
M. Andersson, A. Lloyd spetz
Div of Applied Physics, Linköping University, SE-581 83 Linköping, Sweden

14:00 **Solar Powered Deoxygenation for Remotely Deployed Coulometric Detection of Heavy Metals** **B.PII 41**
Thomas Roussel, Mohamed Marei, Robert Keynton, and Richard Baldwin
University of Louisville (Bioengineering), University of Louisville (Chemistry), University of Louisville (Bioengineering), University of Louisville (Chemistry)

14:00 **Modeling of the response of acoustic piezoelectric resonators in biosensors applications** **B.PII 42**
M.Voinova
Chalmers University of Technology, Göteborg, Sweden

15:00 **Selective Detection of VOC using a virtual gas sensor array** **B.PII 43**
Tilman Sauerwald, Martin Leidinger, Andreas Schütze
Saarland University /Lab for Measurement Technology, Saarbrücken/GER

15:30 **Coffee Break**

16:00 **EMRS-2014 Plenary Session - No symposia parallel sessions**

18:30 **Gathering of Day**

29 May 2014

Optical Gas Sensing : Michele Penza, ENEA, Brindisi, Italy

08:45 **Sensing Pollutants with Optical Nanomaterials** **B.X 1**
Ruby N. Ghosh; Reza Loloee
Dept. of Physics, Michigan State University, USA

09:15 **3D hollow plasmonic nanostructures for biosensing and microfluidics** **B.X 2**
Mario Malerba, Ermanno Miele, Andrea Toma, Francesco De Angelis
Nanostructures Department, Istituto Italiano di Tecnologia

09:30 **Novel Optochemical Nanosensors** **B.X 3**
Martin Eickhoff
I. Physikalisches Institut, Justus-Liebig-Universitaet Giessen

10:00 **Coffee Break**

Catalytic Chemical Sensing Materials : Albert Romano-Rodriguez, University of Barcelona, Spain

10:30 **Vapour phase polymerised conducting polymer sensors for sensing ammonia** **B.XI 1**
Ehsan Danesh , Krishna C. Persaud
School of Chemical Engineering and Analytical Science, The University of Manchester, UK

11:00 **Increasing the selectivity of gas sensitive field effect transistors by dynamic operation** **B.XI 2**
Christian Bur, Mike Andersson, Anita Lloyd Spetz, Andreas, Schütze
Saarland University / Lab for Measurement Technology, Linköping University / Division of Applied Sensor Science, Linköping University / Division of Applied Sensor Science, Saarland University / Lab for Measurement Technology

11:15 **Molecularly imprinted La-doped mesoporous films: functional properties for environmental applications** **B.XI 3**
Davide Carboni, Luca Malfatti, Alessandra Pinna, Barbara Lasio, Yasuaki Tokudome, Masahide Takahashi, Plinio Innocenzi
a) Laboratorio di Scienza dei Materiali e Nanotecnologie, D.A.D.U., Universita` di Sassari, CR-INSTM, Palazzo Pou Salit, Piazza Duomo 6, 07041 Alghero, SS, Italy; b) Department of Materials Science, Graduate School of Engineering, Osaka Prefecture University, Sakai, Osaka 599-8531, Japan

11:30 **Nanosized PtPd/Al2O3 catalyst for hydrogen detection by stable reversible sensors** **B.XI 4**
1) T. Mazingue, M. Lomello-Tafin, M. Passard, L. Goujon, C. Hernandez-Rodriguez, 2) J.-L. Rousset, and F. Morfin 3) J.-F. Laithier,
1) Laboratoire SYMME, BP 80439, 74944 Annecy le Vieux Cedex, France 2) IRCELYON, CNRS-University of Lyon 2 avenue Albert Einstein, F-69626 Villeurbanne Cedex, France 3) Comelec SA, Rue de la Paix 129 - CH-2301 La Chaux-de-Fonds, Switzerland

11:45 **Catalytic Combustion-type CO Gas Sensor Operable at Low Temperatures** **B.XI 5**
Shinji Tamura, Ayaka Hosoya, Nobuhito Imanaka
Osaka University

12:00 **Tungstate materials as catalyst sensor** **B.XI 6**
Madjid Arab1*, Nadine Dirany1, Ali Hallaoui1,2, Loic Patout1, Christine Leroux1, Jean Raymond Gavarri1
1Université du Sud-Toulon Var, IM2NP, UMR CNRS 6242, BP 20132, 83957, La Garde, France 2 Université Ibn Zohr, LME, BP 32/S Agadir Maroc

12:15 **Surface activation of titania nanocrystals by deposition of vanadium oxide species: broadening the concept of doping for more sensitive chemoresistive gas sensors** **B.XI 7**
Mauro Epifani, Elisabetta Comini, Raul Diaz, Carmen Force, Reza Zamani, Jordi Arbiol, Teresa Andreu, Pietro Siciliano, Guido Faglia, Joan R. Morante
Consiglio Nazionale delle Ricerche – Istituto per la Microelettronica e Microsistemi (CNR-IMM), Lecce (Italy); SENSOR Lab, Department of Information Engineering, Brescia University and CNR-IDASC, Brescia, Italy; Electrochemical Processes Unit, IMDEA Energy Institute, Móstoles, Spain; NMR Unit,Centro de Apoyo Tecnológico, Universidad Rey Juan Carlos, c/Tulipán, s/n, 28933 Móstoles, Spain; Institut de Recerca en Energia de Catalunya (IREC), Barcelona, Spain; Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Bellaterra, Spain; Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain; Departament d'Electrònica, Universitat de Barcelona, Barcelona, Spain;

12:30 **Lunch**

Sensors for VOC detection : Andreas Schütze, Saarland University, Saarbrücken, Germany

14:00 **Hybrid Materials Design for VOC DetectionBased on a QCM Transducer** **B.XII 1**
Jiaqiang Xu,Nana Qian,Huimin Li, Ye Zhu,Yongheng Zhu,Yuan Zhang
NEST Lab, Department of Chemistry, College of Science,Shanghai University

14:30 **Catalytic metal-gate field effect transistors based on SiC for indoor air quality control** **B.XII 2**
Donatella Puglisi1, Jens Eriksson1, Christian Bur1-2, Andreas Schuetze2, Anita Lloyd Spetz1, and Mike Andersson1
1 Department of Physics, Chemistry and Biology, Applied Sensor Science, Linköping University, SE-58183 Linköping, Sweden; 2 Department of Mechatronics, Laboratory for Measurement Technology, Saarland University, D-66123 Saarbruecken, Germany

14:45 **Carbon nanotubes-based hybrid materials: development of gas sensors dedicated to BTX type gases.** **B.XII 3**
Amadou NDIAYE1,2, Jérôme BRUNET1,2, Michele Penza3, Alain PAULY1,2, Marco Alvisi3, Christelle VARENNE1,2
1Clermont Université, Université Blaise Pascal, Institut Pascal, BP 10448, F-63000 Clermont-Ferrand, France 2 CNRS, UMR 6602, Institut Pascal, F-63171 Aubière, France 3 ENEA Technical Unit of Technologies for Materials, Brindisi Research Center, I-72100 Brindisi, Italy,

15:00 **Effect of temperature on vapor-surface interactions of fiber-optic sensors (FOs) based on hybrid silica xerogel films to detect volatile organic compounds (VOCs)** **B.XII 4**
Aristizabal, N., Ríos, X., Echeverría, J.C., Garrido, J.J.
Departamento de Química Aplicada. Universidad Pública de Navarra. Campus Arrosadía, 31006 Pamplona. Spain.

15:15 **Selective Detection of VOCs using a virtual gas sensor array** **B.XII 5**
Tilman Sauerwald, Martin Leidinger, Andreas Schütze
Saarland University / Lab for Measurement Technology, Saarbrücken/GER

15:30 **Coffee Break**

New Nanosensors and Sensor Concepts : Michele Penza, ENEA, Brindisi, Italy

16:00 **Sensing concepts with advanced nano-patterned composite materials** **B.XIII 1**
Silke Christiansen(1,2), George Sarau(1), Sebastian Schmitt(1), M. Latzel(1), Muhammad Bashouti(1), Siegfried Waldvogel(3), Hossam Haick(4)
(1) Max Planck Institut for the science of light, Erlangen, Germany (2) Helmholtz-Zentrum Berlin, Berlin, Germany (3) Johannes Gutenberg Universität Mainz, Germany (4) Technion, Haifa, Israel

16:30 **Germanium nanowires: novel gas sensor material** **B.XIII 2**
J. Samà1, S. Barth2, J.D. Prades1, M. Seifner2, O. Casals1, I. Gracia3, J. Santander3, C. Calaza3, L. Fonseca3, C. Cané3, A. Romano-Rodríguez1
1 MIND-IN2UB-Dept. Electronics, Universitat de Barcelona (UB), Martí i Franquès 1, 08028, Barcelona, Spain; 2 Institute of Materials Chemistry, TU Wien, Getreidemarkt 9/165, A-1060 Vienna, Austria; 3 Institut de Microelectrònica de Barcelona, IMB-CNM-CSIC, 08193 Bellaterra, Spain

16:45 **DESIGN, MODELLING AND DEVELOPMENT OF LOW COST HIGH FREQUENCY PIEZOELECTRIC PARTICLE SENSOR** **B.XIII 3**
S. Thomas, F.H. Villa-Lopez, W. Ludurczak, M. Cole and J.W. Gardner
University of Warwick, UK

17:00 **Strong influence of oxygen adsorption on photoconductivity of CdS nanocrystal films and its application in room temperature O2 sensing** **B.XIII 4**
Lorenzo Maserati, Iwan Moreels, Roman Krahne, Liberato Manna, Yang Zhang
Italian Institute of Technology (IIT), Via Morego 30, 16163 Genoa, Italy

17:15 **Nanocomposites for the Electrochemical Detection of Heavy Metals** **B.XIII 5**
Marti Gich,1 Cesar Fernandez-Sanchez,2 Cosmin Cotet,3 Pengfei Niu1 and Anna Roig1
1Institut de Ciencia de Materials de Barcelona, ICMAB (CSIC), Campus UAB, 08193 Bellaterra, Spain 2Institut de Microelectronica de Barcelona, IMB-CNM (CSIC), Campus UAB, 08193-Bellaterra, Spain 3Faculty of Chemistry and Chemical Engineering, Babes Bolyai University, 400028 Cluj-Napoca, Romania

17:30 **MSDI Heterojunctions for Reliable Ammonia Sensing in Humid Atmosphere** **B.XIII 6**
J.-M. Suisse[1], M. Mateos[1], P. Gaudillat[1], M. Bouvet[1], J. Fouchet[2], L. Douce[2]
[1]Institut de Chimie Moléculaire de l'Université de Bourgogne (ICMUB), Université de Bourgogne, UMR CNRS 6302, 9 avenue A. Savary, F-21078 Dijon, France; [2] Institut de Physique et Chimie des Matériaux de Strasbourg, UMR, DMO, CNRS-Université de Strasbourg, Strasbourg, France

17:45 **Device fabrication, performances and aging of flexible gas sensor platforms** **B.XIII 7**
B.Medina-Rodriguez(1,2), G.Vescio(2), E.Xuriguera(2), A.Varea(2), O.Casals(2), F.Ramos(1), A.Cirera(2)
(1)FAE- Francisco Albero S.A.U., Rafael Barradas 19, L'Hospitalet de Llobregat 08908, Spain; (2)MIND/IN2UB Electronics Dept., University of Barcelona. Martí i Franqués 1, Barcelona 08028, Spain

18:00 **Multi-Parametric Flexible Sensors Based on Nanoparticles for Environmental Applications** **B.XIII 8**
Hossam Haick
The Department of Chemical Engineering and Russell Berrie Nanotechnology Institute, Technion ? Israel Institute of Technology, Haifa 3200003, Israel

18:30 **Gathering of Day**

30 May 2014

09:30 **COST Action TD1105 - 5th MC Meeting - Part I**

11:00 **Coffee Break**

11:30 **COST Action TD1105 - 5th MC Meeting - Part II**

13:00 **Light Lunch**

14:00 **End of Symposium B**

SYMPOSIUM C

Solid state ionics: thin films for energy and information applications

Symposium Organizers:

Jennifer L.M. Rupp, Electrochemical Materials, Zurich, Switzerland

Wolfgang Preis, Montanuniversitaet Leoben, Austria

Roger A. De Souza, Institute of Physical Chemistry, Aachen, Germany

Igor Lubomirsky, Department of Materials and Interfaces, Rehovot , Israel

Erik M. Kelder, Faculty of Applied Sciences, Delft, The Netherlands

26 May 2014

09:00 **INTRODUCTION**

09:10 **Atomic Scale Verification of Oxide-Ion Vacancy Distribution near a Single Grain Boundary in YSZ** **C.0. 1**
An, J, Park, JS, Koh, AL, Lee, HB, Jung, HJ, Schoonman, J, Sinclair, R, Gur, TM, Prinz, FB
Stanford University

Strain in Mixed Binary Oxides : Prof. I. Lubomirsky and Prof. B. Yildiz

09:40 **Anomalous Chemical Expansion of PrxCe1-xO2-δ Nanocrystalline Powders** **C.1. 1**
Y. Kuru1,2,3, S. R. Bishop1,4, D. Marrocchelli1,5, J. -J Kim1, B. Yildiz2, H. L. Tuller1
1Department of Materials Science & Engineering, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139, USA ; 2Department of Nuclear Science & Engineering, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139, USA; 3Department of Metallurgical & Materials Engineering, Middle East Technical University, Dumlupinar Bulvari No:1, Ankara, 06800, Turkey; 4International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Nishi-ku Fukuoka 819-0395, Japan; 5School of Chemistry, Trinity College Dublin, College Green, Dublin 2, Ireland

10:00 **Using ellipsometry with lock-in detection to measure activation energy of ion diffusion in ionic and mixed conductors** **C.1. 2**
Guy Lazovski1, Ellen Wachtel1, Yoed Tsur2, Igor Lubomirsky1
1Dept. Materials and Interfaces, Weizmann Institute of Science, Israel 2Dept. Chemical Engineering, Technion, Israel

10:20 **BREAK**

10:40 **Isolating the influence of microstructural and strain properties on the oxygen ion transport in YSZ thin films** **C.1. 3**
George F. Harrington, Andrea Cavallaro, Stephen J. Skinner, David W. McComb, John A. Kilner
1) Department of Materials, Imperial College London, London, UK 2) Department of Materials Science and Engineering, The Ohio State University, Columbus, Ohio, USA

11:00 **Growth of Ca3Co4O9 on CGO dense pellet by Pulsed Laser Deposition and thin film characterizations by XRD, TEM, EIS and Ellispometry.** **C.1. 4**
M.-H. Chambrier, I. Kehal, G. Mignardi, X. Flandre, V. Thoréton, A. Rolle ,S. Estradé, J.-F. Blach, C. Pirovano, S. Daviero-Minaud, R. N. Vannier
Univ Lille Nord de France, F-59000 Lille, France ; CNRS, UMR 8181, F-59650 Villeneuve d'Ascq, France; ENSCL, UCCS, F-59652 Villeneuve d'Ascq, France; UArtois, UCCS, F-62300 Lens, France; LENS,MIND-In2UB, Electronics Department, Universitat de Barcelona (UB),Mart'i Franqu's 1, Barcelona 08028, Spain

11:20 **Rare-earth elements-doped ceria: a correlation between the elastic/inelastic properties, ionic radii and vacancies concentration** **C.1. 5**
Roman Korobko1, Chien-Ting Chen2, Sidney Cohen1, Ellen Wachtel1, Sangtae Kim2, Anatoly Frenkel3, Igor Lubomirsky1
1Weizmann Institute of Science; 2UC Davis; 3Yeshiva University

11:40 **Impact of Strain State and Buckling on the Ionic Transport of Free-Standing Membrane vs. Self-Supported Pt-Gd0.2Ce0.8O1.9-x-Pt Micro-Electrode Structures** **C.1. 6**
Yanuo Shi, Sha Li, Markus Kubicek, Jennifer L.M. Rupp
Electrochemical Materials, Department of Materials, ETH Zurich

12:00 **Open circuit potential and Ohmic resistance of micro-SOFC employing a GDC electrolyte** **C.1. 7**
Gyeong Man Choi, Younki Lee, Sun Woong Kim
Department of Materials Science and Engineering/ Fuel Cell Research Center, Pohang university of Science and Technology (POSTECH), Pohang, 790-784 Korea

12:20 **LUNCH**

Surface Reactivity and Transport of Oxides : Prof. J. Fleig and Prof. W. Sitte

14:00 **Dynamic Interaction of Surface Point Defects with H2O and CO2 in Cerium Oxide** **C.2. 1**
William C. Chueh
Department of Materials Science & Engineering, Stanford University

14:30 **Redox activity of surface lattice oxygen in Fe & Co based perovskites revealed by operando spectroscopy** **C.2. 2**
David N. Mueller(1), Michael L. Machala(1), Hendrik Bluhm(2), William C. Chueh(1)
(1)Department of Materials Science & Engineering, Stanford University, 496 Lomita Mall, Stanford, CA 94305, USA (2) 2Chemical Sciences Division, Lawrence Berkeley National Laboratory,1 Cyclotron Road, Berkeley, CA 94720, USA

15:00 **Evidence for the formation of higher order Ruddlesden-Popper phases in thin film air electrodes by HS-LEIS** **C.2. 3**
Helena Téllez(1,2), Kuan-Ting Wu(2), Mónica Burriel(2), Yan Chen(3), Bilge Yildiz(3), John Kilner(1,2), Stephen Skinner(2), Tatsumi Ishihara(1)
(1) International Institute for Carbon-Neutral Energy Research, Kyushu University, Japan; (2) Department of Materials, Imperial College London, London, UK; (3) Laboratory for Electrochemical Interfaces, Massachusetts Institute of Technology, US

15:20 **The correlation of cation segregation, film morphology and oxygen reduction reaction of La0.6Sr0.4CoO3-δ thin films** **C.2. 4**
Rupp G. M., Limbeck A. and Fleig J.
Rupp G. M., Vienna University of Technology; Limbeck A., Vienna University of Technology; Fleig J., Vienna University of Technology

15:40 **Evaluation of Highly Active Perovskites for the Oxygen Reduction Reaction with Single Crystal Thin Films Prepared by Pulsed Laser Deposition** **C.2. 5**
Dengjie Chen, Chi Chen, Francesco Ciucci
Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology, Hong Kong, SAR China.

16:00 **BREAK**

16:30 **Ion transport in SrTiO3 thin films under bias load** **C.2. 6**
J. Fleig, S. Huber, K. Langer-Hansel, H. Hutter, G. Fafilek
Institute of Chemical Technologies and Analytics, TU Vienna, Austria

17:00 **Oxygen Transport in Epitaxial Thin Film Cathode for Solid Oxide Fuel Cells** **C.2. 7**
Kiyong Ahn, Hyungchul Kim, Ho-Il Ji, Jongsup Hong, Kyung Joong Yoon, Ji-Won Son, Byung-Kook Kim and Jong-Ho Lee
High-Temperature Energy Materials Research Center, Korea Institute of Science and Technology Seoul 136-791, Republic of Korea

17:20 **Enhanced Oxygen Surface Reaction in (Ba0.5Sr0.5)(Co0.8Fe0.2)O3-δ by Nanoscaled (La0.6Sr0.4)CoO3-δ Functional Layer** **C.2. 8**
L.-S. Unger1, M. Meffert2, C. Niedrig1, H. Störmer2, W. Menesklou1, S. F. Wagner1, D. Gerthsen2, E. Ivers-Tiffée1
1) Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruher Institut für Technologie (KIT), 76131 Karlsruhe/Germany 2) Laboratorium für Elektronenmikroskopie (LEM), Karlsruher Institut für Technologie (KIT), 76131 Karlsruhe/Germany lana.unger@kit.edu

POSTER SESSION 1

17:45 **First principles modeling of Ag adsorption on the LMO[001] MnO2- and LaO-terminated surfaces.** **C/P1 1**
A.U. Abuova1, T.M. Inerbaev1, A.T. Akilbekov1, Yu. A. Mastrikov2,3, E. A. Kotomin2,4
1 L.N. Gumilyov Eurasian National University,Mirzoyan str.2, Astana, Kazakhstan 2 Institute of Solid State Physics, University of Latvia, Kengaraga str. 8, Riga, Latvia 3 Materials Science and Engineering Dept., University of Maryland, College Park, USA 4 Max Planck Institute for Solid State Research, Heisenbergstr.1, Stuttgart, Germany

17:45 **Half-metallic Ferromagnetism in Cubic PrMnO3 Perovskite** C/P1 2
B.Bouadjemi*1, S.Bentata1, T. Lantri1, W.Benstaali1, A.Zitouni1 and A.Abbad2
1 Laboratory of Technology and Solid Properties, 2Signals and Systems laboratory, LSS, Faculty of Sciences and Technology, Abdelhamid Ibn Badis Mostaganem University, BO 227, 27000 Algeria E-mail: bbouadjemi@yahoo.fr

17:45 **Electronic and magnetic structure of double perovskite Ba2MnMoO6 from first-principales** C/P1 3
B.Bouadjemi*1, S.Bentata1, T. Lantri1, W.Benstaali1and A. Zitouni1
1 Laboratory of Technology and Solid Properties, Faculty of Sciences and Technology, Abdelhamid Ibn Badis Mostaganem University, BO 227, 27000 Algeria E-mail: bbouadjemi@yahoo.fr

17:45 **The electronic, structure properties of the TiO2: a first principles investigation within the modified Becke–Johnson exchange potential plus LDA and GGA** C/P1 4
S.Benatmane*1, B.Bouhafs1, B. Bouadjemi 2 and S. Bentata 2
1Department of physics Faculty of sciences Djillali Liabes University of Sidi Bel-Abbes, 22000, Algeria 2Laboratory of Technology and Solid Properties,Faculty of Sciences and Technology, BP227 Abdelhamid Ibn Badis University, Mostaganem (27000) Algeria Email*1: b.saadia@live.fr

17:45 **REDUCING ERROR & MEASUREMENT TIME IN IMPEDANCE SPEC-TROSCOPY, ELECTRICAL CONDUCTIVITY RELAXATION AND ISO-TOPE DEPTH PROFILING USING MODEL-BASED OPTIMAL EXPERI-MENTAL DESIGN** C/P1 5
Francesco Ciucci
Mechanical & Chemical Engineering. HKUST, Hong Kong SAR, China

17:45 **STUDY OF POLARIZABILITY AND HYPERPOLARISABILITY OF POLYACETYLENE CHAINS** C/P1 6
D. Taharchaouche1, F. Mechachti1, A. Djebaili1*
1 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria

17:45 **STUDY OF CONDUCTIVITY AND ISOMERIZATION REACTIONS OF POLYACETYLENE** C/P1 7
S. Bitam1, F. Mechachti2, A. Djebaili2
1 Laboratory of Physical chemistry- University of Media- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria

17:45 **Numerical investigation of a new Junctionless-Multigate design for low- cost pH sensing applications** C/P1 8
N. Abdelmalek1, F. Djeffal1, T. Bentrcia and M. Meguellati2
LEA, Department of Electronics, University of Batna, Batna 05000, Algeria. E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

17:45 **THERMODYNAMIC STUDY OF THE TERNARY SYSTEM GALLIUM-ARSENIC-BISMUTH** C/P1 9
N. Elayech*, H. Fitouri, Y. Soda, A. Rebey, and B. El Jani
Université de Monastir, Faculté des Sciences de Monastir Unité de Recherche sur les Hétéro-Epitaxies et Applications, 5000 Monastir, Tunisia E-mail: * elayech@yahoo.fr

17:45 **Water interaction with fluorine-doped Co3O4 (100) and (111) surfaces** C/P1 10
G. Kaptagai1, T.M. Inerbaev1, A.T.Akilbekov1, Yu.A. Mastrikov2,3, E.A. Kotomin2,4
1 L.N. Gumilyov Eurasian National University, Mirzoyan str. 2, Astana, Kazakhstan 2 Institute of Solid State Physics, University of Latvia, Kengaraga str. 8, Riga, Latvia 3 Materials Science and Engineering Dept., University of Maryland, College Park, USA 4 Max Plank Institute for Solid State Research, Heisenberg str. 1, Stuttgart, Germany

17:45 **First principles calculations of formation and migration of oxygen vacancies in the bulk and at the surface of complex perovskites for solid oxide fuel cell cathodes** C/P1 11
Yu. A. Mastrikov1,2, E. A. Kotomin1,3, R. Merkle3, M. M. Kuklja2, and J. Maier3
1Institute of Solid State Physics, University of Latvia, Kengaraga str. 8, Riga, Latvia; 2 Materials Science and Engineering Dept., University of Maryland, College Park, USA; 3Max Planck Institute for Solid State Research, Heisenbergstr.1, Stuttgart, Germany;

17:45 **Modelling of impedance spectra of porous SOFC cathodes: effect of grain boundaries** C/P1 12
Wolfgang Preis
Chair of Physical Chemistry, Montanuniversitaet Leoben, Franz-Josef-Strasse 18, A-8700 Leoben, Austria

17:45 **Reaction fronts formation during oxygen chemical diffusion in oxides** C/P1 13
Misha Sinder, Zeev Burshtein, Joshua Pelleg
Materials Engineering Department, Ben-Gurion University of the Negev

17:45 **Growth and Evaluation of Single-crystalline PrBaCo2O5+δ Thin Films on Oriented Substrates for Solid Oxide Fuel Cells** C/P1 14
Dengjie Chen, Yang Gao, Francesco Ciucci
Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology, Hong Kong, SAR China

17:45 **Experimental and Computational Investigations of Ba0.95La0.05FeO3-δ as Solid Oxide Fuel Cell Cathode Material** C/P1 15
Chi Chen, Dengjie Chen, Yang Gao, Francesco Ciucci
Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology, Hong Kong, SAR China

17:45 **The Bias Voltage Dependence of Oxygen Reduction Pathways on Strontium-Doped Lanthanum Manganite (LSM) Model Electrodes** C/P1 16
A. Welzl, T. M. Huber, E. Navickas, A. K. Opitz, H. Hutter, J. Fleig
Vienna University of Technology Institute of Chemical Technologies and Analytics Research Division Electrochemistry

17:45 **Atomic Layer Deposition of Ru for Direct Alcohol Solid Oxide Fuel Cells** C/P1 17
Heon Jae Jeong, Jun Woo Kim, Ho Jean Jeong, Kiho Bae, Joon Hyung Shim
School of Mechanical Engineering, Korea University, Seoul, Korea

17:45 **Influence of magnetron sputtering deposition conditions and thermal treatment on properties of platinum thin films** C/P1 18
Jolita Sakaliuniene, Brigita Abakeviciene, Kestas Slapikas, Sigitas Tamulevicius
Institute of Materials Science of Kaunas University of Technology, Savanorių av. 271, LT-50131 Kaunas, Lithuania

17:45 **Strontium delta-doped lanthanum cuprate heterostructures: cation redistribution and high-temperature superconductivity** C/P1 19
F. Baiutti1, G. Logvenov1, G. Gregori1, Y. Wang2, Z. Chen2, W. Sigle2, P.A. van Aken2, J. Maier1
1 Max Planck Institute for Solid State Research, Heisenbergstr. 1, D-70569 Stuttgart, Germany; 2 Stuttgart Center for Electron Microscopy, Max Planck Institute for Intelligent Systems, Heisenbergstr. 3, D-70569 Stuttgart, Germany

17:45 **Characterization of the electrical properties of donor doped barium titanate ceramics by impedance spectroscopy: effect of dc-bias and ac-voltage amplitude** C/P1 20
Johannes Hofer, Wolfgang Preis, Werner Sitte
Chair of Physical Chemistry, Montanuniversitaet Leoben, Franz-Josef-Straße 18, A-8700 Leoben, Austria

17:45 **Graphene/gold contact on n-doped GaAs substrate** C/P1 21
H. Ajlani (1), R. Othmen (1), M. Oueslati (1), A. Cavanna (2), A. Madouri (2)
(1) Unité de Recherche Nanomatériaux et Photonique, Département de physique, Faculté des Sciences de Tunis, Université de Tunis El Manar, 2092, Tunis, Tunisie ; (2) CNRS/LPN, Route de Nozay, F – 91460 Marcoussis, France

17:45 **Transparent p+-TiN:SnO2/n+-ITO tunnel diode** C/P1 22
Chih-Yi Hsieh, Chin-Han Liao, and Cheng-Yi Liu
Department of Chemical and Materials Engineering National Central University, Jhong-Li, Taiwan

17:45 **Conductivity and Hall effect relaxation of doped In2O3 thin films** C/P1 23
Mareike V. Hohmann, Andreas Klein
Technische Universität Darmstadt, Institut für Materialwissenschaft, Fachgebiet Oberflächenforschung, Jovanka-Bontschits-Strasse 2, 64287 Darmstadt, Germany

17:45 **Nanocomposite structures grown by inserting ionic salt RbNO3 into van der Waals gaps of III-VI layered semiconductors** C/P1 24
A.P. Bakhtinov (1), V.M. Vodopyanov (1), Z.R. Kudrynskyi (1), Z.D. Kovalyuk (1), V.V. Netyaga (1), O.S. Lytvyn (2)
(1) Frantsevich Institute for Problems of Materials Science, National Academy of Sciences of Ukraine, Chernivtsi Department, str. I. Vilde 5, 58001 Chernivtsi, Ukraine, (e-mail: kudrynskyi [at] gmail.com); (2) Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, pr. Nauky 4, 03028 Kyiv, Ukraine.

17:45 **Transparent conductive In-Si-O/Ag/In-Si-O multilayer grown for low-emissivity glass by sputtering at room temperature** C/P1 25
Young Seon Lee, Jun Young Choi, Sang Yeol Lee
Department of Electronic Engineering, Cheongju University, Cheongju, Chungbuk 360-764, Republic of Korea; Department of Electrical Engineering, Korea University, Seoul, 136-703, Republic of Korea; Department of Semiconductor Engineering, Cheongju University, Cheongju, Chungbuk 360-764, Republic of Korea

17:45 **Effect of Thickness of Ag on optical properties of low emissive SIZO/Ag/SIZO multilayer structure** C/P1 26
Moo Yeol Bae, Jun Young Choi, and Sang Yeol Lee
Department of Semiconductor Engineering, Cheongju University, Cheongju, Chungbuk 360-764, Republic of Korea; Department of Electrical Engineering, Korea University, Seoul 136-701, Republic of Korea; Department of Semiconductor Engineering, Cheongju University, Cheongju, Chungbuk 360-764, Republic of Korea

17:45 **The study and application of transparent p-type AlN:SnO2 thin films fabricated by cation- anion co-substitution** C/P1 27
Y. S. Liu, P. M. Lee, and C. Y. Liu
Department of Chemical and Materials Engineering, National Central University, Jhong-Li, Taiwan

17:45 **Fabrication and characterization of Ni-Zr Multilayered membrane for Hydrogen separation** C/P1 28
SungBum Park, Yong-il Park
Kumoh National Institute of Technology

17:45 **Magnetic properties of graphene /nickel composite in different oxidation levels** C/P1 29
Maryam Salimian, Olena Okhay, Rahul krishna, Joao Ventura, Elby Titus,Jose Gracio
1.Nanotechnology Research Division, Center for Mechanical Technology and Automation (TEMA), Department of Mechanical Engineering, University of Aveiro, Aveiro 3810-193, Portugal 2. Instituto de Física dos Materiais da Universidade do Porto (IFIMUP) and Faculty of Sciences University of Porto, Porto 4169-007, Portugal

17:45 **Co3O4@Layered Double Hydroxide Core/Shell Hierarchical Nanowire Arrays for Enhanced Supercapacitance Performance** C/P1 30
Fanyu Ning, Mingfei Shao, Chenglong Zhang, Simin Xu, Min Wei
Beijing University of Chemical Technology

17:45 **Ultra High Frequency Rectifier Based On Pt-IGZO Schottky Diodes** C/P1 31
Jiawei Zhang, Aimin Song
University of Manchester

27 May 2014

Resistive Switching in Metal Oxides : Prof. R. Dittmann and Prof. X. Guo

08:30 **Opportunities and Challenges for the Solid State Ionics Community in the Field of Emerging Memory Technologies** C.3. 1
R. Meyer
-

09:00 **Modified point defect chemistry at dislocation networks of TiO2 (Rutile)** C.3. 2
Kiran K. Adepalli1*,Rotraut Merkle1,Marion Kelsch2 and Joachim Maier1
1Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany 2Max Planck Institute for Intelligent Systems, Heisenbergstr. 3, 70569 Stuttgart, Germany *present address: Department of Material Science and Engineering, Department of Nuclear Science Engineering, Massachusetts of Institute of Technology, Cambridge, 02139 USA

09:20 **Current-Voltage Relations and Defect Distribution in Metal1IMixed Ionic Electronic ConductorIMetal2 Devices** C.3. 3
Dima Kalaev, Ilan Riess
Physics Department Technion-IIT

09:40 **Electrical Characteristics of hybrid Resistive Switching Devices Observed by TEM and Atom probe tomography** C.3. 4
J. H. Lee, E. J. Cha, B. K. Chae, H. S. Hwang and C. G. Park
Pohang University of Science and Technology

10:00 **BREAK**

10:30 **Nanoscale analysis of redox-processes in resistive switching complex oxide thin film devices** C.3. 5
R. Dittmann
Peter Grünberg Institute (PGI 7), Forschungszentrum Jülich GmbH, 52425 Jülich, Germany

11:00 **Formation and disruption of nano-filaments in HfO2/TiN resistive switching structures** C.3. 6
S. Brivio, G. Tallarida, E. Cianci and S. Spiga
Laboratorio MDM, IMM-CNR, via C. Olivetti 2, 20864 Agrate Brianza (MB), Italy

11:20 **Resistive switching in SrTixFe1-xO3 Solid Solution Thin Films: Chronoamperommetry as new Tool to Describe Defect Kinetics in Memristive Systems** C.3. 7
F. Messerschmitt, M. Kubicek, S. Schweiger, J.L.M. Rupp
Electrochemical Materials, ETH Zurich

11:40 **Investigation of nanoscale ionic transport in oxide materials** C.3. 9
Nina Balke, Stephen Jesse, Sergei Kalinin
Center for Nanophase Materials Sciences Oak Ridge National Laboratory

12:10 **LUNCH**

Theory : Prof. M. Martin and Dr. R. DeSouza

14:00 **Elastic Strain and Dislocations in Oxide Thin Films: Hand-in-hand or counter?** C.4. 1
Bilge Yildiz, Lixin Sun, Dario Marrochelli, Yue Fan
Laboratory for Electrochemical Interfaces, Department of Nuclear Science and Engineering, Massachusetts Institute of Technology 24-210, 77 Massachusetts Avenue, Cambridge 02139, USA

14:30 **Migration of cation defects in cerium dioxide** C.4. 2
Stefan Beschnitt, Tobias Zacherle and Roger A. De Souza
Institute of Physical Chemistry, RWTH Aachen University

14:50 **MOLECULAR DYNAMICS SIMULATIONS OF PROTONIC AND IONIC CONDUCTORS UNDER STRAIN** C.4. 3
A. Ottochian, D. Frimat, G. Dezanneau
Lab. SPMS, Ecole centrale Paris, Grande voie des vignes 92295 CHATENAY-MALABRY CEDEX, France

15:10 **A comparative study of structural stability of complex perovskites for solid oxide fuel cells: First principles thermodynamic calculations** **C.4. 4**
E.A. Kotomin, M.M. Kuklja, D. Fuks, Yu. A. Mastrikov, J. Maier
Max Planck Institute for Solid State Research, Stuttgart, Germany; Institute for Solid State Physics, University of Latvia, Riga, Latvia; Materials Science and Eng. Dept., University of Maryland, College Park, MD, USA; Dept Materials Engineering, Ben Gurion University of the Negev, Israel

15:30 **Band Diagrams for Electrochemical Devices.** **C.4. 5**
J.Roqueta, J.Santiso
Institut Catala de Nanociencia i Nanotecnologia (ICN2)

15:50 **BREAK**

16:20 **Atomistic modelling of symmetric tilt grain boundaries in SrTiO3** **C.4. 6**
Amr H. H. Ramadan and Roger A. De Souza
Institute of Physical Chemistry, RWTH Aachen University

16:40 **Ab initio calculations of SrTiO3, BaTiO3, PbTiO3 and CaTiO3 (001), (011) and (111) surfaces** **C.4. 7**
R. I. Eglitis
Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia

17:00 **Ab initio study of rare-earth compounds for Li-ion battery applications** **C.4. 8**
Frank Grosse
Paul-Drude-Institut für Festkörperelektronik Berlin (Germany)

28 May 2014

Oxide Interfaces : Prof. Y. Kuru and Dr. G Gregori

08:30 **Fast ionic conduction and diffusion in solid electrolytes along interfaces –- Overview on recent studies on oxide ion conductors and an interface strain based model for thin layered systems** **C.5. 1**
Carsten Korte
Fuel Cell Laboratory, FZ Jülich, Germany

09:00 **The interplay of cationic defects in STO and electrical properties of the LAO/STO-interface** **C.5. 2**
F.Gunkel, S. Wicklein, S. Hoffmann-Eifert, R. Dittmann, R. Waser
Forschungszentrum Jülich GmbH, Peter Gruenberg Institute 7 & JARA-FIT

09:20 **Step-conformal deposition of TiO2 and MnO2 electrodes on advanced silicon microstructures for 3D Li-ion microbatteries and micro-supercapacitors,** **C.5. 3**
E. Eustache1,2,3, C. Douard2, P. Tilmant1,3, L. Morgenroth1,3, P. Rousse4l, T. Brousse2,3 and C. Lethien1,3
1 Institut d'Electronique, de Microélectronique et de Nanotechnologie, CNRS UMR 85202 2 Institut des Matériaux Jean Rouxel, CNRS UMR 6502 France, 3 Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS FR 3459 4 Unité de Catalyse et de Chimie du Solide (UCCS), CNRS UMR 8181

09:40 **Tuning the Ionic Conductivity of Er2O3-Gd0.1Ce0.9O2-x Multilayer Dot Micro-Devices by Lattice Strain: Implications for Fabrication and Oxide Near Order-Transport Interaction** **C.5. 4**
S. Schweiger, M. Kubicek, C. Murer, J.L.M. Rupp
Electrochemical Materials, Department of Materials Science, ETH Zurich, Switzerland

10:00 **BREAK**

10:30 **Electrical conducting thin films: The importance of charge carrier redistribution at interfaces** **C.5. 5**
G. Gregori, M.C. Göbel, F. Baiutti, E. Gilardi, G. Logvenov, J. Maier
Max Planck Institute for Solid State Research, Heisenbergstr. 1, D-70569 Stuttgart, Germany

11:00 **In-situ Hall-effect monitoring of vacuum annealing of In2O3:H2O thin films** **C.5. 6**
H. Wardenga, M. V. Hohmann, A. Klein
Technische Universität Darmstadt, Institute of Materials Science, Surface Science Division, Jovanka-Bontschits-Straße 2, 64287 Darmstadt, Germany

11:20 **The effect of orientation, thickness and lattice strain of the surface segregation in CGO thin films** **C.5. 7**
George F. Harrington, Stephen J. Skinner, David W. McComb and John A. Kilner
1) Department of Materials, Imperial College London, London, UK 2) Department of Materials Science and Engineering, The Ohio State University, Columbus, Ohio, USA

11:40 **Interface Control of Oxide Films vs Silicon for next Generation Memories at IBM** **C.5. 8**
Marchiori, C. Fompeyrine J.
IBM Research

12:10 **CMOS-compatible 3-D electrostatic supercapacitors fabricated within high surface area nanostructured templates** **C.5. 9**
Micheal Burke, Alan Blake, Aidan Quinn
Tyndall National Institute

12:30 **LUNCH**

POSTER SESSION 2

14:00 **Synthesis and electrical properties of (CaxSr1−x)TiO3 as anode material** **C/P2 1**
Ali Matri , Messaoud Kahlaouia, Abdewaheb Inoublia , Adel Madania,
Material physics laboratory , faculty of sciences of bizerte Tunisia, University Carthage b Appiled Science college , University Um Al-Qura , Makkah Al Mukarramah .KSA

14:00 **Electrochemical properties of La0.2Sr0.7TiO3 thin film electrodes under reducing conditions** C/P2 2
Fritscher G. (1), Kogler S. (1), Huber T. (1), Opitz A. (1), Fleig J. (1), Heel A. (2), Burnat D. (3), Holzer L. (4)
(1) Vienna University of Technology, Institute of Chemical Technologies and Analytics, Getreidemarkt 9, 1060 Vienna; (2) ZHAW, Zurich University of Applied Sciences, Institute of Materials and Process Engineering, Technikumsstrasse 9, CH-8400 Winterthur, Switzerland; (3) EMPA, Swiss Federal Laboratories for Material Science and Technology, High Performance Ceramics, Ueberlandstasse 129, CH-8600 Duebendorf, Switzerland; (4) ZHAW, Zurich University of Applied Sciences, Institute of Computational Physics, Wildbachstrasse 21, CH-8400 Winterthur, Switzerland

14:00 **Electrochemical properties of acceptor doped ceria electrodes in reducing atmosphere: The separation of elementary processes** C/P2 3
Peter Velicsanyi, Andreas Nenning, Edvinas Navickas, Alexander K. Opitz, Herbert Hutter, Juergen Fleig
Vienna University of Technology, Institute of Chemical Technologies and Analytics, Getreidemarkt 9/164-EC, 1060 Vienna, Austria

14:00 **New water-based sol-gel synthesis routes for LaNi0.6Fe0.4O3-δ-nanolayers** C/P2 4
Martin Perz, Edith Bucher, Werner Sitte
Chair of Physical Chemistry, Montanuniversitaet Leoben, Franz-Josef-Straße 18, A-8700 Leoben, Austria

14:00 **Microstructure and oxygen mobility of doped ceria- Pr(Ni,Co)Ox nanocomposites** C/P2 5
Vladislav Sadykov1,2, Nikita Eremeev1, Ekaterina Sadovskaya1, Arkady Ishchenko1, Vladimir Pelipenko1, Vitaly Muzykantov1, Tamara Krieger1, Vladimir Belyaev1, Vladimir Rogov1,2, Vyacheslav Ivanov1, Zakhar Vinokurov1, Aleksandr Shmakov1,Uvarov3, Yurii Ohlupin3, Artem Ulikhin3
1Novosibirsk State University; 2Boreskov Institute of Catalysis; 3Institute of Solid State Chemistry and Mechanical Activation, Novosibirsk, Russia

14:00 **Characterization of Oxygen Stoichiometry Changes of Selected Mixed Conducting Perovskites** C/P2 6
C. Niedrig, L.-S. Unger, S. F. Wagner, W. Menesklou, E. Ivers-Tiffée
Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe/Germany

14:00 **Evaluation of ECR Measurements on MIEC Oxides Performed in an "Oxygen Pump" Setup** C/P2 7
C. Niedrig, L. Willms, L.-S. Unger, W. Menesklou, S. F. Wagner, E. Ivers-Tiffée
Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe/Germany

14:00 **High-Temperature Setup for Hall Measurements on Mixed Conductors** C/P2 8
C. Niedrig, L. Wolff, L.-S. Unger, W. Menesklou, S. F. Wagner, E. Ivers-Tiffée
Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe/Germany

14:00 **Characterizations of physical pin-holes in thin film electrolyte via spark discharge method** C/P2 9
Ikwhang Chang1, Sanghoon Ji1, Taehyun Park2,Suk Won Cha1,2
1Graduate School of Convergence Science and Technology(GSCST), Seoul National University, Gwanakro 1 Gwanakgu, Seoul, 151744, Republic of Korea.
2Department of Mechanical and Aerospace Engineering, Seoul National University, Gwanakro 1 Gwanakgu, Seoul, 151744, Republic of Korea.

14:00 **The temperature dependent conductivity of YSZ revisited: Serial two barrier model vs. association model** C/P2 10
C. Ahamer, A.K. Opitz, G. Rupp, J. Fleig
Institute of Chemical Technologies and Analytics, TU Vienna, Austria

14:00 **Enhanced ionic transport at the film/substrate interface of epitaxial Y2Zr2O7 layers grown on MgO** C/P2 11
E. Gilardi, G. Gregori, J. Maier
Max Planck Institute for Solid State Research, Heisenbergstr. 1, D-70569 Stuttgart, Germany

14:00 **Bismuth oxide thin films grown by radiofrequency-assisted pulsed laser deposition for solid oxide fuel cells applications** C/P2 12
Catalin Constantinescu (1), Valentin Ion (1), Simona Condurache-Bota (2), Petre Rotaru (3)
(1) INFLPR – National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor bd., RO-077125, Bucharest, Romania; (2) «Dunarea de Jos» University, Faculty of Sciences; 111 Strada Domneasca St., RO-800201, Galati, Romania; (3) University of Craiova, Faculty of Physics, 13 A.I. Cuza St., Craiova RO-200585, Dolj, Romania;

14:00 **Determination of strain states in multilayers of YSZ and Rare Earth Metal Oxides and their effect on ionic conductivity** C/P2 13
Johannes Keppner, Carsten Korte, Jürgen Schubert, Willi Zander, Mirko Ziegner, Detlef Stolten
IEK-3: Electrochemical Process Engineering; IEK-3: Electrochemical Process Engineering; PGI-9: Semiconductor Nanoelectronics, JARA: Fundamentals of Future Information Technologies; PGI-9: Semiconductor Nanoelectronics, JARA: Fundamentals of Future Information Technologies; IEK-2: Microstructure and Properties of Materials; IEK-3: Electrochemical Process Engineering, Chair for Fuel Cells RWTH Aachen University Germany. All: Forschungszentrum Jülich GmbH, Leo-Brandt Straße 1, 52425 Jülich, Germany

14:00 **High energy x-ray photoemission of fluoride based ion conductors** C/P2 14
K. Koshmak(1,2), A. Banshchikov(2), T. Vergentiev(3), M. Montecchi(4), D. Ceolin(5), J.P. Rueff(5), N.S. Sokolov(2), L. Pasquali(1,4)
1) Dipartimento di Ingegneria E. Ferrari, Università di Modena e Reggio Emilia, Via Vignolese 905, 41125 Modena (Italy) 2) Solid State Physics Division, Ioffe Physical-Technical Institute of Russian Academy of Sciences, 26 Polytechnicheskaya str., 194021, St. Petersburg, Russia 3) St. Petersburg Polytechnical University, 29 Polytechnicheskaya str., 195251, St. Petersburg, Russia / T. Vergentiev 4) IOM-CNR, s.s. 14, Km. 163.5 in AREA Science Park, 34149 Basovizza, Trieste, Italy 5) Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, F-91192 Gif-sur-Yvette Cedex, France

14:00 **Optical and Electrical Investigation of Oxygen Diffusion in Thin Films of Gd-doped Ceria** C/P2 15
Guy Lazovski, Olga Kraynis, Roman Korobko, Ellen Wachtel and Igor Lubomirsky
Dept. Materials and Interfaces, Weizmann Institute of Science, Israel

14:00 **Impact of Laser Irradiation on Properties of micro-SOFC Electrolytes** C/P2 16
Mindaugas Maciulevičius1, Jolita Sakaliūnienė2, Brigita Abakevičienė2 3, Sigitas Tamulevičius2, Gediminas Račiukaitis1
1 Center for Physical Sciences and Technology, Savanoriu ave. 231, LT-02300 Vilnius, Lithuania; 2 Institute of Materials Science, Kaunas University of Technology, Savanoriu ave. 271, LT-50131 Kaunas, Lithuania; 3 Department of Physics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania;

14:00 **New ion-conducting glasses in the AgI-HgS-As2S3system** C/P2 17
S.Khaoulani 1,2,3 M. Kassem 2, S.Fourmentin ,1,3 E. Bychkov 1,2
1 Univ. Lille Nord de France ,F-59000 Lille, France ; 2 LPCA, ULCO EA 4493, Dunkerque F-59140, France ; 3 ULCO, UCEIV EA-4492, F-59140 Dunkerque, France ;

14:00 **`Fabrication and Characteristic of Niobium Phosphate Glass Thin Film** C/P2 18
Dae Ho Kim, Sung Bung Park, Deok-hwan Yun, Sung gwan Hong and Yong-il Park
Kumoh National Institute of Technology

14:00 **Structure and Properties of the Ni1-xLixCo2O4 Spinel Thin Films** C/P2 19
Jung- Hee Kim; Hae-Kyoung Kim; Hee Young Lee; Jai-Yeoul Lee
Yeungnam University

14:00 **Fabrication and Electrical Properties of Phosphate Glass Thin Films with High Water Concentration** C/P2 20
Suk Hee Lee1, Sung Bum Park1, Gyu Hyeon Nam1, Yong-il Park1#
School of Advanced Materials and System Engineering, Kumoh National Institute of Technology Gumi,Gyeongbuk, Korea, 730-701

14:00 **Effect of Simultaneous Doping with Group V and Lanthanide Elements on the Stability of Al-substituted Li7La3Zr2O12 Ceramic Electrolyte** C/P2 21
M. Rawlence1,2, M. Kubicek2, J.L.M Rupp2, S.Buecheler1
1 Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, CH-8600 Duebendorf, Switzerland 2 Laboratory for Electrochemical Materials, Department of Materials Science, ETH Zurich Schafmattstr. 30, 8093 Switzerland

14:00 **Al2O3/HfO2 Functional Stack Films based Resistive Switching Memories with Controlled SET and RESET Voltages** C/P2 22
Lin Chen, Qing-Qing Sun, Jiao-Jiao Guo,Wen Yang, Peng Zhou, Hong-Liang Lu, Peng-Fei Wang, Shi-Jin Ding, David Wei Zhang
Fudan University

14:00 **Impedance characterization of resistive switching conduction mechanism in TaOx-based memory** C/P2 23
Yu-Lung Chung, Jiun-Jie Fang and Jen-Sue Chen*
Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan

14:00 **Resistive switching characteristics of La doped HfO2 for nonvolatile memory application** C/P2 24
Hailing Tu, Hongbin Zhao, Feng Wei, and Jun Du
Advanced Electronic Materials Institute, General Research Institute for Nonferrous Metals, Beijing 100088, China

14:00 **Highly Uniform, Electroforming-free, and Self-rectifying Resistive Memory in Pt/Ta2O5/HfO2-x/TiN structure** C/P2 25
Jung Ho Yoon,* Seul Ji Song, Il-Hyuk Yoo, Jun Yeong Seok, Kyung Jean Yoon, Dae Eun Kwon, Tae Hyung Park, and Cheol Seong Hwang
Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, Seoul National University, Seoul 151-744, (Korea)

14:00 **Development of artificial SEI layers for battery materials** C/P2 26
Mercedes A. Carrillo S., René Hausbrand, Prof. Wolfram Jaegermann
Technische Universität Darmstadt, Material- und Geowissenschaften, Surface Science

14:00 **Coating-Development for Al3+-Conducting Thin Film Batteries by PLD** C/P2 27
W. Förster, S. Braun, A. Leson, T. Nestler, T. Leisegang, D. C. Meyer
Fraunhofer Institute for Material and Beam Technology IWS

14:00 **Electrochemical and structural studies in lithium borophosphorus oxynitride electrolyte for thin film batteries** C/P2 28
Chanhwi Park, Sungbo Hong, Minjeong Kim, Giho Lee, Dongwook Shin *
Division of Materials Science and Engineering, Hanyang university

14:00 **THIN FILMS DEPOSITION OF LITHIUM ORTHOSILICATES AND GARNETS FOR LITHIUM MICRO-BATTERIES** C/P2 29
I. Quinzeni, S. Ferrari, E. Quartarone, D. Capsoni, P. Mustarelli, M. Bini
I. Quinzeni, S. Ferrari, E. Quartarone, D. Capsoni, P. Mustarelli, M. Bini; Dipartimento di Chimica, Sezione di Chimica Fisica, Università di Pavia, viale Taramelli 16, 27100 Pavia, Italy

14:00 **Flux Coating Fabrication of LiNi0.5Mn1.5O4 Crystal Layer for Lithium-Ion Rechargeable Battery Cathode with High Energy and Power Densities** C/P2 30
Katsya Teshima[1,2], Hajime Wagata[1,2], Nobuyuki Zettsu[1,2], Shuji Oishi[1]
[1] Shinshu University, [2] JST-CREST

14:00 **Hydrogen as effective modificatory tool of thin films of vanadium dioxide or germanium: quasichemical approach to understanding proton state and mobility in them** C/P2 31
Baikov Yu.M., Klimov V.A.
Ioffe Physical Technical Institute of RAS

14:00 **Influence of changes in the transport properties of the radiation and on the heat transfer of a silicon particle immersed in a plasma.** C/P2 32
Zeggai Hichem, Zeggai Oussama , Ould-Abbes Ammaria
Research unit of Materials and Renewable energies (URMER), University Abou Bakr Belkaïd, B.P. 119, Tlemcen, Algeria

14:00 **Morphology and structural properties of nc-Si:H thin films deposited on monocryslalline Silicon: Effect of the substrate temperature** C/P2 33
Malek Atyaoui, Ben Amor Sana,Wissem Dimassi, Brahim Bessaïs and Hatem Ezzaouia.
Laboratoire de Photovoltaïque, Centre de Recherche et des Technologies de l'Energie, PB: 95, Hammam Lif 2050, Tunisia

14:00 **Liquid transport through nanoporous graphene** C/P2 34
Jakob Buchheim, Roman Wyss, Kemal Celebi, Ali O Altun, Hyung Gyu Park
Nanoscience for Energy Technology and Sustainability, Department of Mechanical and Process Engineering, ETH Zurich

14:00 **Enhanced sensitivity in the VIS-NIR range under UV light in a-SiC pinpin device** C/P2 35
V. Silva1,2, P. Louro1,2, M. A Vieira1,2, M. Vieira1,2,3
1Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1949-014 Lisboa, Portugal Tel: +351 21 8317290, Fax: +351 21 8317114; 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal.; 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal

16:00 **PLENARY SESSION**

Mixed Conducting Perovskites I : Prof. W. Preis and Dr. M. Burriel

08:30 **Ion beam analysis techniques applied to mixed conducting thin films: from surface reconstruction to combinatorial screening** C.6. 1
M. Burriel1,2, A.M. Saranya1, A. Morata1, H. Téllez2,3, Y. Chen4, N. Tsvetkov4, B. Yildiz4, A. Tarancón1 and John A. Kilner2,3
1 Catalonia Institute for Energy Research (IREC), Department of Advanced Materials for Energy 2Department of Materials, Imperial College London, London, SW7 2AZ, UK 3International Institute for Carbon-Neutral Energy Research, Kyushu University 4Laboratory for Electrochemical Interfaces, Massachusetts Institute of Technology, US

09:00 **Visualization of electrochemical reduction zones by cathodic 18O incorporation at model electrodes: strengths and limitations** C.6. 2
Alexander K. Opitz (1), Markus Kubicek (1,2), Stefanie Huber (1), Tobias Huber (1), Andreas Nenning (1), Edvinas Navickas (1), Gerald Holzlechner (1), Herbert Hutter (1), and Jürgen Fleig (1)
(1) Vienna University of Technology, Institute of Chemical Technologies and Analytics, Getreidemarkt 9/164-EC, 1060 Vienna, Austria; (2) ETH Zurich, Department of Materials, Electrochemical Materials, Schafmattstraße 30, 8093 Zurich, Switzerland

09:20 **Preparation of La(Sr)Fe(Mn)O3 Film for dense anode of SOFC using LaGaO3 thin film electrolyte** C.6. 3
Tatsumi Ishihara, Young-Wan Ju, Shintaro Ida
International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Fukuoka, Japan; Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Fukuoka, Japan

09:40 **Cathode materials for H-SOFC: bulk properties and oxygen exchange kinetics** C.6. 4
D. Poetzsch, R. Merkle, J. Maier
Max Planck Institut for Solid State Research Stuttgart Germany

10:00 **BREAK**

10:30 **Defect Chemistry of Alkaline Earth Metal (Sr/Ba) Titanates** C.6. 5
Xin Guo
Laboratory of Solid State Ionics, School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhan 430074, P.R. China

11:00 **Electrochemical properties of La0.6Sr0.4FeO3-δ thin film electrodes under oxidizing and reducing conditions** C.6. 6
Kogler S., Langer-Hansel K., Nenning A., Opitz A., Hutter H., Fleig J.
Vienna University of Technology, Institute of Chemical Technologies and Analytics, Getreidemarkt 9, 1060 Vienna

11:20 **Chemical Expansion in La0.5Ca0.5MnO3** C.6. 7
M. H. Seren(1), H. –U. Habermeier(2), Y. Kuru(1)
(1)- Department of Metallurgical & Materials Engineering, Middle East Technical University, Dumlupinar Bulvari No:1, 06800, Ankara, Turkey (2)- Max Planck Institute for Solid State Research, Heisenberg str. 1, D-70569, Stuttgart, Germany

11:40 **Anion and Cation Diffusion in Thin-Film SrRuO3** C.6. 8
Henning Schraknepper, Regina Dittmann, Roger A. De Souza
Institute of Physical Chemistry RWTH Aachen University and JARA-FIT, Landoltweg 2, 52056 Aachen, Germany; Peter-Grünberg-Institute 7, Forschungszentrum Jülich, 52425 Jülich, Germany; Institute of Physical Chemistry RWTH Aachen University and JARA-FIT, Landoltweg 2, 52056 Aachen, Germany

12:00 **LUNCH**

Batteries : Prof. E. Kelder and Prof. P. Simon

14:00 **Lithium-ion batteries: the role of passivation films in ageing processes of high energy systems** C.7. 1
Rémi DEDRYVERE, a Lucille BODENES, a Dominique FOIX, a Hervé MARTINEZ, a Danielle GONBEAU, a Florent FISCHER, b Cécile TESSIER, b Jean-Frédéric MARTIN, c Sébastien PATOUX c
a IPREM, University of Pau, Hélioparc, 2 av. Pierre Angot, 64000 Pau, France
b SAFT, 111/113 bd Alfred Daney, 33074 Bordeaux cedex, France c CEA/DRT/LITEN, 17 rue des Martyrs, 38054 Grenoble cedex 9, France

14:30 **Surface science investigations on the interface formation between thin film lithium ion conductors and electrode materials** C.7. 2
André Schwöbel, René Hausbrand, Wolfram Jaegermann
Technische Universität Darmstadt, Materials Science Department, Surface Science Division, Jovanka-Bontschits-Straße 2, 64287 Darmstadt, Germany

14:50 **Systematic design of thiophosphate-based all-solid-state batteries** C.7. 3
S. Adams, R. Prasada Rao, M.H. Chen, H.M. Chen
National University of Singapore, Department of Materials Science and Engineering, Singapore

15:10 **Electrical characterization of LiAlO2 thin films prepared by Atomic Layer Deposition (ALD)** C.7. 4
Yang Hu, Amund Ruud, Ville Miikkulainen, Truls Norby, Ola Nilsen, Helmer Fjellvåg
Centre for Materials Science and Nanotechnology, Department of Chemistry, University of Oslo P.O. Box 1033, Blindern, N-0315 Oslo, Norway

15:30 **Organic electrode material for all-solid-state Li-ion batteries: Investigations using UHV-based model approach** C.7. 5
R. Precht, R. Hausbrand, W. Jaegermann
Darmstadt University of Technology Department of Material Sciences Surface Science Division Jovanka-Bonschits-Straße 2 64287 Darmstadt Germany

15:50 **Pore filling ion conducting membranes for vanadium redox flow batteries** C.7. 6
Young-Woo Choi, Mi-Soon Lee, Kyoung-Hee Shin
Korea Institute of Energy Research, South Korea

16:10 **BREAK**

Mixed Conducting Perovskites II : Prof. J.L.M. Rupp and Dr. N.H. Perry

16:40 **Investigating the Role of Electronic Structure in Oxygen Exchange Kinetics Using Model Thin Film (Sr,Ba,La)(Ti,Fe)O3-α Fuel Cell Cathodes** C.8. 1
Nicola H. Perry, Jaejin Kim, Melanie Kuhn, John W. Druce, Takeshi Daio, Sean R. Bishop, and Harry L. Tuller
Department of Materials Science and Engineering, MIT, Cambridge MA USA & I2CNER, University of Kyushu, Fukuoka, Japan, Department of Materials Science and Engineering, MIT, Cambridge MA USA, Department of Materials Science and Engineering, MIT, Cambridge MA USA, I2CNER, University of Kyushu, Fukuoka, Japan, I2CNER, University of Kyushu, Fukuoka, Japan,Department of Materials Science and Engineering, MIT, Cambridge MA USA & I2CNER, University of Kyushu, Fukuoka, Japan, Department of Materials Science and Engineering, MIT, Cambridge MA USA & I2CNER, University of Kyushu, Fukuoka, Japan,

17:10 **Long-term stability of the IT-SOFC cathode materials La0.6Sr0.4CoO3-δ and La2NiO4+δ against chromium poisoning** C.8. 2
Nina Schrödl, Edith Bucher, Andreas Egger, Patrice Kreiml, Christian Teichert, Werner Sitte
Chair of Physical Chemistry, Montanuniversitaet Leoben, Franz-Josef-Straße 18, A-8700 Leoben, Austria

17:30 **Identifying, Quantifying and Modifying Reaction Pathways of Oxygen Reduction on Lanthanum Manganite (LSM) Model Electrodes** C.8. 3
T. M. Huber (1), A. K. Opitz (1), M. Kubicek (1), A. Welzl (1), G. Holzlechner (1), E. Navickas (1), Y. Chen (2), H. Hutter (1), B. Yildiz (2), J. Fleig (1)
(1) Vienna University of Technology Institute of Chemical Technologies and Analytics Research Division Electrochemistry, (2) MIT Department of Nuclear Science and Engineering Laboratory for Electrochemical Interfaces

Cation Conductors : Dr. H. Tellez and Dr. A. Opitz

08:30 **Highly disordered thin film oxides** C.9. 1
M. Martin, L. Nagarajan, J. Brendt, M. Liu
Institute of Physical Chemistry, RWTH Aachen University, Germany

09:00 **hydrogen membrane fuel cell based on glassy electrolyte thin film** C.9. 2
Yoshitaka Aoki, Etsushi Tsuji, Hiroki Habazaki
YA; ET; HH; Faculty of Engineering, Hokkaido University YA; JST, PRESTO

09:20 **Tuning and In-Situ Monitoring of Stress in Proton Conducting Y-doped Barium Zirconate Thin Films** C.9. 3
Aline Fluri, Daniele Pergolesi, Thomas Lippert, Alexander Wokaun
Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland

09:40 **Lowering the operating temperature of SOFCs: Protonic conductors and the role of local structure on understanding ionic conductivity** C.9. 4
Luke Sperrin, Frederic Blanc, Riza Dervisoglu, Gunwoo Kim, John M. Griffin, Lucienne Buannic, Yoshihiro Yamazaki, Sossina M. Haile, Clare P. Grey
Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge, CB2 1EW, UK (Sperrin, Blanc, Dervisoglu, Kim, Griffin, Grey); Department of Chemistry, Stephenson Institute for Renewable Energy, University of Liverpool, Crown Street, Liverpool, L69 7ZD, UK (Blanc); Japan Science and Technology Agency, PRESTO, 4-1-8 Honcho, Kawaguchi, Saitama, 332-0012, Japan (Yamazaki); Materials Science Department, California Institute of Technology, 1200 East California Boulevard, Pasadena, California, 91125, USA (Yamazaki, Haile); Department of Chemistry, State University of New York, Stony Brook, New York, 11790-3400, USA (Dervisoglu, Buannic, Grey)

10:00 **BREAK**

Carbon Conductors : Dr. C. Marchiori and Prof. HG Park

10:30 **Microcroporous carbons for micro-supercapacitors: materials and systems** C.10. 1
P. Huang, P.L. Taberna, and P. Simon
Université Paul Sabatier, CIRIMAT UMR CNRS 5085, 118 route de Narbonne, 31062 Toulouse, France

11:00 **The First Membrane comprising Vertically Aligned Single Walled Carbon Nanotubes** C.10. 2
Seul Ki Youn, Jakob Buchheim, Hyung Gyu Park
Nanoscience for Energy Technology and Sustainability, Department of Mechanical and Process Engineering, ETH Zurich

11:20 **Development of the novel structure for intermediate temperature fuel cell using thin films of proton conductive electrolyte deposited on Pd-plated porous stainless steel substrate** C.10. 3
Tetsuro Kariya 1,2), Hiroki Tanaka 1), Tomoki Hirono 2), Tetsuji Kuse 2), Kiyoshi Uchiyama 3), Mitsunori Henmi 4), Mitsutaka Hirose 4), Isao Kimura 4), Koukou Suu 4), and Hiroshi Funakubo 1)
1) Department of Innovative and Engineered Materials, Tokyo Institute of Technology, Yokohama, Japan; 2) Sanyo Special Steel Co., Ltd, Himeji, Japan; 3) Tsuruoka National College of Technology, Tsuruoka, Japan; 4) ULVAC Inc., Chigasaki, Japan

11:40 **Mixed cation effect in TI2S-Ag2S-GeS-GeS2 glasses: conductivity and tracer diffusion studies** C.10. 4
M. Bokova, I. Alekseev, E. Bychkov
Univ Lille Nord de France, F-59000 Lille, France ULCO, LPCA, EAC CNRS 4493, F-59140 Dunkerque, France ; St. Petersburg University, 199034 St. Petersburg, Russia V.G. Khlopin Radium Institute, 194021 St. Petersburg, Russia; Univ Lille Nord de France, F-59000 Lille, France ULCO, LPCA, EAC CNRS 4493, F-59140 Dunkerque, France

12:00 **Printable thermosetting composite solid-state electrolyte for flexible electrochemical devices** C.10. 5
P. J. Wojcik, L. Pereira, R. Martins, E. Fortunato
Departamento de Ciencia dos Materiais, FCT-UNL, Cenimat – I3N and Cemop-Uninova, Campus de Caparica, 2829-516 Caparica, Portugal

12:20 **Closing Ceremony**

12:45 **LUNCH**

E-MRS 2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM D

Phonons and fluctuations in low dimensional structures

Symposium Organizers:

Clivia M. Sotomayor Torres, ICREA and Catalan Institute of Nanoscience and Nanotechnology ICN2, Bellaterra (Barcelona), Spain

Sebastian Volz, Ecole Centrale Paris, Châtenay Malabry, France

Jouni Ahopelto, Technical Research Centre of Finland VTT, Finland

26 May 2014

09:00 **Welcome and introduction to Symposium D - Clivia M Sotomayor Torres (ICN2)**

Nanoscale Thermal Transport I : Clivia M Sotomayor Torres (ICN2)

09:15 **Ballistic and Coherent Phonon Heat Conduction in Bulk Materials and Nanostructures** **D.1 1**
Gang Chen
Mechanical Engineering Department Massachusetts Institute of Technology Cambridge, MA 02139 USA

09:45 **Nanostructured Ge:Mn thin film: an efficient thermoelectric material** **D.1 2**
Y. I. Liu, D. Tainoff, J. Richard, M. Boukhari, A. Barski, E. Hadji, A. Assy, S. Gomes, O. Bourgeois
Univ. Grenoble Alpes, Inst. NEEL, F-38042 Grenoble, France CNRS, Inst. NEEL, F-38042 Grenoble, France Institut Nanosciences et Cryogénie, SP2M, CEA-UJF, 17 rue des martyrs, 38054 Grenoble, France CETHIL, 9 Rue de la Physique, INSA de Lyon, 69621 Villeurbanne, France

10:00 **Coffee break**

Phonons in Metrology and Biology : Gang Chen (MIT)

10:30 **Picosecond biophononics: application to single-cell biology** **D.2 1**
Thomas Dehoux, Maroun Abi Ghanem, Omar F. Zouani, Marie-Christine Durrieu and Bertrand Audoin
Univ. Bordeaux, CNRS, UMR 5295, Institut de Mecanique et d'Ingenierie, Talence, France ; Univ. Bordeaux, CNRS, UMR 5295, Institut de Mecanique et d'Ingenierie, Talence, France

11:00 **Thermal transport and nanomechanics of nanoscale contacts in scanning thermal microscopy** **D.2 2**
Oleg V. Kolosov, Manuel Pumarol, Benjamin J. Robinson
Physics Department, Lancaster University, Lancaster, LA1 3BE, UK

11:15 **Heat transfer through the water meniscus at nanoscale contacts investigated with Scanning Thermal Microscopy** **D.2 3**
Ali ASSY*, Stéphane LEFEVRE, Pierre-Olivier CHAPUIS, Séverine GOMES
1)Université de Lyon, CNRS 2)INSA-Lyon, CETHIL, UMR5008, F- 69621, Villeurbanne, France 3)Université Lyon 1, CETHIL, UMR5008, F-69621 Villeurbanne cedex, France

11:30 **Optical and electrical thermometry of biased AlGaN/GaN HEMT structures** **D.2 4**
V.V. Strelchuk1, A.V. Naumov1, O.F. Kolomys1, A.S. Romanyuk1, S.A. Vitusevich2 and A.E. Belyaev1
1. V. Lashkarev Institute of Semiconductor Physics of NASU, 03028 Kiev, Ukraine
2. Peter Grünberg Institute, Forschungszentrum Jülich, Jülich, Germany

11:45 **A New Mechanism of Phononic Band Gap in Polymer Brush Particles** **D.2 5**
Elena Alonso-Redondo 1 Dirk Schneider 1 Michael Schmitt 2 Rebecca Sainidou 3 Pascal Rembert 3 Michael Bockstaller 2 Krzysztof Matyjaszewski 2 George Fytas 1,4
1 Max Planck Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany 2 Department of Materials Science and Engineering, Carnegie Mellon University, 5000 Forbes Avenue, 4307 Wean Hall, Pittsburgh 3 Groupe Ondes Acoustiques, Universite du Havre, Site Caucriauville, Pl. R. Schuman, BP 4006, 76610 Le Havre CEDEX, France 4 Department of Materials Science, University of Crete and IESL-FORTH, 71110 Heraklion, Greece

12:00 **Thermal probe for lipid bilayer study** **D.2 6**
Jordane Soussi, Jeff Audiber, Bruno Le Pioufle, Olivier Français, Robert Pansu, Sebastian Volz, Yann Chalopin
Laboratoire EM2C SATIE, Institut d'Alembert, ENS Cachan PPSM, Institut d'Alembert, ENS Cachan

12:30 **Lunch break**

Electron-Phonon Interactions : Javier Rodriguez-Viejo (UAB)

14:00 **Evidence for a large phononic band gap leading to slow hot carrier thermalisation** **D.3 1**
Simon Chung [1], Xiaoming Wen [1], Yu Feng [1], Neeti Gupta [1], Hongze Xia [1], Santosh Shrestha [1], Pyng Yu [2], Jau Tang [2], Gavin Conibeer [1]
[1] Australian Centre for Advanced Photovoltaics, University of New South Wales, Sydney, Australia [2] Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan

14:30 **Effect of electron-phonon coupling on interfacial heat transfer** **D.3 2**
S. Merabia, J. Lombard, F. Detcheverry
CNRS and Université Lyon 1

14:45 **Electron-Phonon Coupling Engineering for Thermal Devices** **D.3 3**
M. Prunnila, D. Gunnarsson, J. Richardson-Bullock, M. J. Prest, T. E. Whall, E. H. C. Parker, L. Donetti, F. Gamiz
VTT Technical Research Centre of Finland; University of Warwick, UK; Universidad de Granada, Spain;

15:00 **Acoustic gain in piezoelectric semiconductors at epsilon-near-zero response** **D.3 4**
Johan Christensen Morten Willatzen
DTU Denmark

15:15 **Experimental determination of the vibrational density of states in metallic nanocrystals** **D.3 5**
Maxime Bayle, Patrick Benzo, Nicolas Combe, Christophe Gatel, Caroline Bonafos, Gérard Benassayag, Robert Carles
CEMES/CNRS - Université de Toulouse, 29 rue Jeanne Marvig 31400 Toulouse, France

15:30 **Coffee break**

Poster Session I : Sebastian Volz (ECP)

16:00 **Phonon decay in silicon nanocrystals: fast phonon recycling** **D.P.1 2**
A. A. Prokofiev, A. N. Poddubny, and I.N. Yassievich
Ioffe Physical-Technical Institute of the Russian Academy of Sciences, 194021 St. Petersburg, Russia

16:00 **Thermal conductivity of modulated Bi2Te3 nanowires** **D.P.1 3**
Konstantinos TERMENTZIDIS and David LACROIX
LEMTA, CNRS UMR-7563, University of Lorraine, Vandoeuvre les Nancy, France

16:00 **Phonon dispersion relations of Sb2S3 and Bi2S3 using the supercell force-constant method** **D.P.1 4**
C. K. Gan [a], K. T. E. Chua [b], and Y. Liu [a]
[a] Institute of High Performance Computing, 1 Fusionopolis Way, #16-16 Connexis, Singapore 138632. [b] Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, USA.

16:00 **Studies of surface optical phonons based on GaN and ZnO nanostructures prepared with "top down" method** **D.P.1 5**
X. H. Wang, S. J. Xu
Department of Physics and HKU-Shenzhen Institute of Research and Innovation (HKU-SIRI), The University of Hong Kong, Pokfulam Road, Hong Kong, China

16:00 **Ballistic-diffusive heat conduction equations in 1D and 2D geometries** **D.P.1 6**
Pierre-Olivier CHAPUIS, Yunxin WANG, Nabil DJATI
Centre for Thermal Sciences, Lyon (CETHIL) CNRS - INSA Lyon - UCBL Campus La Doua - LyonTech 69621 Villeurbanne (Lyon), France

16:00 **Thermally-Active Screw Dislocations in Si Nanowires and Nanotubes** **D.P.1 7**
Shiyun Xiong1, Jihong Ma2, Sebastian Volz1, and Traian Dumitrică2
1 EM2C UPR CNRS 288 École Centrale du Paris, 92295 Châtenay-Malabry, France 2 Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN 55455, USA

16:00 **Thermal conductivity of single DLC nanowire** **D.P.1 8**
L. Jalabert(1), T. Sato(2), G. Valet(2), D. Guo(3), R. Kometani(3), H. Fujita(2), S. Volz(4)
(1) LIMMS-CNRS/IIS-University of Tokyo, Japan (2) IIS, Univ. of Tokyo, Japan (3) Grad. Sch. of Eng., Univ. of Tokyo, Tokyo, Japan (4) LEM2C, Ecole Centrale Paris, Paris, France

16:00 **Effect of Substrates on the Thermal Conductivity of Silicene** **D.P.1 9**
Xiaoliang Zhang1; Ming Hu1,2
1 Institute of Mineral Engineering, Division of Materials Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany; 2 Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

16:00 **Determination of thermal conductivity in (nanostructured) SiGe materials** **D.P.1 10**
Konstanze Hahn, Claudio Melis, Luciano Colombo
Department of Physics, University of Cagliari

16:00 **Study of thermal transport in hydrogenated graphene by non-equilibrium molecular dynamics.** **D.P.1 11**
Giuliana Barbarino, Claudio Melis, Luciano Colombo
Department of Physics - University of Cagliari

16:00 **Monte Carlo simulations of phonon transport in porous semiconducting nanostructures** **D.P.1 12**
V. JEAN, S. FUMERON, K. TERMENTZIDIS, D. LACROIX
Université de Lorraine, LEMTA, CNRS-UR 7563, BP 70239, 54506 Vandoeuvre Cedex, France

16:00 **Vacuum phonon tunneling through Casimir force between two solid materials** **D.P.1 13**
YOUNES EZZAHRI and KARL JOULAIN
Institut Pprime, Université de Poitiers-CNRS-ENSMA 2, Rue Pierre Brousse Bâtiment B25, TSA 41105 86073 Poitiers Cedex 9 France

16:00 **Phonon Fano Antiresonances in Nanostructures with Embedded Planar Defect-Atom Arrays** **D.P.1 14**
Haoxue Han, Yuriy A. Kosevich, Sebastian Volz
Laboratoire d'Energetique, Moleculaire, Macroscopic et Combustion, CNRS UPR 288, Ecole Centrale Paris, Chatenay-Malabry 92295, France

16:00 **Phonon Blocking in Multilayers produced by Pulsed Laser Deposition** **D.P.1 15**
F. Döring, C. Eberl, A.Major, S. Schlenkrich, F. Schlenkrich, M. Lüttich, M. Mansurova, B. Lenk,S. Hoffmann, M. Münzenberg and H. U. Krebs
Institute for Materials Physics, University of Göttingen, Friedrich-Hund-Platz 1, 37077 Göttingen, Germany; 1st Institute of Physics, University of Göttingen, Friedrich-Hund-Platz 1, 37077 Göttingen, Germany; Institute for x-ray physics, University of Göttingen, Friedrich-Hund-Platz 1, 37077 Göttingen, Germany

16:00 **Coherent Electron Transfer in Polyacetylene** **D.P.1 16**
Demetra Psiachos
University of Crete

16:00 **Thermal conductivity of AlN crystals with oxygen impurities: A Molecular Dynamics Study** **D.P.1 17**
Wassim KASSEM, Juliana JARAMILLO-FERNANDEZ, Sebastian VOLZ, Yann CHALOPIN, Emmanuel OLLIER, Michel KAZAN
EM2C, CNRS UPR 288 Ecole Centrale Paris, Chatenay-Malabry; LITEN, CEA, Grenoble; Department of Physics, AUB, Beirut

16:00 **Surface acoustic wave bandgaps for conical pillars on a piezoelectric substrate** **D.P.1 18**
A. Mrabti1, M. Oudich1, A. Akjouj1, Y. Pennec1, B. Djafari-Rouhani1, A Talbi,2 J. Streque2, Y. Du2, A. Soltani2, P. Pernod2
1IEMN, UMR CNRS 8520, Université de Lille 1, 59655 Villeneuve d'Ascq ; 2LIA LEMAC, IEMN, UMR 8520,ECLille, Université de Lille 1, 59655 Villeneuve d'Ascq

16:00 **Covalent Bond-induced thermal transport enhancement at graphene nanoarchitectures** **D.P.1 19**
Xiangjun Liu, Gang Zhang, Yong-Wei Zhang
Institute of High Performance Computing, A-STAR, Singapore; Institute of High Performance Computing, A-STAR, Singapore; Institute of High Performance Computing, A-STAR, Singapore

16:00 **Time Domain Thermoreflectance Measurements of Gold – (Gallium Oxide) – Gallium Nitride Interfaces as a Function of Surface Roughness** **D.P.1 20**
Chester Szwejkowski [1], Kai Sun [2], Costel Constantin [1], Ashutosh Giri [3], Christopher Saltonstall [3], Patrick E. Hopkins [3]
[1] Department of Physics and Astronomy, James Madison University, Harrisonburg, Virginia USA; [2] Department of Materials Science and Engineering, University of Michigan, Ann Arbor, Michigan USA; [3] Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, Virginia USA

16:00 **Has ballistic heat transport by phonons been observed at room temperature?** **D.P.1 21**
A. A. Maznev, K. C. Collins, J. K. Eliason, J. Cuffe, J.A. Johnson, G. Chen, K. A. Nelson
Dept. of Chemistry, MIT; Dept. of Mechanical Engineering, MIT; Dept. of Chemistry, MIT; Dept. of Mechanical Engineering, MIT; Paul Scherrer Institut; Dept. of Mechanical Engineering, MIT; Dept. of Chemistry, MIT

Phononic Crystals : Pascal Ruello (U Le Mans)

09:00 **Hypersonic Phononic Soft Composite Materials** D.4 1
George Fytas
Max Planck Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany and Department of Materials Science, University of Crete and IESL-FORTH, 71110 Heraklion, Greece

09:30 **Elastic field scattered by a resonator in an acoustic metamaterial** D.4 2
B. Bonello1, R. Marchal1, R. Moiseyenko2, Y. Pennec2, B. Djafari-Rouhani2, J. Zhao1, O. Boyko1
1 Université Pierre et Marie Curie - Institut des NanoSciences de Paris (UMR 7588), 4 place Jussieu boîte 840 75252 Paris cedex 05 2 Institut d'Electronique, de Micro-électronique et de Nanotechnologie (IEMN–UMR CNRS 8520) Université Lille1, UFR de Physique, Cité Scientifique, 59652 Villeneuve d'Ascq Cedex, France

09:45 **Bandgap properties and directional propagations of elastic waves in two-dimensional phononic crystals with rotated cross holes** D.4 3
Yan-Feng Wang, Yue-Sheng Wang, Chuanzeng Zhang
Institute of Engineering Mechanics, Beijing Jiaotong University, Beijing 100044, China & Department of Civil Engineering, University of Siegen, Siegen 57068, Germany

10:00 **Coffee break**

10:30 **Coherent thermal phonons in Si-Ge nanoscale phononic crystals** D.4 4
N. Swinteck, K. Muralidharan, P. A. Deymier
University of Arizona; University of Arizona; University of Arizona

10:45 **Transmission and attenuation of Lamb waves through a periodic array of rectangular slits in a plate** D.4 5
Rayisa P. Moiseyenko 1, Yan Pennec 1, Rémi Marchal 2, Bernard Bonello 2 and B. Djafari-Rouhani 1
1 Institut d'Electronique, de Micro-électronique et de Nanotechnologie (IEMN–UMR CNRS 8520) Université Lille1, UFR de Physique, Cité Scientifique, 59652 Villeneuve d'Ascq Cedex, France; 2 Institut des NanoSciences de Paris (INSP–UMR CNRS 7588) Université Pierre et Marie Curie (box 840) 4, place Jussieu 75252 Paris Cedex 05, France

11:00 **Transmission of acoustic phonons in asymmetric phononic crystals and impact on heat conduction** D.4 6
T. T. Trang NGHIEM, Pierre-Olivier CHAPUIS
The Center for Thermal Sciences of Lyon CETHIL UMR 5008, Bât. Sadi Carnot, 9 rue de la Physique, INSA de Lyon, 69621 Villeurbanne cedex

Thermal Rectification : Giuliano Benenti (U Insubria)

11:15 **Heat flow asymmetries in Si-based nanostructured samples** D.5 1
P. Ferrando, A. F.Lopeandia, X. Alvarez, G. Garcia, LL. Abad, M. I. Alonso, M. Garriga, A. R. Goni, J. Rodríguez-Viejo
Nanoamterials and Microsystems group. Dep. Physics. Universitat Autónoma de Barcelona, 08193 Bellaterra, Spain Institut de Microelectrònica de Barcelona-Centre Nacional de Microelectrónica, Campus UAB, 08193 Bellaterra, Spain. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, 08193 Bellaterra, Spain

11:45 **Theoretical thermal rectification in Si and Ge thin films** D.5 2
E. Chávez-Ángel, F. Alzina, C. M. Sotomayor Torres
Institut Catala de Nanociencia i Nanotecnologia, ICN2,Campus UAB, 08193 Bellaterra (Barcelona), Spain Dept. of Physics, Universitat Autònoma de Barcelona, 08193 Bellaterra (Barcelona), Spain; Institut Catala de Nanociencia i Nanotecnologia, ICN2,Campus UAB, 08193 Bellaterra (Barcelona), Spain; Institut Catala de Nanociencia i Nanotecnologia, ICN2,Campus UAB, 08193 Bellaterra (Barcelona), Spain Institucio Catalana de Recerca i Estudis Avançats, ICREA, 08010 Barcelona, Spain

12:00 **Heat transport across a SiGe nanowire axial junction: interface thermal resistance and thermal rectification** D.5 3
R. Rurali (1), X. Cartoixe (2), L. Colombo (3)
(1) Institut de Ciencia de Materials de Barcelona (ICMAB-CSIC), Spain (2) Universitat Autonoma de Barcelona, Spain (3) Universita di Cagliari, Italy

12:15 **Photonics for Radiative Thermal Rectification** D.5 4
Elyes Nefzaoui, Jérémie Drevillon, Younès Ezzahri, Karl Joulain
Institut Pprime (CNRS) - Université de Poitiers - ENSMA / CETHIL (CNRS) - INSA Lyon, Institut Pprime (CNRS) - Université de Poitiers - ENSMA, Institut Pprime (CNRS) - Université de Poitiers - ENSMA, Institut Pprime (CNRS) - Université de Poitiers - ENSMA

12:30 **Lunch break**

Coherent Acoustic Phonons and Phonon Sources : Thomas Dekorsy (U Konstanz)

14:00 **Coherent Acoustic Phonons and Phonon Sources** D.6 1
Bernard Perrin, Romain Legrand, Agnès Huynh
Institut des NanoSciences de Paris, UMR 7588 CNRS - Université Pierre & Marie Curie 140 Rue de Lourmel, 75015 Paris – Fr

14:30 **Coherent acoustic phonons emission driven by hot electrons** D.6 2
M. Lejman, V. Shalagatskyi, O. Kovalenko, T. Pezeril, V. Temnov, P. Ruello
Institut des Molécules et Matériaux du Mans, UMR 6283 CNRS, Université du Maine

14:45 **Boundary Limited Thermal Conductivity of Crystalline Rods Oriented near Phonon Focusing Caustics** D.6 3
A.G. Every1 , A.A. Maznev2
1School of Physics, University of the Witwatersrand, PO Wits 2050, Johannesburg, South Africa 2Department of Chemistry, Massachusetts Institute of Technology, Cambridge MA 02139, USA

15:00 **Measurement of coherent single-pass amplification of sub-Terahertz phonons** D.6 4
C L Poyser, A V Akimov, R P Campion, A J Kent
School of Physics and Astronomy, University of Nottingham, University Park, Nottingham NG7 2RD UK

15:15 **Modeling of high-frequency electromechanical instability of graphene nanoribbons** D.6 5
M.Eriksson, L.Gorelik, M.Voinova
Chalmers University of Technology, Goteborg, Sweden

15:30 **Coffee break**

Thermoelectricity and Energy Conversion in the nanoscale : George Fytas (FORTH and MPI)

16:00 **Efficient reduction of thermal conductivity in silicon using phononic-engineered membranes** D.7 1
1,2V. Lacatena, 1,2M. Haras, 2,J.-F. Robillard, 1,S. Monfray, 1,T. Skotnicki, 2,E. Dubois
1: STMicroelectronics 850, rue Jean Monnet, F-38926 Crolles FRANCE 2: IEMN UMR CNRS 8520, Institut d'Electronique, de Microélectronique et de Nanotechnologie, Avenue Poincaré, F-59652 Villeneuve d'Ascq FRANCE

16:30 **Characterization of a thin film Si-based planar u-TEG** D.7 2
A.F. Lopeandía#; A.P. Perez-Marín#; Ll. Abad&; P. Ferrando#; G. Garcia#; J.Rodríguez-Viejo#;
#Grupo de Nanomateriales y Microsistemas, Dep. Física, Universitat Autónoma de Barcelona, 08193 Bellaterra, Spain. &Instituto de Microelectrónica de Barcelona-Centre Nacional de Microelectrónica, Campus UAB, 0893 Bellaterra, Spain.

16:45 **Thermal Conductivity Suppression in Thin Silicon Nanowires and Strategies for its Reduction in Larger-Diameter Wires** **D.7 3**
A. Cowley (1), D. Byrne (1), N. Bennett (1,2)
(1) Nanomaterials Processing Lab., School of Electronic Engineering, Dublin City University, Dublin 9, Ireland. (2) Institute of Mechanical, Process and Energy Engineering, School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, EH14 4AS, United Kingdom.

17:00 **Thermoelectric Properties of New Graphene Allotropes** **D.7 4**
Tao Ouyang and Ming Hu
Institute of Mineral Engineering (GHI), Division of Materials Science and Engineering, RWTH Aachen University, Mauerstrasse 5, 52064 Aachen, Germany

17:15 **Increasing thermoelectric efficiency: Dynamical models unveil microscopic mechanisms** **D.7 5**
Giuliano Benenti
University of Insubria, Italy

28 May 2014

Optomechanics : Achim Kittel (U Oldenburg)

09:00 **Cavity optomechanics: controlling phonons with photons at the quantum level** **D.8 1**
Tobias J. Kippenberg
Institute of Condensed Matter Physics, EPFL Switzerland

09:30 **Investigation of optomechanical interactions in two-dimensional phoxonic crystal cross-slot cavities and hetero-structure cavities** **D.8 2**
Tian-Xue Ma, Yue-Sheng Wang, Chuanzeng Zhang
Institute of Engineering Mechanics, Beijing Jiaotong University, Beijing 100044, PR China; Institute of Engineering Mechanics, Beijing Jiaotong University, Beijing 100044, PR China; Department of Civil Engineering, University of Siegen, Siegen, D-57068, Germany

09:45 **Theory and simulation of optomechanical effects in phoXonic crystals** **D.8 3**
Said El-Jallal1,2, Mourad Oudich1, Yan Pennec1, Abdelkader Makhoute2, Jordi Gomis-Bresco3, Daniel Navarro-Urrios 3, Clivia M. Sotomayor Torres3, Alejandro Martínez4, Bahram Djafari-Rouhani1
1Institut d'Electronique, de Microélectronique et de Nanotechnologie, UMR CNRS 8520, Université Lille 1, Villeneuve d'Ascq, France ; 2PRILM, Université de Moulay Ismail, Faculté des sciences, Meknès, Morocco ; 3Catalan Institute of Nanotechnology, Campus UAB, 08193 Bellaterra (Barcelona), Spain; 4Nanophotonics Technology Center, Universidad Politécnica de Valencia, Spain.

10:00 **Coffee break**

Theoretical and Computational Methods : Bahram Djafari-Rouhani (IEMN)

10:30 **Theory of interface and anharmonic phonon interactions in nanocomposite materials** **D.9 1**
G. P. Srivastava, I. O. Thomas*
School of Physics, University of Exeter, Exeter EX4 4QL, UK *Present address: School of Physics, University of Durham, Durham DH1 3LE, UK

11:00 **Cross-mode correlations, localized modes, and heat conduction in anharmonic oscillator chains** **D.9 2**
Maxime Gill-Comeau, Laurent J. Lewis
Département de physique, Université de Montréal

11:15 **Phonons at amorphous/crystalline silicon interfaces** **D.9 3**
Konstantinos TERMENTZIDIS 1, Arthur FRANCE-LANORD 1, Etienne BLANDRE 1, Samy MERABIA 2, Tristan ALBARET 2 and David LACROIX 1
1 LEMTA, CNRS UMR-7563, University of Lorraine, Vondoeuvre les Nancy, France 2 ILM, CNRS, University of Lyon 1, Lyon, France

11:30 **Approach-to-equilibrium molecular dynamics for thermal conductivies and boundary conductances** **D.9 4**
P. L. Palla, E. Lampin, P.-A. Francioso and F. Cleri
IEMN UMR CNRS 8520 and University of Lille - CS 60069 - 59625 Villeneuve d'Ascq Cedex- France

11:45 **Boundary scattering of phonons: what is the specularity of a randomly rough surface?** **D.9 5**
A. A. Maznev
Dept. of Chemistry, MIT

12:00 **Numerical calculation of optical phonon decay rate in InN/GaN MQW and its bulk counterparts** **D.9 6**
Hongze Xia, Rob Patterson, Yu Feng, Tran Smyth, Yuanxun Liao, Pengfei Zhang, Xi Dai, Neeti Gupta, Xiaoming Wen, Simon Chung, Xuguang Jia, Lingfeng Wu, Binesh Puthen-Veettil, Shujuan Huang, Santosh Shrestha, Gavin Conibeer
The University of New South Wales

12:15 **Size effects in molecular dynamics simulations of thermal conductivity in isotope doped silicon** **D.9 7**
R. Frieling(1), M. Radek(1), H. Bracht(1), D. Wolf(2)
(1) University of Münster, Institute Of Materials Physics, D-48149 Münster, Germany; (2) University of Duisburg-Essen, Physics Department, D-47048 Duisburg, Germany

12:30 **Lunch break**

Poster Session II : Jouni Ahopelto (VTT)

14:00 **Exciton-phonon coupling in monodisperse single crystalline anatase TiO2 nanotubes** **D.P.2 1**
Hyunjun Yoo, Myungjun Kim, Hyunchul Kim, Seonhee Lee, Changdeuck Bae, Hyunjung Shin
Dept. of Energy Science, Sungkyunkwan University, Suwon 440-746, Korea

14:00 **Thermal conductivity of suspended GeTe and Ge2Sb2Te5 nanowire measured by Raman spectroscopy with laser heating** **D.P.2 2**
Sungjin Park1, Dambi Park1, Kwangsik Jeong1, M. –H. Cho1*, Y Yi1, H. Kim2 and Bongyoung Yoo3
1 Institute of Physics and Applied Physics, Yonsei University, Seoul, 120-749 Korea,2 School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, Korea, 3 Department of Materials Engineering Hanyang University, Ansan 426-791, Korea

14:00 **Engineering the Thermal Properties of CrAlSiN PVD Hard Coatings for Machine Tool Applications** **D.P.2 3**
M. K. Samani 1,2,, L. Loisel 1,2,3, X. Z. Ding 4, N. Khosravian 1, G Chen 5, B. K. Tay 1,2,
1 School of Electrical and Electronic Engineering, Nanyang Technological University, Nanyang Avenue, Singapore 639798 2 CINTRA CNRS/NTU/THALES, UMI 3288, Research Techno Plaza, 50 Nanyang Drive, Border X Block, Level 6, Singapore 637553 3LPICM (Laboratoire de Physique des Interfaces et des Couches Minces) UMR 7647, CNRS-Ecole Polytechnique, 91128 Palaiseau Cedex, France 4 Surface Technology Group, Singapore Institute of Manufacturing Technology, 71 Nanyang Drive, Singapore 638075 5 BC Photonics Technological Company 5255 Woodwards Rd., Richmond, BC V7E 1G9 Canada

14:00 **A 1D PhoXonic Crystal** **D.P.2 4**
J. Gomis-Bresco1, D. Navarro-Urrios1, M. Oudich2, S. El-Jallal2,3, A. Griol4, D. Puerto4, E. Chavez1,5, Y. Pennec2, B. Djafari-Rouhani2, F. Alzina1, A. Martinez4 and C. M. Sotomayor Torres1, 6.
1 ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain 2IEMN, Universite de Lille 1, Villeneuve d'Ascq, France 3 PRILM, Universite Moulay Ismail, Faculte des sciences, Meknes, Maroc 3Nanophotonics Technology Center, Universitat Politecnica de Valencia, Valencia, Spain 5 Dept. of Physics, Universitat Autonoma de Barcelona, 08193 Bellaterra (Barcelona), Spain. 6 ICREA - Institucio Catalana de Recerca i Estudis Avancats, 08010 Barcelona, Spain

14:00 **Microscopic description of coherent transport by thermal phonons** **D.P.2 5**
Benoit Latour, Sebastian Volz, Yann Chalopin
Laboratoire EM2C, Ecole Centrale Paris

14:00 **Steady State and Modulated Temperature Profiles in a Two-layer System Predicted by the Phonon Boltzmann Transport Equation** **D.P.2 6**
J. Ordonez-Miranda (1), Thomas Antoni (1,2), Yann Chalopin (1), and Sebastian Volz (1)
(1) Laboratoire d'Energétique Moléculaire et Macroscopique, Combustion, UPR CNRS 288, Ecole Centrale Paris, Grande Voie des Vignes, 92295 Chatenay Malabry, France. (2) Ecole Centrale Paris, Laboratoire de Photonique Quantique et Moléculaire, CNRS (UMR 8537), Ecole Normale Supérieure de Cachan, Grande Voie des Vignes, F-92295 Chatenay-Malabry cedex, France.

14:00 **Acousto-optic couplings in two-dimensional Lithium Niobate phoxonic crystal** **D.P.2 7**
Quentin ROLLAND. Samuel DUPONT. Joseph GAZALET. Jean-Claude KASTELIK
Institut d'Electronique, de Microelectronique et de Nanotechnologie, UMR CNRS 8520, Universite de Valenciennes-Hainault-Cambresis, Valenciennes, France

14:00 **Conversion of Laser Pulse Optical Energy to Photo-acoustic Wave in nm-Scale Layered TlGaSe2 Crystals** **D.P.2 8**
K. Gulbinas (1), V. Grivickas(1), P. Grivickas (2), J. Linnros (3)
(1) Institute of Applied Research, Vilnius University, Vilnius, Lithuania; (2) Institute for Shock Physics, Department of Physics and Astronomy, Washington State University, Pullman, Washington, USA (3) School of ICT, Royal Institute of Technology, Kista-Stockholm, Sweden;

14:00 **Modelling of the phonon attenuation in Si-based nanostructures** **D.P.2 9**
E. Chavez-Angel, R.A. Zarate, F. Alzina, C. M. Sotomayor Torres
Institut Catala de Nanociencia i Nanotecnologia, ICN2, Campus UAB, 08193 Bellaterra (Barcelona), Spain. Dept. of Physics, Universitat Autonoma de Barcelona, 08193 Bellaterra (Barcelona), Spain; Departamento de Fisica, Universidad Catolica del Norte, Av. Angamos 0610, Antofagasta, Chile; Institut Catala de Nanociencia i Nanotecnologia, ICN2, Campus UAB, 08193 Bellaterra (Barcelona), Spain; Institut Catala de Nanociencia i Nanotecnologia, ICN2, Campus UAB, 08193 Bellaterra (Barcelona), Spain. Institucio Catalana de Recerca i Estudis Avancats, ICREA, 08010 Barcelona, Spain.

14:00 **Simultaneously resonant optical and elastic waves for enhanced acousto-optic interaction** **D.P.2 10**
N. Papanikolaou(1), E. Almpanis(1), N. Stefanou(2)
(1) Department of Microelectronics, IAMPPNM, NCSR «Demokritos», GR-15310 Athens, Greece. (2) University of Athens, Section of Solid State Physics, Panepistimioupolis, GR-15784, Athens, Greece.

14:00 **Scanning Thermal Microscopy studies of 2D materials** **D.P.2 11**
Benjamin J. Robinson, Peter D. Tovee, Oleg V. Kolosov
Physics Department, Lancaster University, Lancaster, LA1 4YB, UK

14:00 **Spectral Detection of Surface Phonon-Polaritons propagating in Micro-sized Glass Tubes** **D.P.2 12**
Laurent Tranchant1, J. Ordonez-Miranda1, Beomjoon Kim2, Thomas Antoni1,3, Yann Chalopin1 and Sebastian Volz1
1 Laboratoire d'Energetique Moleculaire et Macroscopique, Combustion, UPR CNRS 288, Ecole Centrale Paris, Grande Voie des Vignes, 92295 Chatenay Malabry, France. 2 CIRMM, Institute of Industrial Science, the University of Tokyo, Japan. 3 Ecole Centrale Paris, Laboratoire de Photonique Quantique et Moleculaire, CNRS (UMR 8537), Ecole Normale Superieure de Cachan, Grande Voie des Vignes, F-92295 Chatenay-Malabry cedex, France.

14:00 **Study of thermoelectric effect in silicon nanowires within a full-band Monte Carlo approach** **D.P.2 13**
Jérôme Larroque, Jérôme Saint-Martin
Institut d'Electronique Fondamentale, CNRS UMR 8622, Université Paris-Sud, Orsay, France

14:00 **Thermal properties of silver nanowire networks** **D.P.2 14**
S. Sorel1, M. Lagrange2, D. P. Langley2,3, N. D. Nguyen3, Y. Bréchet4, D. Bellet2, J. N. Coleman1
1 School of Physics, CRANN and AMBER, Trinity College Dublin, Dublin 2, Ireland. 2 Laboratoire des Matériaux et du Génie Physique CNRS - Grenoble INP, 3 parvis Louis Néel CS 50257, 38016 Grenoble, France. 3 Laboratoire de Physique des Solides, Interfaces et Nanostructures Département de Physique, Université de Liège Allée du 6 Août 17, B-4000 Liège, Belgique. 4 Laboratoire de Science et Ingénierie des Matériaux et des Procédés CNRS - Grenoble INP, 1130 rue de la piscine 38042 Saint-Martin d'Hères, France.

14:00 **The Effect of Microstructure on the Thermal Conductivity of Nanoscale Polycrystalline AlN Thin-Films** **D.P.2 15**
Juliana Jaramillo; Wassim Kassem; Yann Chalopin; Emmanuel Ollier; Sebastian Volz
Laboratoire des Composants pour la Conversion de l'Energie, CEA; Laboratoire d'Energetique Moleculaire et Macroscopique, CNRS, Ecole Centrale Paris; Laboratoire d'Energetique Moleculaire et Macroscopique, CNRS, Ecole Centrale Paris; Laboratoire des Composants pour la Conversion de l'Energie, CEA; Laboratoire d'Energetique Moleculaire et Macroscopique, CNRS, Ecole Centrale Paris

14:00 **Thermal corrections to the calculation of the thermal conductivity in suspended structures** **D.P.2 16**
P. Ferrando, A. F.Lopeandía, J. Rodríguez-Viejo
Nanomaterials and Microsystems Group. Physics dep. Universitat Autónoma de Barcelona. 08193 Bellaterra, Spain.

14:00 **Monte Carlo simulation of micro-ribbon thermal conductivity at very low temperatures** **D.P.2 17**
Aymeric Ramiere (1), Jay Amrit (1), Sebastian Volz (2)
(1)Laboratoire d'Informatique pour la Mécanique et les Sciences de l'Ingénieur UPR CNRS 3251,Université Paris-Sud, Rue John von Neumann,F-91403 Orsay, France; (2)Energétique Moléculaire et Macroscopique,Combustion, UPR CNRS 288, Ecole Centrale Paris, Grande Voie des Vignes F-92295 Chatenay-Malabry, France

14:00 **Temperature dependence of Raman scattering in wurtzite GaAs nanowires: the functionalization effect with Au nanoparticles** **D.P.2 18**
M. P. Leitão (2), M. R. Correia (1), B. P. Falcão (1), J. P. Leitão (1), Manuel Martins (2), Graça Pato, Sérgio Pereira (2), A. G. de Oliveira (3), F. M. Matinaga (3), J. C. González (3)
(1)Departamento de Física and I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal; (2)CICECO and Departamento de Física, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal; (3) Departamento de Física, Universidade Federal de Minas Gerais, 30123-970 Belo Horizonte, Minas Gerais, Brazil

14:00 **Heat propagation and thermal phonon dynamics in group IV nanostructures** **D.P.2 19**
M. R. Wagner, J. S. Reparaz, J. Gomis-Bresco, E. Chávez-Ángel, B. Graczykowski, F. Alzina, and C. M. Sotomayor Torres
ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain

14:00 **Lifetime of high-order sub-THz thickness resonances in thin Si membranes** **D.P.2 20**
A. A. Maznev, F. Hofmann, J. Cuffe, J. K. Eliason, K. A. Nelson
Dept. of Chemistry, MIT; Dept of Engineering Science, University of Oxford; Dept. of Mechanical Engineering, MIT; Dept. of Chemistry, MIT; Dept. of Chemistry, MIT

14:00 **A NOVEL APPROACH TO NANOSTRUCTURING OF SnxSy THERMOELECTRIC THIN-FILMS USING LOW-COST SPRAY-DEPOSITION TECHNIQUE** **D.P.2 21**
A. Ivaturi1, Firoz Alam2, Neetesh Kumar2, P. R. Bobbili1, N. Bennett1, J.-W. Bos3, V. Dutta2 and H. M. Upadhyaya1
1Energy Conversion Laboratory, Institute of Mechanical Process and Energy Engineering, School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, EH14 4AS, United Kingdom; 2Photovoltaic Laboratory, Centre for Energy Studies, Indian Institute of Technology Delhi, Hauz Khas, New Delhi 110016, India; 3Institute of Chemical Sciences and Centre for Advanced Energy Storage and Recovery, School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, EH14 4AS, United Kingdom.

14:00 **A Langevin approach to heat generated by Magnetic Nanoparticles** **D.P.2 22**
Yann Chalopin, M. L. Beoutis, M. Devaud, S. Volz, F. Gazeau.
Laboratoire EM2C - Ecole Centrale Paris / CNRS. Laboratoire MSC - Univ. Paris Diderot / CNRS

14:00 **POLYACETYLENE: RELATION OF THEORIES OF ELECTRICAL CONDUCTIVITY AND CHEMICAL REACTION IN THE SOLID** **D.P.2 23**
K. BENOUMSAAD1; D. SAMSAR2; ILHEM. R. KRIBA2; A. DJEBAILI2
1 Plasma Laboratory - Faculty of Sciences – Department of Physics- University of Batna- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria,

16:00 **PLENARY SESSION**

Radiative Heat Transfer : Thomas Dehoux (U Bordeaux)

09:00 **Manipulating the near field heat transfer between nanoscale objects by ultrathin layers** **D.10 1**
A. Kittel, D. Hellmann, K. Kloppstech, N. K?nne, and L. Worbes
Physics Institute, University of Oldenburg, Germany

09:30 **Application of the nonlocal macroscopic response theory of the dielectric function to the study of near field radiative heat transfer between two thermostatic dielectric materials** **D.10 2**
Farah SINGER, Younès EZZAHRI, Karl JOULAIN
Institut Pprime, CNRS-Université de Poitiers-ENSMA, ENSIP, Département Fluides, Thermique, Combustion, Bâtiment de mécanique, 2 rue Pierre Brousse, F-86000 Poitiers.

09:45 **Heat Transfer between Polar Nanoparticles in the sub-10nm Gap Range** **D.10 3**
Shiyun Xiong*, Kaike Yang**, Yuriy A. Kosevich*, Yann Chalopin*, Roberto D'Agosta**, Pietro Cortona***, Sebastian Volz*
*Laboratoire d'Energetique Moleculaire et Macroscopique, Combustion, UPR CNRS 288, Ecole Centrale Paris, 92295, Chatenay-Malabry, France **Nano-Bio Spectroscopy Group and ETSF Scientific Development Centre Departamento Fisica de Materiales, Universidad del Pais Vasco UPV/EHU, E-20018 San Sebastian, Spain ***Laboratoire Structures, Proprietes et Modelisation des Solides, UMR CNRS 8580, Ecole Centrale Paris, 92295, Chatenay-Malabry, France

10:00 **Coffee break**

Nanoscale Thermal Transport II : Gyaneshwar Srivastava (U Exeter)

10:30 **Manipulation of heat transport in two-dimensional nanostructures** **D.11 1**
Davide Donadio
MPI for Polymer Research Ackermannweg 10 55128 Mainz – Germany

11:00 **Heat Transport along Nanofilms and Nanowires due to Surface Phonon-Polaritons** **D.11 2**
Jose Ordonez-Miranda (1), Laurent Tranchant (1), Beomjoon Kim (1), Thomas Antoni (1,3), Yann Chalopin (1) and Sebastian Volz (1)
(1) Laboratoire d'Energétique Moléculaire et Macroscopique, Combustion, UPR CNRS 288, Ecole Centrale Paris, Grande Voie des Vignes, 92295 Chatenay Malabry, France. (2) CIRMM, Institute of Industrial Science, the University of Tokyo, Japan. (3) Ecole Centrale Paris, Laboratoire de Photonique Quantique et Moléculaire, CNRS (UMR 8537), Ecole Normale Supérieure de Cachan, Grande Voie des Vignes, F-92295 Châtenay-Malabry cedex, France.

11:15 **Thermal conductivity of encased graphene** **D.11 3**
Jia Yang, Aaron J. Schmidt
Boston University

11:30 **Thermal conductivity and thermal field distribution determination in free-standing Si and Ge membranes** **D.11 4**
J. S. Reparaz, E. Chavez-Angel, M. R. Wagner, A. Shchepetov, M. Prunnila, J. Ahopelto, P. Vaccaro, I. Alonso, M. Garriga, A. R. Goñi, F. Alzina, and C. M. Sotomayor Torres
1: ICN2 – Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra, Barcelona, Spain; 2: Department of Physics, UAB, 08193 Bellaterra, Barcelona, Spain; 3: VTT Technical Research Centre of Finland, PO Box 1000, 02044 VTT, Espoo, Finland; 4: Instituto de Ciencia de Materiales de Barcelona (ICMAB); 5: Institucion Catalana de Recerca i Estudis Avancats (ICREA), 08010 Barcelona, Spain;

11:45 **Measurement of phonon damping by nanostructures** **D.11 5**
A. Al Mohtar, A. Bruyant, M. Kazan, J. Vaillant, A. Khoury.
University of Technology de Troyes, ICD-LNIO and STMR - UMR6279 CNRS, France; Applied Physic Laboratory (LPA), Faculty of Sciences II, EDST, Lebanese University, Lebanon; Department of Physics, American University of Beirut, Lebanon;

12:00 **The thermal conductivity of modulated nanowires by Monte Carlo estimation of the phonon free paths** **D.11 6**
Nikolaos Cheimarios 1,2 ; Xanthippi Zianni 1,3,4; Patrice Chantrenne 4
1 Dept. of Applied Sciences, Technological Educational Institution of Central Greece, 34 400 Psachna, Greece 2 School of Chemical Engineering, National Technical University of Athens, 15780, Athens, Greece 3 Dept. of Microelectronics, IAMPPNM, NCSR 'Demokritos', 153 10 Aghia Paraskevi, Greece 4 Universite de Lyon, INSA de Lyon, MATEIS UMR CNRS 5510, Villeurbanne 69621, France

12:15 **Tailoring thermal conductivity of graphene via defect-and-molecular engineering** **D.11 7**
Stefan Bringuier, Jean-François Robillard, Pierre Deymier, Krishna Muralidharan
Department of Materials Science and Engineering, University of Arizona, Tucson, AZ 85721; Institut d'Electronique, de Microélectronique et de Nanotechnologie, UMR CNRS 8520, Cité Scientifique, 59652 Villeneuve d'Ascq Cedex, France; Department of Materials Science and Engineering, University of Arizona, Tucson, AZ 85721; Department of Materials Science and Engineering, University of Arizona, Tucson, AZ 85721

12:30 **End of Symposium D**

E-MRS 2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM E

Defect-induced effects in nanomaterials

Symposium Organizers:

Flyura Djurabekova, University of Helsinki, Finland

Eugene Kotomin, University of Latvia, Latvia

Mark C. Ridgway, Australian National University, Australia

Nikolai A. Sobolev, Universidade de Aveiro and I3N, Portugal

Published in Physica Status Solidi C

26 May 2014

Properties of graphene : Arkady Krasheninnikov

09:00 **Defects in two-dimensional materials and nanoparticles -- Theory and microscopy** EO1 1
Sokrates T. Pantelides, Stephen J. Pennycook
Department of Physics and Astronomy, Vanderbilt University, Nashville, TN, USA and Oak Ridge National Laboratory, Oak Ridge, TN USA; University of Tennessee, Knoxville, TN USA

09:30 **Scanning Probe Microscopy Characterization of Grain Boundaries in CVD Graphene and Nanolithography** EO1 2
L. P. Biró1, 4, L. Tapasztó1, 4, G. Magda1, 4, P. Nemes-Incze1, 4, G. Dobrik1, 4, P. Vancsó1, 4, Z. Osváth 1, 4, G. I. Márk1, 4, Ph. Lambin2, X. Jin3, 4, Y. S. Kim3, 4, C. Hwang3, 4
1Institute of Technical Physics and Materials Science, Research Centre for Natural Sciences, 1525 Budapest, PO Box 49, Hungary, http://www.nanotechnology.hu/; 2Department of Physics of Matter and Radiations, University of Namur (FUNDP), 61 Rue de Bruxelles, B-5000 Namur, Belgium; 3Center for Nano-metrology Division of Industrial Metrology Korea Research Institute of Standards and Science, 267 Gaejeong-ro, Yuseong-Gu, Daejeon 305-340, Republic of Korea; 4Korean-Hungarian Joint Laboratory for Nanosciences (KHJLN), P.O. Box 49, 1525 Budapest, Hungary

09:45 **Dirac-states in a Ta-doped TiO2 nanowire: basis for a new type of high-speed field effect transistors.** EO1 3
Peter Deák,1 Bálint Aradi,1 Alessio Gagliardi,1,2 Huynh Anh Huy,1 Gabriele Penazzi,1 Binghai Yan,1 Tim Wehling,1,3 and Thomas Frauenheim1
1 Bremen Center for Comp. Mater. Sci., University of Bremen, P.O. Box 330440, D-28334 Bremen, Germany; 2 Department of Electronic Engineering, University of Rome “Tor Vergata”, via del Politecnico 1, I-00133 Roma, Italy; 3 Institute for Theoretical Physics, University of Bremen, Otto-Hahn-Allee 1, D-28359 Bremen, Germany

10:00 **Break**

Two-dimensional materials : Sokrates Pantelides (to be confirmed)

10:30 **Native and irradiation-induced defects in two-dimensional materials** EO2 1
Arkady V. Krasheninnikov
Department of Applied Physics, Aalto University, Finland

11:00 **Excitons and stacking order in h-BN** EO2 2
A. Zobelli, R. Bourellier, M. Amato, L.H.G. Tizei, C. Giorgetti, A. Gloter, M.I. Heggie, K. March, O. Stephan, L. Reining, M. Kociak
Laboratoire de Physique des Solides, Univ. Paris-Sud, CNRS UMR 8502, F-91405, Orsay, France; Laboratoire des Solides Irradies, Ecole Polytechnique, Route de Saclay, F-91128 Palaiseau and European Theoretical Spectroscopy Facility (ETSF), France; Department of Chemistry, University of Surrey, Guildford GU2 7XH, United Kingdom

11:15 **Enhancement of carrier mobility in high dielectric 2D MoO(3-x)** EO2 3
Sivacarendran Balendhran,* Sumeet Walia, Jian Zhen Ou, Sharath Sriram, Madhu Bhaskaran, and Kourosh Kalantar-zadeh,
Functional Materials and Microsystems Research Group, School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia

11:30 **Formation of defects and defect healing during carbon nanotube and graphene growth** EO2 4
Feng Ding, Qinghong Yuan, Lu Wang
Institute of Textiles and Clothing, Hong Kong Polytechnic University, Hong Kong S.A.R., China

12:00 **Lunch**

Nanoheterostructures : Andre Vantomme

14:00 **Defect-Induced Growth and Electronic Properties of Quantum Dot Molecules** EO3 1
A.V.Dvurechenskii
Rzhanov Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Science, Novosibirsk State University

14:30 **Thermal characteristics of tapered SiGe nanowires** EO3 2
Eun Kyung Lee1, Jong Woon Lee2, Junho Lee3, Won-Jae Joo4, Sung Jin Kim1, Sungwoo Hwang4, Dongmok Whang2, Byoung Lyong Choi4
1. Samsung Electronics, Samsung Advanced Institute of Technology, CAE Group, Korea 2. Sungkyunkwan University, School of Advanced Materials Science and Engineering, Korea 3. Samsung Electronics, Samsung Advanced Institute of Technology, AE Group, Korea 4. Samsung Electronics, Samsung Advanced Institute of Technology, Nano Electronics Lab, Korea

14:45 **Formation of interconnected Ge nanostructures in SiO2 matrix by in-situ annealing during co-sputtering of Ge and SiO2** EO3 3
B. Altuntas*1,2, S. Ilday2,3, M. Yilmaz2,4, R. Turan1,2, S. Cosentino5, R. Raciti5, I. Crupi5, A. Mio5, G. Nicotra5, A. Terrasi5, S. Mirabella5
1Department of Physics, Middle East Technical University, 06800, Ankara, TURKEY 2Center for Solar Cell Research and Applications (GÜNAM), Middle East Technical University, 06800, Ankara, TURKEY 3Department of Micro and Nanotechnology, Middle East Technical University, 06800, Ankara, TURKEY 4Department of Physics, Necmettin Erbakan University, 42090, Konya, TURKEY 5Dipartimento di Fisica e Astronomia and CNR-INFM, MATIS, Università di Catania, I-95123, Catania, ITALY

15:00 **Nanopore formation induced by ion-implantation in Ge: optical properties** EO3 4
D.Cavalcoli (1), B.Fraboni (1), G. Impellizzeri (2), L. Romano (2), E.Scavetta (3), M. G. Grimaldi (2)
(1) Dipartimento di Fisica e Astronomia, Università di Bologna,Viale Berti Pichat 6/2, 40127 Bologna, Italy (2) CNR-IMM- MATIS and Dipartimento di Fisica e Astronomia, Università di Catania,Via S. Sofia 64, 95123 Catania, Italy (3) Dipartimento di Chimica Industriale ‘Toso Montanari’, Università di Bologna, Viale Risorgimento 4, 40136 Bologna, Italy

15:15 **Scanning tunneling microscopy of GaAs/GaAsSB Nanowires** EO3 5
Adrián Díaz, Pierre Capiod, M. Berthe, Tao Xu, Jean-Philippe Nys, I. Lefebvre, Ph. Caroff, Ph. Ebert, Bruno Grandidier
Institut d’Electronique, de Microélectronique et de Nanotechnologie (IEMN), CNRS, UMR,8520, Département ISEN, 41 bd Vauban, 59046 Lille Cedex, France ; Key Laboratory of Advanced Display and System Application, Shanghai University, 149 Yanchang Road, Shanghai 200072, People’s Republic of China; Deparment of Electronic Materials Engineering, Research School of Physics and Engineering, The Australian National University, Canberra ACT 0200, Australia; Peter Grünberg Institut, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany.

15:30 **Break**

Poster session I : Aurélien Debelle and Tiziana Cesca

16:00 **Selective Decoration of Au Nanoparticles on Monolayer MoS2 Single Crystals** EP1 1
Limin Jin
the Hong Kong Polytechnic University

16:00 **Defects and substitutional doping in monolayer MoS2** EP1 2
U. Schwingenschlogl, Y.C. Cheng
KAUST, PSE Division, Thuwal 23955-6900, KSA

16:00 **Colloidal Si and SiGe alloy nanocrystals with heavily B and P doped shells** EP1 3
Minoru Fujii, Hiroshi Sugimoto, Takashi Kanno, Masataka Hasegawa, and Kenji Imakita
Department of Electrical and Electronic Engineering, Graduate School of Engineering, Kobe University, Rokkodai, Nada, Kobe 657-8501, Japan

16:00 **Optical property changes and band-gap calculations of diamond and sapphire produced by ion implantation** **EP1 4**
Jae-Won Park, Jaeun Kim, Jun-Hyung Cho
Korea Atomic Energy Research Institute, Yuseong-Gu, Daejeon, 305-353, Korea

16:00 **Defect Analysis in Graphenic Materials with Coupled Double Resonance Raman Scattering** **EP1 5**
Stephane NEUVILLE
TCE

16:00 **Adsorption and diffusion of Thorium and Uranium adatoms on graphene nanoribbons: A first principle study** **EP1 6**
Cheng Cheng and Han Han
Shanghai Institute of Applied Physics, Chinese Academy of Sciences; Key Laboratory of Nuclear Radiation and Nuclear Energy Technology, Chinese Academy of Science

16:00 **Negative Quantum Capacitance Induced by Midgap States in Single-layer Graphene** **EP1 7**
Lin Wang, Yang Wang, Xiaolong Chen, Wei Zhu, Chao Zhu, Zefei Wu, Yu Han, Mingwei Zhang, Wei Li, Yuheng He, Wei Xiong, Kam Tuen Law, Dangsheng Su, Ning Wang
Department of Physics and the William Mong Institute of Nano Science and Technology, The Hong Kong University of Science and Technology, Hong Kong, China; Department of Physics and Astronomy, California State University, Northridge, California 91330, USA; Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China

16:00 **Local Cathode Luminescence Resonant Peak in Hybrid Organic-Nanocrystal Systems** **EP1 8**
A. Neubauer [1], S. Yochelis [1], I. Popov [2], and Y. Paltiel [1]
[1] Applied Physics Department and the Center for Nano-Science and Nano-Technology, the Hebrew University of Jerusalem. [2] Center for Nano-Science and Nano-Technology, the Hebrew University of Jerusalem

16:00 **Ab initio calculations of the transfer and aggregation of F centers, as well as bulk and nano-surface H centers in CaF2, BaF2 and SrF2** **EP1 9**
R. I. Eglitis(a), H. Shi(b) and R. Jia(c)
(a) Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia; (b) School of Science, Beijing Institute of Technology, 100081, Beijing, PR China; (c) Institute of Theoretical Chemistry, State Key Laboratory of Theoretical and Computational Chemistry, Jilin University, 130023 Changchun, PR China

16:00 **Healing Defective CVD-graphene through Vapor Phase Treatment** **EP1 10**
Do Van Lam,1, 2 Sang-Min Kim,2 Youngji Cho,3 Jae-Hyun Kim,2 Hak-Joo Lee,2 Jun-Mo Yang, 3 Seung-Mo Lee 1, 2, *
1 Nano Mechatronics, University of Science and Technology (UST), 217 Gajeong-ro, Yuseong-gu, Daejeon 305-333, South Korea 2 Department of Nanomechanics, Korea Institute of Machinery and Materials (KIMM), 156 Gajeongbuk-ro, Yuseong-gu, Daejeon 305-343, South Korea 3 Department of Measurement & Analysis, National Nanofab Center, 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, South Korea

16:00 **Interlayer Diffusion, Defect Creation, and Thermo –stability of Nanostructure of TM:Cu,Pd,Ni/Graphene Interfaces. MD-simulation** **EP1 11**
Valery Polukhin, Elmira Kurbanova, Evgeny Galashev
Institute of Material Studies and Metallurgy of Ural Federal University, Institute of Metallurgy of Ural Branch of the RAS, Institute of Industrial Ecology of Ural Branch of RAS

16:00 **Thermal stability of hydrogen in ZnO nanaostructures ; a kinetic monte carlo study** **EP1 12**
M. A. Lahmer, K. Guergouri
Departement of physcis, university of Boumerdes,Boumerdes. Algeria Laboratoire de physique chimie des semiconducteurs, université Mentouri-Constantine, Algerie

16:00 **Sensitive surface states of CdS quantum dots and their application as white light emitting flourophore.** **EP1 13**
Sesha Vempati,*1 Yelda Ertas,1,2 and Tamer Uyar.*1,2
1 UNAM-National Nanotechnology Research Center, Bilkent University, Ankara, 06800, Turkey 2 Institute of Materials Science & Nanotechnology, Bilkent University, Ankara, 06800, Turkey

16:00 **Tunable magnetic states in hexagonal boron nitride sheets** **EP1 14**
Pascal Pochet 1 ; Eduardo Machado-Charry 1 ,2 ; Paul Boulanger 1 ; Luigi Genovese 1 and Normand Mousseau 3
1 Laboratoire de simulation atomistique (L_Sim), SP2M, INAC, CEA-UJF, Grenoble, F-38054, France 2 Nanosciences Fondation, 23 rue des martyrs, 38000 Grenoble, France 3 Departement de Physique and RQMP, Universite de Montreal, C.P. 6128, Succursale Centre-Ville, Montreal, Quebec H3C 3J7, Canada

16:00 **Photoluminescent properties of lamellar nanocomposites obtained by Cd intercalation of GaSe and GaSe:Eu single crystals** **EP1 15**
D. Untila*, V. Canţer**, M. Caraman*, I. Evtodiev*, L. Leontie***, L. Dmitroglo*
* The Laboratory of Scientific Research Photonics and Physical Metrology, Moldova State University, A. Mateevici, 60, MD-2009 Kishinev, Republic of Moldova; ** Institute of the Electronic Engineering and Nanotechnologies, Academy of Sciences of Moldova; *** Faculty of Physics, Alexandru Ioan Cuza University of Iasi, Bul. Carol I, Nr. 11, 700506 Iasi, Romania

16:00 **Structural and electronic properties of Gd doped ZnO nanowires: A first principles study** **EP1 16**
Assa Aravindh S, Udo Schwingenschloegl , Iman S Roqan
Division of Physical Sciences and Engineering King Abdullah University of Science and Technology Thuwal 23955-6900 Kingdom of Saudi Arabia

16:00 **Electronic Structure and van der Waals Interactions in the Stability and Mobility of Point Defects in Semiconductors** **EP1 17**
Wang Gao and Alexandre Tkatchenko
Fritz-Haber-Institut der MPG, Berlin, Germany

16:00 **Calculation of latent track parameters for SiO2/Si and Si3N4 irradiated with fast ions** **EP1 18**
F. Komarov1, L. Vlasukova1, V. Yuvchenko1, A.Dauletbekova2, A. Akilbekov2, A. Alzhanova2
1 Belarusian State University, Minsk, Belarus, 2L.N.Gumilyov Eurasian national university, Astana, Kazakhstan

16:00 **Structural damage in LiF crystals, irradiated with swift ions under normal and oblique incidence** **EP1 19**
A. Dauletbekova1, R. Zabels2, A. Russakova1, M. Baizhumanov1, A.Akilbekov1, M. Zdorovets1
1L.N. Gumilyov Eurasian national university, Astana Kazakhstan, 2Institute of solid state physics, University of Latvia, , Riga, Latvia

16:00 **Study of the composition and structure of nano silicide phases created on the Si by ion implantation with active metals** **EP1 20**
X.X.Boltaev (a), D.A.Tashmukhamedova(a), M.T.Narmurodov(b)
a) Tashkent state technical university b) Karshi state university

16:00 **ELECTRON-LATTICE ENERGY TRANSFER RATE FOR DIFFERENT ELECTRONIC TEMPERATURES** **EP1 21**
S.A.Gorbunov (1), P.N.Terekhin (2), N.A.Medvedev (3), A.E.Volkov * (1,2,4)
(1) LPI of the Russian Academy of Sciences, Leninskij prospekt, 53,119991 Moscow, Russia, (2) NRC Kurchatov Institute, Kurchatov Sq. 1, 123182 Moscow, Russia, (3) CFEL at DESY, Notkestr. 85, 22607 Hamburg, Germany, (4) JINR, 141980 Dubna, Russia

16:00 **EXCITATION OF THE ELECTRON SUBSYSTEM OF SEMICONDUCTORS AFTER IMPACTS OF SWIFT HEAVY IONS** **EP1 22**
R.A. Rymzhanov *(1), N.A. Medvedev (2), and A.E. Volkov (1,3,4)
(1) FLNR, JINR, Joliot-Curie 6, 141980 Dubna, Russia; (2) CFEL at DESY, Notkestr. 85, 22607 Hamburg, Germany; (3) NRC Kurchatov Institute, Kurchatov Sq. 1, 123182 Moscow, Russia; (4) LPI of the Russian Academy of Sciences, Leninskij prospekt, 53,119991 Moscow, Russia

16:00 **Correlation between electrical properties and structure of single GaAs nanowires grown by MBE onto silicon substrate** **EP1 23**
Bussone G. (1,2), Schaefer-Eberwein H. (3), Dimakis E. (4), Biermanns A. (2), Carbone G. (1), Geelhaar L. (5), Haring Bolivar P. (3), Schuelli T. U. (1) and Pietsch U. (2)
(1) European Synchrotron Radiation Facility, Grenoble, France; (2) Festkoerperphysik, Universitaet Siegen, Germany; (3) Hochfrequenztechnik & Quantenelektronik, Universitaet Siegen, Germany; (4) Helmholtz-Zentrum Dresden-Rossendorf, Dresden, German; (5) Paul Drude Institute, Berlin, Germany

16:00 **Metadopants for semiconductor nanocrystal superlattices** **EP1 24**
Tiago A. Oliveira, José Coutinho, Sven Öberg, Mark J. Rayson, Patrick R. Briddon
Department of Physics & I3N, University of Aveiro, Campus Santiago, 3810-193 Aveiro, Portugal; Department of Physics & I3N, University of Aveiro, Campus Santiago, 3810-193 Aveiro, Portugal; Department of Engineering Sciences and Mathematics, Luleå University of Technology , SE-97187 Luleå, Sweden; Department of Chemistry, University of Surrey, Guildford, Surrey GU2 7XH, United Kingdom; Electrical, Electronic and Computer Engineering, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU, United Kingdom

16:00 **Fluorescent nanodiamonds by low energy irradiation** **EP1 25**
Andrea Mazzocut, Paolo Coppo, Alan Reynolds, Lorna Anguilano, Ashley Howkins
Andrea Mazzocut, The Wolfson Centre, Brunel University; Paolo Coppo, The Wolfson Centre, Brunel University; Alan Reynolds, Experimental Techniques Centre, Brunel University; Lorna Anguilano, Experimental Techniques Centre, Brunel University; Ashley Howkins, Experimental Techniques Centre, Brunel University;

16:00 **FEATURES OF RADIATION DEFECTS FORMATION IN QUANTUM DOTS EMBEDDED IN SOLID MATRIX** **EP1 26**
B.L.Oksengendler1), S.E.Maksimov1), O.B.Ismailova1), F.G.Djurabekova2)
1)Institute of ion-plasma and laser technology, Uzbek Academy of Sciences, Tashkent, Uzbekistan; 2)Helsinki Institute of Physics and Department of Physics, University of Helsinki, Helsinki, Finland

16:00 **Computer modeling ofradiative processesin nanoparticles** **EP1 27**
V.V. Uglov1, G.E. Remnev2, N.T. Kvasov1, I.V. Safronov1
1Belarusian State University,Minsk, Belarus; 2Tomsk PolytechnicUniversity, Tomsk,Russia

16:00 **Stress effects on the formation of He-plates into Si** **EP1 28**
M. Vallet1, J. F. Barbot1, A. Declémy1, S. Reboh2, M. F. Beaufort1
1Institut Pprime, UPR 3346 CNRS - Université de Poitiers - ENSMA, Department of Material Sciences, BP30179, 86962 Futuroscope Chasseneuil, France 2CEA-LETI, Minatec Campus, 17 rue des Martyrs, 38054 Grenoble, France

16:00 **Origin of p-typeness in N-doped Zn-deficient ZnO nanoparticles** **EP1 29**
A. Renaud*, B. Chavillon*, X. Rocquefelte*, E. Faulques*, P. Deniard*, M. Boujtita§, Y. Pellegrin§, E. Blart§, F. Odobel§, F. Cheviré!, F. Tessier!, L. Cario*, S. Jobic*
* Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP3229, 44322 Nantes cedex 03, France § CEISAM, Université de Nantes, CNRS, 2 rue de la Houssinière, 44322 Nantes cedex 03, France ! UMR CNRS 6226 «Sciences Chimiques de Rennes», équipe Verres et Céramiques, Université de Rennes 1, 35042 Rennes cedex, France

16:00 **Confocal micro-Raman study of defects induced by laser irradiation of single-layer graphene** **EP1 30**
A.S. Nikolenko(1), V.V. Strelchuk(1), Yu.Yu. Stubrov(1), V.O. Gubanov(2), M.M. Biliy(2), L.A. Bulavin(2) and O.E. Belyaev(1)
(1) V. Lashkaryov Institute of Semiconductor Physics National Academy of Sciences of Ukraine, 45 Nauky pr., 03028 Kyiv, Ukraine (2) Kyiv National Taras Shevchenko University, Department of Physics, 64 Volodymyrs'ka str., 01601Kyiv, Ukraine

16:00 **Contribution of iron silicide nanoparticles to the magnetic behavior of annealed Fe implanted 6H-SiC** **EP1 31**
M.L Diallo (a), A. Fnidiki (a), A. Debelle (b), L. Thomé (b), M. Viret (c), M. Drouet (d), D. Eyidi (d), A. Declémy (d)*
(a) Groupe de Physique des Matériaux (GPM) UMR 6634 CNRS, UFR Sciences et Techniques, Avenue de l'Université 76801 Saint Etienne du Rouvray, France (b) Centre de Spectrométrie Nucléaire et Spectrométrie de Masse (CSNSM) UMR 8609 CNRS, Université Paris-Sud, Bât 104 91405 Orsay Campus, France (c) Service de Physique de l'Etat Condensé (DSN/IRAMIS/SPEC), URA 2464 CNRS, Bât. 772, Orme des Merisiers, CEA Saclay 91191 Gif sur Yvette, France d Institut PPRIME, UPR 3346 CNRS, Université de Poitiers, ENSMA, SP2MI, téléport 2, 11 Bvd M. et P. Curie 86962 Futuroscope Chasseneuil France * corresponding author : Tel : +33 (0)5 49 49 67 07 e-mail address : alain.declemy@univ-poitiers.fr

16:00 **Evaluation of the influence of temperature on the photoluminescence of Mg-doped GaAs nanowires and films** **EP1 32**
B. P. Falcão(1), J. P. Leitão(1), M. R. Correia(1), M. P. Leitão(2), M. V. B. Moreira(3), A. G. de Oliveira(3), F. M. Matinaga(3), J. C. González(3)
(1) Departamento de Física and I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal (2) Departamento de Física and CICECO, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal (3) Departamento de Física, Universidade Federal de Minas Gerais, 30123-970 Belo Horizonte, Minas Gerais, Brazil

16:00 **Possible defect-related mechanisms of heat generation in gold nanoparticles by electromagnetic waves** **EP1 33**
Kamil Moldosanov(1) and Andrei Postnikov(2)
(1)Kyrgyz-Russian Slavic University, Bishkek, Kyrgyzstan; (2)University of Lorraine, LCP-A2MC, Metz, France

16:00 **Controllable synthesis and catalytic performance of rich defected PdAu nanodentrites catalysts for selective hydrogenation** **EP1 34**
Chao Ma, Dianqing Li, Junting Feng*
State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology

16:00 **Effect of boron ion doping on dislocation-related luminescence in silicon** **EP1 35**
D. Tetelbaum, A. Mikhaylov, A. Belov, D. Korolev, A. Shushunov, A. Bobrov, D. Pavlov
Lobachevsky State University of Nizhni Novgorod, Nizhni Novgorod, Russia

16:00 **Modification of metal containing carbon films by swift heavy ion irradiation** **EP1 36**
P.A.Karaseov1, A.I.Titov1, S.Kumar2, A.Tripathi2, D.K.Avasthi2, S.Mohapatra3
1 State Polytechnic University, St.Petersburg, Russia 2 Inter University Accelerator Center, New Delhi, India 3. Guru Gobind Singh Indraprastha University, New Delhi, India

16:00 **Electronic Properties of Implanted Iodine Confined in Nanocages of C12A7** **EP1 37**
Eduard Feldbach, Annika Pille, Eliko T?ldsepp, Raul Laasner, Sergey Omelkov, Marco Kirm
Institute of Physics, University of Tartu, Estonia

16:00 **Induced defects on graphene single layers by nanoelectrical discharges in room conditions** **EP1 38**
Carmen Coya1, Miguel García-Vélez1, Carmen Munuera2, Alicia de Andrés2, Angel Luis Álvarez1
1-Escuela Superior de Ciencias Experimentales y Tecnología (ESCET), Universidad Rey Juan Carlos, 28933 Madrid, Spain; 2-Instituto de Ciencia de Materiales de Madrid, CSIC, 28049 Madrid.

16:00 **Cristalline structure and optical properties of GaS-CdS nanocomposite** **EP1 39**
Iuliana Caraman 1, Elmira Vatavu 2, Liviu Leontie 3, Marius Stamate 1
1. Engineering Department, Vasile Alecsandri University of Bacau, 157 Calea Marasesti, Bacau, 600115 ROMANIA; 2 Faculty of Physics and Engineering, Moldova State University, 60 A. Mateevici str., Chisinau, MD-2009, MOLDOVA; 3 Faculty of Physics, Alexandru Ioan Cuza University of Iasi, 11 Carol I Blvd, Iasi, 700506, ROMANIA.

16:00 **Scale effects induced by imperfect interfaces in nanomaterials transport properties** **EP1 40**
F. Pavanello(1), F. Manca(1), P-L. Palla(1,2), E. Lampin(1), F. Cleri(1,2), S. Giordano(1,3)
(1)Université des Sciences et Technologies de Lille, Cité Scientifique 59655 Villeneuve d'Ascq Cédex, France; (2)Institut d'Electronique de Microélectronique et de Nanotechnologie, Avenue Poincare, CS 60069, 59652 Villeneuve d'Ascq, France; (3)LICS, IEMN, UMR CNRS 8520, PRES Lille Nord de France, ECLille, Avenue Poincare, CS 60069, 59652 Villeneuve d'Ascq, France

16:00 **Preparation and characterization of doped and undoped nanoporous carbon for heavy metal removal from aqueous solution** **EP1 41**
Imed Ghiloufi1,2; Lassaad El Mir1,2
1- Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Riyadh, Saudi Arabia. 2- Laboratory of Physics of Materials and Nanomaterials Applied at Environment (LaPhyMNE), Faculty of Sciences, Gabes University, Tunisia.

16:00 **Irradiation effects on the optical properties of silicon nanocrystals** **EP1 42**
Benjamin Bruhn, Sidoeri Dekker, Bart van Dam, Tom Gregorkiewicz, Katerina Dohnalova
Van der Waals-Zeeman Institute, University of Amsterdam, 1098XH Amsterdam, The Netherlands

16:00 **High Pressure Raman Study of Predominant Wurtzite InAs Nanowires** **EP1 43**
Achintya Singha, Dipanwita Majumdar, Abhisek Basu, Goutam Dev Mukherjee, Daniele Ercolani, Lucia Sorba
Department of Physics, Bose Institute, 93/1, Acharya Prafulla Chandra Road, Kolkata 700009, India; Department of Physics, Bose Institute, 93/1, Acharya Prafulla Chandra Road, Kolkata 700009, India; Department of Physical Sciences, IISER Kolkata 741252, India; Department of Physical Sciences, IISER Kolkata 741252, India; NEST-Istituto Nanoscienze-CNR and Scuola Normale Superiore, Piazza S. Silvestro 12, I-56127 Pisa, Italy; NEST-Istituto Nanoscienze-CNR and Scuola Normale Superiore, Piazza S. Silvestro 12, I-56127 Pisa, Italy

16:00 **UV-assisted room temperature gas sensing of GaN-core/ZnO shell nanowires** **EP1 44**
Sunghoon Park, Hyunsung Ko, Jihwan Jung and Chongmu Lee
Department of Materials Science and Engineering, Inha University, Yonghyun-dong, Nam-gu, Incheon 402 - 751, Republic of Korea

16:00 **Lattice parameter of graphene on Ir(111) vs temperature : strain, commensurability and defects** **EP1 45**
F. Jean,1 N. Blanc,1 T. Zhou,2 R. Felici,3 J. Coraux,1 G. Renaud 2
1 Institut Néel (CNRS), Grenoble, France; 2 CEA INAC, Grenoble, France; 3 European Synchrotron Radiation Facility, Grenoble, France

16:00 **Dielectric characterization of amorphous and disordered materials from temperature behavior of ac response** **EP1 46**
Orest Fl'unt
Faculty of Electronics, Ivan Franko National University of Lviv, Ukraine

16:00 **Surface composition, stoichiometry and photoluminescence properties of metal oxide nanoparticles** **EP1 47**
Amir. R. Gheisi(1), Chris Neygandhi(1), Andreas Sternig(1), Daniel Thomele(2), Esther Carrasco Burgos(3), Hubertus Marbach(3), Oliver Diwald(2)
(1)Institute of Particle Technology, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany; (2)Department of Materials Science & Physics, Paris-Lodron University of Salzburg, Salzburg, Austria; (3)Lehrstuhl für Physikalische Chemie II, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany

16:00 **Theoretical modeling of HCl, HBr and HF adsorption on boron- and nitrogen-doped single-walled carbon nanotubes** **EP1 48**
Nedilko S., Hizhnyi Yu., Chornii V., Borysiuk V., Gubanov V.
Taras Shevchenko National University of Kyiv, Volodymyrska Street 64/13, 01601, Kyiv, Ukraine

16:00 **Synthesis of nanocrystals of III-As alloys in silicon by ion implantation and rapid thermal annealing** **EP1 49**
Rim Khelifi, Yann Le Gall, Dominique Muller and Daniel Mathiot
CNRS-Université de Strasbourg

16:00 **The excellent high-temperature dielectric properties of N-doped 3C-SiC: First-principles calculations and experiments** **EP1 50**
Yan-Kun Dou, Hai-Bo Jin, Jing-Bo Li
Beijing Institute of Technology

16:00 **Influence of the GR1 defect center on the SiV zero phonon line shape in nanocrystalline diamond films** **EP1 51**
S. Tóth1*, L. Himics1, M. Veres1, Z. Balogh2, P. Csíkvári3, M. Koós1
1 Institute for Solid State Physics and Optics, Wigner Research Center for Physics, Hungarian Academy of Sciences, Hungary, H-1525 Budapest, P.O.Box 49., 2 Uzhhorod National University, 88000 Uzhhorod, Ukraine 3 Budapest University of Technology and Economics, Budapest, Hungary

16:00 **Ionic current rectification of graphene nanopore formed by irradiation** **EP1 52**
Huijun Yao, JianZeng, Dan Mo, Jinglai Duan, Jie Liu, Youmei Sun
Institute of Modern Physics, Chinese Academy of Sciences

16:00 **Energy transfer in 2D and 3D packed silicon nanocrystals embedded in SiO2** **EP1 53**
Rens Limpens, Arnon Lesage & Tom Gregorkiewicz
University of Amsterdam (Institute of Physics) Science park 904, 1098 XH, Amsterdam

16:00 **Porous silicon irradiated in the electronic regime: modelling the damage cross-section.** **EP1 54**
B. Canut 1, J.M. Bluet 1, M. Massoud 1, P. Newby 1, V. Lysenko 1, I. Monnet 2
1 Université de Lyon, Institut des Nanotechnologies de Lyon, CNRS, INSA de Lyon, France; 2 Centre de Recherche sur les Ions, les Matériaux et la Photonique, CEA-CNRS, Université de Caen, France

16:00 **Simulations of electromechanical shape transformations of Au nanoparticles.** **EP1 55**
V.Zadin, A. V. Krasheninnikov, F.Djurabekova, Long-Bing He , Bin-Jie Wang, Jun Sun, Li-Tao Sun, Scott X. Mao and Ze Zhang, K. Nordlund
Division of Materials Physics, Department of Physics and Helsinki Institute of Physics, P.O.Box 43 (Pietari Kalmink. 2)0001,4 University of Helsinki Intelligent Materials and Systems Lab, Institute of Technology, Tartu University, Nooruse 1, 50411 Tartu, Estonia; Department of Applied Physics, Aalto University, P.O. Box 11100, FI-00076 Aalto, Finland; Division of Materials Physics, Department of Physics and Helsinki Institute of Physics, P.O.Box 43 (Pietari Kalmink. 2)0001,4 University of Helsinki; SEU-FEI Nano-Pico Center, Key Lab of MEMS of Ministry of Education, Southeast University, Nanjing 210096, China FEI Company, Shanghai Nanoport, No.690 Bibo Road, Shanghai, 201203, PR China; SEU-FEI Nano-Pico Center, Key Lab of MEMS of Ministry of Education, Southeast University, Nanjing 210096, China; SEU-FEI Nano-Pico Center, Key Lab of MEMS of Ministry of Education, Southeast University, Nanjing 210096, China; Department of Mechanical Engineering and Materials Science, University of Pittsburgh, 3700 O'Hara Street, Pittsburgh, Pennsylvania 15261, USA; Department of Materials Science, State Key Lab of Si Materials, Zhejiang University, Hangzhou, Zhejiang, 310008, China; Division of Materials Physics, Department of Physics and Helsinki Institute of Physics, P.O.Box 43 (Pietari Kalmink. 2)0001,4 University of Helsinki;

16:00 **Photoluminescence from GaAs(1-x)N(x) dilute nitride achieved by nitrogen-implantation and flash lamp annealing** **EP1 56**
Kun Gao, S. Prucnal, R. H?bner , W. Skorupa, M. Helm, Shengqiang Zhou
Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Institute of Ion Beam Physics and Materials Research, P.O. Box 510119, 01314 Dresden, Germany

16:00 **Electronic and magnetic properties of graphene nanoribbons with reconstructed zigzag edges** **EP1 57**
P. Vancsó1, 5, I. Hagymási2,3, Yong-Sung Kim4, 5, Chanyong Hwang4,5, L. Tapasztó1,5 and L. P. Biró1, 5
1 Institute of Technical Physics and Materials Science, Research Centre for Natural Sciences, PO Box 49, H-1525 Budapest, Hungary, www.nanotechnology.hu 2 Strongly Correlated Systems "Lendület" Research Group, Institute for Solid State Physics and Optics, Wigner Research Centre for Physics, PO Box 49, H-1525 Budapest, Hungary 3 Department of Theoretical Physics, University of Szeged, Tisza Lajos krt 84-86, H-6720 Szeged, Hungary 4 Center for Nano-characterization, Division of Industrial Metrology, Korea Research Institute of Standards and Science, Yuseong, Daejeon 305-340, Republic of Korea 5 Korean-Hungarian Joint Laboratory for Nanosciences, PO Box 49, H-1525 Budapest, Hungary

16:00 **Perspectives of enhancement of p-type conductivity in ZnO nanowires** **EP1 58**
Tamar Tchelidze, Tamaz Kereselidze, Teimuraz Nadareishvili
Ivane Javakhishvili Ybilisi State University, Faculty of Exact and Natural Sciences

16:00 **Catalytic effects of grain boundaries on hydrogen dissociation** **EP1 59**
Martin Panholzer, Markus Obermayr, Kurt Hingerl
Zentrum für Oberflächen und Nanoanalytik, Johannes Kepler University Linz, Altenberger Straße 69, 4040 Linz, Austria

16:00 **Molecular dynamics simulations of MeV ion-induced craters in nanoscale polymer films** **EP1 60**
Vivian M. de Menezes1, Leandro I. Gutierres1, Diego Tramontina2, Raquel S. Thomaz1, Ricardo M. Papaléo1,3, Eduardo M. Bringa2,4
1PUCRS, Porto Alegre, Brazil 2Instituto de Ciencias Basicas, Universidad Nacional de Cuyo, Mendoza, Argentina 3UFRGS, Porto Alegre, Brazil 4CONICET, Mendoza, Argentina

16:00 **Carbon and Hydrogen impurities in Silicon nanoparticles** **EP1 61**
H. Ibadullaeva, A.O. Rahimova, A.P. Mukhtarov, M. Isakulova
H. Ibadullaeva, A.O. Rahimova, National University of Uzbekistan, 100214 Tashkent, Uzbekistan; A.P. Mukhtarov, Institute of Nuclear Physics AN RUz, 100214 Tashkent, Uzbekistan; M. Isakulova, Djizzakh State University, 130100 Djizzakh, Uzbekistan

16:00 **Self-trapped excitons at the surface of Si nanocrystals in SiO2** **EP1 62**
A.V. Gert, I.N. Yassievich
Ioffe Physical-Technical Institute of the Russian Academy of Sciences

16:00 **Stability, Oxidation and Shape Retention of PVP-Capped Palladium Nanocrystals** **EP1 63**
Gillian Collins, Michael Schmidt, Gerard P. McGlacken, Colm O?Dwyer, Justin D. Holmes
Department of Chemistry and the Tyndall National Institute, University College Cork, Cork, Ireland; Centre for Research on Adaptive Nanostructures and Nanodevices, Trinity College, Dublin, Ireland; ; Materials and Surface Science Institute, University of Limerick, Limerick, Ireland.

16:00 **On the investigation of the chemical effects induced by ion bombardment in poly(methyl methacrylate) thin and ultra-thin films** **EP1 64**
R. S. Thomaz1, D. Born1, L. I. Gutierres1, E. M. N. Oliveira1, J. Morais2, P. Louette3, R. M. Papaléo1, J. J. Pireaux3
1Faculty of Physics, Pontifical Catholic University of Rio Grande do Sul, Brazil;2Physics Institute, Federal University of Rio Grande do Sul, Brazil;3Physics Department, University of Namur, Belgium

16:00 **Controlled Introduction of Point defects in Germanium Optoelectronic Structures through Gamma Irradiation - Influence on Device Performance** **EP1 65**
Neil Patel* (1), Corentin Monmeyran* (1), Piotr Becla (2), Anuradha M. Agarwal (1), Lionel C. Kimerling (1) *Contributed equally to this work
1) Microphotonics Center, Massachusetts Institute of Technology, Cambridge, MA 02139; 2) Capesym, 6 Huron Dr #1b, Natick, MA 01760

16:00 **Thermodynamic Analyses of Defect formation in BFO** **EP1 66**
T. Tchelidze, T. Gagnidze, A. Shengelaya
Ivane Javakhishvili Tbilisi State University, Faculty of Exact and Natural Sciences

16:00 **Electrical and optical properties of sponge-like Ge embedded in dielectric matrix for solar cell applications** **EP1 67**
M. Yilmaz2,4, B. Altuntas*1,2, S. Ilday2,3, R. Turan1,2 , S. Cosentino5, R. Raciti5, I. Crupi5, A. Mio5, G. Nicotra5, A. Terrasi5, S. Mirabella5
1Department of Physics, Middle East Technical University, 06800, Ankara, TURKEY 2Center for Solar Cell Research and Applications (GÜNAM), Middle East Technical University, 06800, Ankara, TURKEY 3Department of Micro and Nanotechnology, Middle East Technical University, 06800, Ankara, TURKEY 4Department of Physics, Necmettin Erbakan University, 42090, Konya, TURKEY 5Dipartimento di Fisica e Astronomia and CNR-INFM, MATIS, Università di Catania, I-95123, Catania, ITALY

16:00 **The inelastic thermal spike model applied to metal/insulator interfaces** **EP1 68**
A. Chettah, H. Amekura, H. Kucal, Y. Takeda, M. Matsuda, A. Iwase
LRPCSI, University of Skikda, route d'ElHadaiek, BP 26, 21000 Skikda, Algeria; National Institute for Materials Science (NIMS), Tsukuba, Ibaraki 305-0003, Japan;CIMAP Laboratory, CEA-CNRS-ENSICAEN and Université of Caen, BP5133, 14070 Caen-cedex 5, France; National Institute for Materials Science (NIMS), Tsukuba, Ibaraki 305-0003, Japan; Japan Atomic Energy Agency (JAEA), Tokai-mura, Ibaraki 319-1195, Japan; Department of Materials Science, Osaka Prefecture University, Sakai, Osaka 599-8531, Japan

Nanooxides I : Yanwen Zhang

09:00 **Polarity driven defect formation in oxide nano-materials** EO4 1
Jacek Goniakowski, Claudine Noguera
CNRS, INSP, Paris, France

09:30 **The effect of oxygen vacancies in BaTiO3 and KNbO3.** EO4 2
Anna Kimmel, Peter Sushko, Markys Cain
National Physical Laboratory; University College London;

09:45 **Small losses in heavily Ga-doped ZnO films at the telecommunication wavelength for plasmonic materials** EO4 3
T. Yamamoto, H. Song, J. Nomoto and H. Makino
Kochi University of Technology

10:00 **Break**

Nanooxides II : Eugene Kotomin (to be confirmed)

10:30 **Defect-induced effects in nanocrystalline oxides** EO5 1
Yanwen Zhang (1,2), Dilpuneet S. Aidhy (1) , Tamas Varga (3), Sandra Moll (4), Philip D. Edmondson (5), Fereydoon Namavar (6), and William J. Weber (2,1)
(1) Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA; (2) Department of Materials Science & Engineering, University of Tennessee, Knoxville, TN 37996, USA; (3) Pacific Northwest National Laboratory, PO Box 999, Richland, WA 99352, USA; (4) TN International / AREVA, 1, rue des Hérons, 78182 Montigny Le Bretonneux, France; (5) Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, UK; (6) University of Nebraska Medical Center, Omaha, NE 68198, USA

11:00 **Size-confinement effects in perovskite-like quantum paraelectric nanoparticles** EO5 2
V. Trepakov1,2, M. Makarova1,3, Z. Potucek1, O. Stupakov1, E. Tereshina1 A. Dejneka1, L. Jastrabik1, and I. Bykov4.
1Institute of Physics ASCR, 182 21 Prague 8, Czech Republic 2Ioffe Physical-Technical Institute of the RAS, 194 021 St.-Petersburg, Russia 3 NIMS, 1-1 Namiki, Tsukuba, Ibaraki, 305-0044 Japan 4 Institute for Problems of Material Science, NASc of Ukraine, Krjijanovskogo 3, 03680 Kiev, Ukraine

11:15 **Confinement effects for ionic carriers in ABO3 perovskite ultrathin films** EO5 3
M. Arrigoni, D. Gryaznov, E.A. Kotomin, J. Maier
Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1 D-70569, Stuttgart, Germany; Institute of solid state physics, University of Latvia, Riga, Latvia; Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1 D-70569, Stuttgart, Germany; Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1 D-70569, Stuttgart, Germany

11:30 **The Nature of Intrinsic and Extrinsic Electron Trapping in SiO2** EO5 4
Al-Moatasem El-Sayed, Matthew Watkins, Alexander Shluger
Department of Physics and Astronomy, University College London, Gower Street, London WC1E 6BT, UK

11:45 **Elemental and Strain Analysis of a La2/3Sr1/3MnO3/ZrO2 System** EO5 5
Dan Zhou1, Yi Wang1, Wilfried Sigle1, Marion Kelsch1, Yuze Gao2, Hanns-Ulrich Habermeier2, Peter A. van Aken1
1Max Planck Institute for Intelligent Systems, Stuttgart Center for Electron Microscopy, Heisenbergstraße 3, 70569 Stuttgart, Germany 2Max Planck Institute for Solid State Research, Heisenbergstraße 1, 70569 Stuttgart, Germany

12:00 **Lunch**

Metallic nanostructures : Kai Nordlund

14:00 **Tailoring the thermal and superconducting properties of ion beam synthesized Pb nanoparticles in Si, Al and Cu matrices** EO6 1
H. Wang (1), T. Picot (2), K. Houben (2), S. Bals (3), C. Detavernier (4), S.A. Brown (5), M.J. Van Bael (2), K. Temst (1) and A. Vantomme (1)
(1) Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium (2) Laboratory of Solid State Physics and Magnetism, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium (3) EMAT, Dept. Fysica, Universiteit Antwerpen, Belgium (4) Department of Solid State Sciences, Ghent University, 9000 Gent, Belgium (5) The MacDiarmid Institute for Advanced Materials and Nanotechnology, Dept. of Physics and Astronomy, University of Canterbury, 8140, Christchurch, New Zealand

14:30 **Nano-size metallic oxide cluster formation in high-purity Fe-10%Cr alloy by ion implantation** EO6 2
Ce Zheng (a), Aurelie Gentils (a), Joel Ribis (b), Odile Kaitasov (a), Vladimir A. Borodin (c)
(a) CSNSM, Univ Paris-Sud, CNRS, 91405 Orsay Campus, France ; (b) CEA, DEN, DMN, SRMA, F-91191 Gif sur Yvette, France ; (c) NRC Kurchatov Institute, Kurchatov Sq., 1, 123182 Moscow, Russia

14:45 **Defect-induced stress development and defect stability in sputter-deposited refractory metal films** EO6 3
G. Abadias(1), J.J. Colin (1), D. Magnfält (2), A. Michel (1), K. Sarakinos (2), C. Jaouen (2)
1. Institut P', Dpt. Physique et Mécanique des Matériaux, Université de Poitiers-CNRS, France; 2. IFM-Linköping University, Plasma and Coatings Physics Division, Sweden

15:00 **Enhancement of the Magnetic Properties of Iron Nanoparticles upon Incorporation of Samarium** EO6 4
J. Leveneur, F. Kremer, J. Kennedy, M.C. Ridgway, G. V. M. Williams, J.B. Metson
National Isotope Centre, GNS Science, 30 Gracefield Rd., PO Box 31312, 5010 Lower Hutt, New Zealand; The School of Chemical Sciences, The University of Auckland, Private Bag 92019 , Auckland, New Zealand; Department of Electronic Materials Engineering, Research School of Physics and Engineering, The Australian National University, Canberra, ACT 0200, Australia; The MacDiarmid Institute for Advanced Materials and Nanotechnology, SCPS, Victoria University, PO Box 600, Wellington, New Zealand.

15:15 **Ion beam synthesis of the full spectrum of III-V:Mn ferromagnetic semiconductors** EO6 5
Shengqiang Zhou
Helmholtz - Zentrum Dresden - Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstr. 400, 01328 Dresden, Germany

15:45 **Break**

Nanowires : Nikolai Sobolev

16:15 **Radiation defects in low dimensional structures** EO7 1
E. Alves1, K. Lorenz1, A. Redondo-Cubero1,T. Monteiro2, B. Daudin3, E. Wendler4
1. Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico (IST), EN.10, P-2695-066 Bobadela, Portugal; 2. Departamento de Física e i3N, Universidade de Aveiro, 3810-193 Portugal; 3. CEA/CNRS Group,"Nanophysique et Semiconducteurs", INAC, CEA/Grenoble, 17 rue des Martyrs, Grenoble Cedex 9, 38054, France. 4. Friedrich-Schiller-Universität Jena, Institut für Festkörperphysik, Max-Wien-Platz 1, 07743 Jena, Germany

16:45 **Implantation damage and rare earth activation in GaN nanowires and thin films** **EO7 2**
M. Felizardo [a], N. Franco [a,b], M. Peres [a], E. Alves [a,b], K. Lorenz [a,b], E. Nogales [c], B. Méndez [c], J. Rodrigues [d], T. Monteiro [d], M-P. Chauvat [e], P. Ruterana [e], T. Auzelle [f], B. Daudin [f]
[a] Instituto Superior Técnico (IST), Campus Tecnológico e Nuclear, Estrada Nacional 10, P-2695-066 Bobadela LRS, Portugal; [b] IPFN, IST, Portugal; [c] Dpto. Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain; [d] Departamento de Física e i3N, Universidade de Aveiro, 3810-193 Portugal; [e] Centre de Recherche sur les ions les matériaux et la photonique (CIMAP) ENSICAEN, Boulevard Maréchal Juin 14050 Caen France [f] CEA/CNRS Group, “Nanophysique et Semiconducteurs”, INAC, CEA/Grenoble, 17 rue des Martyrs, Grenoble Cedex 9, 38054, France.

17:00 **Band-offset driven efficiency of the doping of SiGe core-shell nanowires** **EO7 3**
M. Amato (1), S. Ossicini (2) R. Rurali (3)
(1) Institut d’Electronique Fondamentale, UMR8622, CNRS, Université Paris-Sud, 91405 Orsay, France (2) Dipartimento di Scienze e Metodi dell’Ingegneria, Università di Modena e Reggio Emilia, Via Amendola 2 Pad. Morselli, I-42100 Reggio Emilia, Italy (3) Institut de Ciència de Materials de Barcelona (CSIC), Campus de la UAB, 08193 Bellaterra, Spain

17:15 **Interplay between defects in metallic nanowire networks and their physical properties: a modeling and experimental approach** **EO7 4**
M. Lagrange1, D. P. Langley1,2, D. Munoz-Rojas1, C. Jimenez1, N. D. Nguyen2, Y. Bréchet3, D.Bellet1
1Laboratoire des Matériaux et du Génie Physique CNRS - Grenoble INP, 3 parvis Louis Néel CS 50257, 38016 Grenoble, France. 2 Laboratoire de Physique des Solides, Interfaces et Nanostructures Département de Physique, Université de Liège Allée du 6 Août 17, B-4000 Liège, Belgique. 3 Laboratoire de Science et Ingénierie des Matériaux et des Procédés CNRS - Grenoble INP, 1130 rue de la piscine 38042 Saint-Martin d’Hères, France.

17:30 **Inducing and Engineering Defects in Ge Nanowires** **EO7 5**
Subhajit Biswas ?, Michael A. Morris?,□ and Justin D. Holmes?,□,*
?Materials Chemistry & Analysis Group, Department of Chemistry and the Tyndall National Institute, University College Cork, Cork, Ireland. □Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College Dublin, Dublin 2, Ireland.

28 May 2014

Defect-induced effects : Eduardo Alves

09:00 **Formation of nanoscale radiation defects in graphite and diamond by energetic argon clusters** **EO8 1**
V.N. Popok (1), M. Hanif (1), J. Samela (2), K. Nordlund (2), V.P. Popov (3)
(1) Aalborg University, 9210 Aalborg, Denmark; (2) University of Helsinki, 00014, Helsinki, Finland; (3) Institute of Semiconductor Physics, 630090 Novosibirsk, Russia

09:15 **Doped TiO2 and SrTiO3 nanotubes for photocatalytic applications: Predictions from first principles** **EO8 2**
Yu.F. Zhukovskii(1), S. Piskunov(1), O. Lisovskii(1), J. Begens(1) and E.Spohr(2)
(1) Institute of Solid State Physics, University of Latvia, 8 Kengaraga str., LV-1083, Riga, Latvia; (2) Lehrstuhl für theoretische Chemie, Universität Duisburg-Essen, Universitätstr. 2, 45141 Essen, Germany

09:30 **Structural Phase Transformation in TiO2 nanoparticles induced by visible light** **EO8 3**
Luigi Stagi, Pier Carlo Ricci,Carlo Maria Carbonaro, Marcello Salis, Alberto Casu, Francesco Delogu, Stefano Enzo
Dipartimento di Fisica, Università degli Studi di Cagliari, S.P. Monserrato-Sestu Km 0,700, 09042 Monserrato (CA), Italy;Dipartimento di Fisica, Università degli Studi di Cagliari, S.P. Monserrato-Sestu Km 0,700, 09042 Monserrato (CA), Italy;Dipartimento di Fisica, Università degli Studi di Cagliari, S.P. Monserrato-Sestu Km 0,700, 09042 Monserrato (CA), Italy;Dipartimento di Fisica, Università degli Studi di Cagliari, S.P. Monserrato-Sestu Km 0,700, 09042 Monserrato (CA), Italy; Istituto Italiano di Tecnologia (IIT), via Morego 30, 16163 Genova, Italy;Dipartimento di Ingegneria Meccanica, Chimica, e dei Materiali, Università degli Studi di Cagliari, via Marengo 2, 09123 Cagliari, Italy;Dipartimento di Chimica e Farmacia, Università degli Studi di Sassari, via Vienna 2, 07100 Sassari, Italy

09:45 **Lithium ion dynamics in micro- and nanocrystalline layer-structured insertion materials as seen via 7Li nuclear magnetic resonance** **EO8 4**
Julia Langer, Viktor Epp, Martin Wilkening
Institute for Chemistry and Technoloy of Materials, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria DFG Research Unit 1277

10:00 **Break**

Properties of SiC : Harry Bernas (to be confirmed)

10:30 **Irradiation Response of Nano-Engineered SiC** **EO9 1**
C.-H. Chen (1), Y. Zhang (2,1), M. L. Crespillo (1), S. Shannon (3), M. Ishimaru (4), and W. J. Weber (1,2)
(1) Department of Materials Science & Engineering, University of Tennessee, Knoxville, TN 37996, USA; (2) Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA; (3) Nuclear Engineering Dept., North Carolina State University, Raleigh, NC 27695, USA; (4) Institute of Scientific and Industrial Research, Osaka University, Osaka 567-0047, Japan

11:00 **Micro-Raman spectroscopy and in-situ TEM annealing of ion-irradiated SiC fibers: influence of the microstructure on radiation tolerance and recrystallization** **EO9 2**
J. Huguet-Garcia1*, A. Jankowiak2, S. Miro3, D. Gosset4, Y. Serruys3, J.M. Costantini4
1. CEA, DEN, SRMA, LC2M, F-91191 Gif-sur-Yvette, France. 2. CEA, DEN, SRMA, LTMEX, F-91191 Gif-sur-Yvette, France. 3. CEA, DEN, SRMP, Laboratoire JANNUS, F-91191 Gif-sur-Yvette, France. 4. CEA, DEN, SRMA, LA2M, F-91191 Gif-sur-Yvette, France.

11:15 **In situ evolution of helium bubbles in SiC under irradiation** **EO9 3**
M.F. Beaufort1, M. Vallet1, E. Oliviero2, J.F. Barbot1
1Institut Pprime, CNRS - Université de Poitiers - ENSMA - UPR 3346, Département Physique et Mécanique des Matériaux, SP2MI, Bd M. et P. Curie - BP 30179, 86962 Futuroscope, Chasseneuil Cedex, France 2CSNSM - IN2P3 - CNRS, Université Paris-Sud, 91405 Orsay Campus France

11:30 **Experimental and computational investigation of the defects involved in ion-beam-induced amorphization and recrystallization phenomena in SiC** EO9 4
A. Debelle1, M. Backman2,4, A. Boulle3, F. Djurabekova4, A. Chartier5, B. Weber2,6, L. Thomé1, K. Nordlund4, F. Garrido1
1. CSNSM, Univ. Paris-Sud/CNRS/IN2P3, Orsay, France 2. DMSE, University of Tennessee, Knoxville, USA 3. SPCTS, Univ. Limoges/CNRS, Limoges, France 4. University of Helsinki, Helsinki, Finland 5. CEA-Saclay, DEN, DPC, SCCME, Gif-Sur-Yvette, France 6. MST Division, ORNL, Oak Ridge, Tennessee, USA

12:00 **Lunch**

Poster session II : Ricardo Papaléo and Feng Ding

13:30 **Strain status and interdiffusion of epitaxial Pr0.7Sr0.3MnO3/La0.5Ca0.5MnO3 bilayer structure** EP2 1
H.O.Wang, P.Dai, W.S.Tan
Key Laboratory of Soft Chemistry and Functional Materials, Ministry of Education, Department of Applied Physics, Nanjing University of Science and Technology, Nanjing, 210094, P. R. China

13:30 **TRANSMISSION PROPERTIES IN DIMER FIBONACCI GaAs/Ga1-XAlXAs SUPERLATTICES** EP2 2
Aziz Zoubir* , Sefir Yamina, Djelti redouan and Bentata Samir
Laboratory of Technology and Properties of solid

13:30 **A study on the microscopic damages of Cyanoacrylate/SiO2 nanocomposites due to scratch test** EP2 3
A. Abbasi Eliyaderani, S. M. Zebarjad, M. Kashefi Torbati
Atefeh Abbasi Eliyaderani' Seyed Mojtaba Zebarjad' Mehrdad Kashefi Torbati

13:30 **Numerical Investigation of nanoscale SiGe DG MOSFET performance against the interfacial defects** EP2 4
T. Bentrcia, F. Djeffal, M. Meguellati and D. Arar
1) Department of Physics, University of Batna,Batna 05000, Algeria. 2)LEA, Department of Electronics, University of Batna, Batna 05000, Algeria. E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

13:30 **SEGREGATION ON THE SURFACE OF TITANIUM STEEL 12Cr18Ni10Ti EXPOSED ELECTRON BEAM** EP2 5
Sergey Plotnikov, Nazgul Yerdybayeva
East Kazakhstan State Technical University, Ust-Kamenogorsk, the Republic of Kazakhstan; Sergey Plotnikov, Nazgul Yerdybayeva

13:30 **Thickness dependence of magnetic properties in FeCoB-O soft magnetic films** EP2 6
Huaping Zuo, Shihui Ge, Feng Zhang, Guowei Wang, Min Xu
Huaping Zuo, Min Xu Science and Technology on Surface Engineering Laboratory, Lanzhou Institute of Physics, Lanzhou 730000, China; Shihui Ge, Feng Zhang, Guowei Wang Key Laboratory for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou 730000, China

13:30 **Manipulating anisotropic superconducting usingi ferroelectric domain wall engineering** EP2 7
Yen-Lin Huang1, Vu- ThanhTra2, Heng-Jui Liu1, Long-Yi Chen3, Shih-Ting Guo4, Wei-Li Lee4, Chih-Wei Luo3, Jiunn-Yuan Lin2, and Ying-Hao Chu1
1. Department of Materials Science and Engineering, National Chiao Tung University, HsinChu, 300, Taiwan, 2. Institute of Physic, National Chiao Tung University, HsinChu, 300, Taiwan,3. Department of Electrophysics, National Chiao Tung University, HsinChu, 300, Taiwan, 4. Institute of Physics, Academia Sinica, Nankang, Taipei, Taiwan

13:30 **Effects of morphology and RE doping on emission of La1-xRExVO4 powders** EP2 8
O. Chukova, S.G. Nedilko, S.A. Nedilko, T. Voitenko
Taras Shevchenko National University of Kyiv, 4-b acad. Hlushkova Ave, 03680 Kyiv, Ukraine

13:30 **STUDY THE THERMAL DIFFUSION, SEGREGATION AND DISTRIBUTION OF NIOBIUM ATOMS IN DEPTH OF DILUTED ALLOY OF MOLYBDENUM WITH NIOBIUM** EP2 9
N.A.Nurmatov, Y.S.Ergashov
National University of Uzbekistan

13:30 **INVESTIGATION OF ALGAINP HETEROSTRUCTURES UNDER GAMMA-IRRADIATION IN THE FIELD OF RESTRUCTURING DEFECT STRUCTURE** EP2 10
Orlova Ksenia Nikolaevna, Gradoboev Alexandr Vasilievich
National Research Tomsk Polytechnic University

13:30 **Atomistic study of martensitic transformation on ω to α phase transformation in Ti-15Mo alloy** EP2 11
Sung Jin Kang(1), Sung-Hwan Kim(1), Hu-Chul Lee(2), Yoon-UkHeo(2),Jae-HyeokShim(3), Heung Nam Han(1) and Miyoung Kim(1)*
(1) Department of Materials Science & Engineering, Seoul National University,151-744 South. Korea (2) Graduate Institute of Ferrous Technology(GIFT), Pohang University of Science and Technology, 790-784, South Korea (3) High Temperature Energy Materials Research Center, Korea Institute of Science and Technology, 136-791, South Korea *Corresponding author: mkim@snu.ac.kr

13:30 **Investigation of the processes of nanodimensional structure formation in the surface area Pd and PdBa under ionic bombing** EP2 12
B.E.Umirzakov, S.B.Donaev
Tashkent state technical university

13:30 **Unusual surface morphology of porous silicon passivated by Fe3 electrochemical deposition: Micro structural and Photoluminescence studies** EP2 13
A. Mabrouk, N. Lorrain, M. L. Haji and M. Oueslati
Asma Mabrouk

13:30 **Effect of proton irradiation H (2.5 MeV) on the critical parameters of composite HTS tapes** EP2 14
Antonova L.Kh.1, Demikhov T.E.2, Troitskii A.V.1, Didyk A.Yu.3 , Kobzev A.P.3, Kulikauskas V.S.4, Mikhailova G.N.1
1 A.M. Prokhorov General Physics Institute of RAS; 2 Lebedev Physical Institute of RAS; 3 Joint Institute for Nuclear Research; 4 Skobeltsyn Institute Nuclear Physics of MSU (Moscow State University)

13:30 **Surface Effects under Visible Irradiation and Heat Treatment on the Phase Stability of γ-Fe2O3 Nanoparticles and γ-Fe2O3 –SiO2 Core-Shell Nanostructures** EP2 15
Luigi Stagi , Jose A. De Toro, Andrea Ardu, Carla Cannas, Alberto Casu, Pier Carlo Ricci
Dipartimento di Fisica, Universitá degli Studi di Cagliari, S.P. Monserrato-Sestu Km 0,700, 09042 Monserrato (CA), Italy;Instituto Regional de Investigación Científica Aplicada (IRICA), Departamento de Física Aplicada, Universidad de Castilla-La Mancha, 13071 Ciudad Real, Spain; Department of Chemical and Geological Sciences, University of Cagliari, Monserrato Campus, SS 554 bivio Sestu, I-09042 Monserrato (CA), Italy;Department of Chemical and Geological Sciences, University of Cagliari, Monserrato Campus, SS 554 bivio Sestu, I-09042 Monserrato (CA), Italy; Nanochemistry Department, Istituto Italiano di Tecnologia, via Morego 30, 16163 Genova, Italy;Dipartimento di Fisica, Universitá degli Studi di Cagliari, S.P. Monserrato-Sestu Km 0,700, 09042 Monserrato (CA), Italy

13:30 **Defect modes in a magnonic crystal and their applications in energy-efficient spin-wave devices** EP2 16
K. Di, H. S. Lim, S. C. Ng, V. L. Zhang, and M. H. Kuok
Department of Physics, National University of Singapore

13:30 **Formation of nanodimensional structures on the surface of GaAs by ion implantation** EP2 17
S.B.Donaev(a), A.K.Tashatov(b), B.E.Umirzakov(a)
a) Tashkent state technical univercity b) Karshi state univercity

13:30 **Thermal annealing effects in Mn-doped heterostructures with GaAs/InGaAs/GaAs quantum wells** EP2 18
I.L. Kalentyeva, O.V. Vikhrova, Yu.A. Danilov, B.N. Zvonkov, M.N. Drozdov, A.V. Kudrin
Lobachevsky State University of Nizhni Novgorod, Russia; Institute for Physics of Microstructures, Russian Academy of Sciences

13:30 **Stark effect in GaNAsBi/GaAs quantum wells operating at 1.55 μm** EP2 19
C. Bilel*, M. M. Habchi, A. Rebey, and B. El Jani
University of Monastir, Faculty of Sciences Unité de Recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5019 Monastir, Tunisia E-mail: * chakroun_bilel01@yahoo.fr

13:30 **Possible defect-induced ferromagnetism in Cr doped SiC single crystals** **EP2 20**
Yu Liu, Shengqiang Zhou, Gang Wang, Shunchong Wang, Wei Sun, Xiaolong Chen
Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), P.O. Box 510119, 01314 Dresden, Germany Yu Liu, Shengqiang Zhou; Research & Development Center for Functional Crystals, Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China Yu Liu, Gang Wang, Shunchong Wang, Wei Sun, Xiaolong Chen; Collaborative Innovation Center of Quantum Matter, Beijing, China Xiaolong Chen

13:30 **The parameters of localized states in Er-doped TlInSe2 single crystals** **EP2 21**
S.N.Mustafaeva 1, M.M.Asadov 2
1Institute of Physics, National Academy of Sciences of Azerbaijan, 2Institute of Chemical Problems, National Academy of Sciences of Azerbaijan

13:30 **Modification and Decreasing Defects of Thin Gate Dielectric of MIS Devices by Injection-Thermal and Irradiation Treatments** **EP2 22**
V.V.Andreev1, G.G.Bondarenko2, V.M.Maslovsky3, A.A.Stolyarov1, D.V.Andreev1
1) Bauman Moscow State Technical University, Kaluga Branch. 4, Bazhenov St., Kaluga, 248600, Russia 2) National Research University Higher School of Economics, 20, Myasnitskaya Ulitsa, Moscow 101000, Russia 3) The state unitary enterprise of a city of Moscow Research-and-production centre «SPURT», Zelenograd, West of the 1-st proezd 4, 124460, Russia

13:30 **Axial Strain controlled electrical conduction in 2D transition metal oxides and dichalcogenides** **EP2 23**
Sumeet Walia, Hussein Nili, Sivacarendran Balendhran, Sharath Sriram, Madhu Bhaskaran
Functional Materials and Microsystems Research Group, School of Electrical and Computer Engineering, RMIT University, Melbourne, Victoria 3001, Australia

13:30 **LEED-STUDY OF LAYER EPITAXY DURING GROWTH INITIAL STAGE** **EP2 24**
S.J.Nimatov, D.S.Rumi
Tashkent state technical university

13:30 **DISTRIBUTION PROFILES OF ATOMS AT THE BOUNDARY OF CoSi2/CaF2/Si(111) NANOFILM SYSTEM** **EP2 25**
B.E.Umirzakov, S.J.Nimatov
Tashkent state technical university

13:30 **Enhancing electrical properties of transparent Er-doped ZnO films** **EP2 26**
Y. Kafadaryan (a), N. Aghamalyan (a), A. Igityan (a), S. Petrosyan (a), N. Aramyan (b), R. Hovsepyan (a)
a-Institute for Physical Research, NAS of Armenia, Ashtarak, Armenia; b-Institute of Radiophysics & Electronics, NAS of Armenia, Ashtarak, Armenia

13:30 **Magnetic resonance in ion-beam synthesized Fe3Si films (computer simulation)** **EP2 27**
N.A.Balakirev, V.A.Zhikharev
Kazan National Research Technological University

13:30 **Reduction of Contribution of Grain Boundary Scattering to Carrier Transport Using Critical Layers for Polycrystalline Al-Doped ZnO Films Prepared by Magnetron Sputtering** **EP2 28**
J. Nomoto1), H. Song1), H. Makino1), S. Kishimoto1), 2) , T. Yamamoto1)
1) Materials Design Center, Research Institute, Kochi University of Technology, Japan ; 2) Kochi National College of Technology, Japan

13:30 **Transport and magnetic properties of proton-irradiated ferromagnetic InMnAs layers with MnAs inclusions** **EP2 29**
A.V. Kudrin, Yu.A. Danilov, A.V. Shvetsov, H. Boudinov
University of Nizhny Novgorod, Nizhny Novgorod 603950, Russia; Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre 91501-970, Brazil

13:30 **Spin-Dependent Domain Wall Scattering Effect in Magnetoresistance of Metal-Polymer Composites Prepared by Implantation of Transition Metal Ions** **EP2 30**
Y.A. Bumai1, A.A. Kharchenko2, R.I. Khaibullin3, M. G. Lukashevich2, V.B. Odzhaev1
1 Belarussian national technical university, 220030, Minsk, Belarus; 2 Belarusian State University, 220030, Minsk, Belarus; 3 Kazan Physical-Technical Institute, RAS, 420029, Kazan, Russian Federation

13:30 **Cathodoluminescence analysis of damage accumulation in irradiated Gd2Zr2O7** **EP2 31**
Iwona Jozwik-Biala 1). Jacek Jagielski 1,2). Grzegorz Gawlik 1). Urszula Brykala 1). Gerard Panczer 3). Xiaochun Wang 3). Nathalie Moncoffre 4). Aurelien Debelle 5). Lionel Thomé 5)
1) Institute of Electronic Materials Technology, Wolczynska 133, 01-919 Warszawa, Poland; 2) National Center for Nuclear Research, A. Soltana 7, 05-400 Otwock, Poland; 3) Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne cedex, France; 4) Institute de Physique Nucléaire Lyon, UMR5822, 69622 Villeurbanne Cedex, France; 5) Centre de Sciences Nucléaires et de Sciences de la Matière, IN2P3-CNRS, Université Paris-Sud, 91405 Orsay Cédex;

13:30 **Resistivity Changes Associated with Grain Coarsening in Nanocrystalline Nickel** **EP2 32**
J E Danbrough(1), B Roebuck(2), PEJ Flewitt(1)
(1)Interface Analysis Centre, School of Physics, University of Bristol, Bristol, UK; (2)National Physical Laboratory, Teddington, UK

13:30 **Ion-induced degradation of phase stability and hardness of TiZrSiN nanocomposite thin films** **EP2 33**
V.V. Uglov1, G. Abadias2, S.N. Dub3, G. N. Tolmachova4, S.V. Zlotski1, I.A. Saladukhin1, S.S. Leshkevich1
1Belarusian State University, Minsk, Belarus; 2University of Poitiers, Poitiers, France; 3Institute for Superhard Materials NAS, Kiev, Ukraine; 4Kharkov Institute of Physics and Technology, Kharkov, Ukraine

13:30 **Study on γ-ray irradiation resistance of novel telluride glasses** **EP2 34**
S.Baccaro, A.Cemmi, Y. Zhou, Y. Yang, G.Chen
ENEA, Roma (Italy): S.Baccaro; A.Cemmi ECUST, Shanghai (China): Y. Zhou; Y. Yang; G.Chen

13:30 **Modification of the interface defect composition of GaN epitaxial layers for HEMT structures by weak magnetic fields** **EP2 35**
Red'ko R.A., Konakova R.V., Milenin V.V., Shvalagin V.V., Red'ko S.M.
V. Lashkaryov Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, 41 Nauky Pr., 03028 Kyiv, Ukraine

13:30 **Structural and optical characterization of AlxGa1-xN alloys doped with Rare Earth ions** **EP2 36**
M. Fialho a, K. Lorenz a, S. Magalhães a, J. Rodrigues b, A. J. Neves b, T. Monteiro b, E. Alves a
a Campus Tecnológico e Nuclear, IPFN, Instituto Superior Técnico, Universidade de Lisboa, EN10, 2695-066 Bobadela LRS , Portugal; b Departamento de Física e i3N, Universidade de Aveiro, 3810-193 Aveiro, Portugal

13:30 **Terahertz photoconductivity in PbTe(In) films with variable nanostructure** **EP2 37**
D. Khokhlov, V. Chernichkin, L. Ryabova; V. Kasiyan; S. Danilov
M.V. Lomonosov Moscow State University, Moscow, Russia; Ben Gurion University, Beer Sheva, Israel; University of Regensburg, Regensburg, Germany

13:30 **Investigation of 'memory effect' of RADIATION EXPOSURE in AlGaAs heterostructures** **EP2 38**
Gradoboev Alexander Vasilievich, Sednev Vyacheslav Vladimirovich
National Research Tomsk Polytechnic University

13:30 **Defect-enhanced F ion conductivity in layer-structured BaSnF4 prepared by high-energy ball milling combined with soft annealing** **EP2 39**
Florian Preishuber-Pflügl, Martin Wilkening
Institute for Chemistry and Technology of Materials, Graz University of Technology, DFG SPP 1415, Stremayrgasse 9, A-8010 Graz, Austria

13:30 **Charged Defects and Defect-induced Processes in Nitrogen Films** **EP2 40**
E.V. Savchenko1*, I.V. Khyzhniy1, S.A. Uyutnov1, G.B. Gumenchuk2, A.N. Ponomaryov3, V.E. Bondybey2
1Institute for Low Temperature Physics and Engineering NASU, 61103 Kharkov, Ukraine 2Lehrstuhl für Physikalische Chemie II TUM, 85747 Garching, Germany 3Helmholtz Zentrum Dresden-Rossendorf, Dresden 01328, Germany

13:30 **Process of hole capture in Ge/Si heterostructure with Ge quantum dots.** EP2 41
A. A. Bloshkin*,**, A. I. Yakimov*, V. A. Timofeev*, A. V. Dvurechenskii*,**, A. A. Kirakosyan***
*Institute of Semiconductor Physics SB RAS, 630090 Novosibirsk, Russia. ** Novosibirsk State University, Novosibirsk, Russia *** Yerevan State University, Yerevan, Armenia.

13:30 **Defect evolution and precipitation in carbon implanted strained SiGe and SiSn layers** EP2 42
P.I. Gaiduk, A.Nylandsted Larsen,F.L. Bregolin, W. Skorupa
Department of Physics and Astronomy/iNANO, Aarhus University, Denmark; Department of Semiconductor Materials, Helmholtz-Zentrum Dresden-Rossendorf

13:30 **An interatomic potential for Fe-Cr-C: modeling stainless steels** EP2 43
K.O.E. Henriksson, C. Björkas, K. Nordlund
Department of Physics P.O.Box 43 (Pietari Kalmin katu 2) FIN-00014 University of Helsinki Finland

13:30 **Fe-ion implantation induced defects in TiO2 thin films** EP2 44
V. Scuderi (a), G. Impellizzeri (a), L. Romano (a), P. Sberna (a), E. Arcadipane (a), R. Sanz (a), F. Simone (a), V. Privitera (a)
(a) CNR-IMM MATIS and Department of Physics and Astronomy, University of Catania, Via S. Sofia 64, I-95123 Catania, Italy

13:30 **Irreversible change in the conductivity of 2-dimensional electron gas at LaAlO3/SrTiO3** EP2 45
Shin Ik Kim,1,2 Hyungkwang Lim,1,3 Doo Seok Jeong,1 Seung-Hyub Baek,1 Jin-Sang Kim1, and Seong Keun Kim,1
1Electronic Materials Research Center, Korea Institute of Science and Technology, Seoul 136-791, South Korea 2Department of Nanomaterials, University of Science and Technology, Daejeon, 305-333, South Korea 3Department of Materials Science and Engineering, Seoul National University, Seoul, 151-744, South Korea

13:30 **Rare-Earths Orthoniobates – Structural, Optical and Electrical Properties** EP2 46
Cláudio Nico, F. Costa, Teresa Monteiro, Manuel P.F. Graça
Department of Physics & i3N, University of Aveiro, Portugal

13:30 **Defect-tailored ZnO with the Exceptional Photocatalytic Activity** EP2 47
Ting-Ting Chen,1 I-Chun Chang,1 Ping-Yen Hsieh,1 Hsin-Tien Chiu,2 and Chi-Young Lee1*
1Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan, R. O. C.;2Department of Applied Chemistry, National Chiao Tung University, Hsinchu 30010, Taiwan, R.O.C.

13:30 **Complex diffusion behaviour of oxygen in nanocrystalline BaTiO3 ceramics** EP2 48
Roger A. De Souza
Institute of Physical Chemistry, RWTH Aachen University and JARA-FIT, Landoltweg 2, 52056 Aachen, Germany

13:30 **INFLUENCE OF ELECTRON IRRADIATION ON p-n JUNCTIONS IN Si-Ge SUPERLATTICES** EP2 49
A.I. Siahlo 1), N.A. Poklonski 1), S.B. Lastovskii 2), H. Presting 3), N.A. Sobolev 4)
1) Belarusian State University, 220030 Minsk, Belarus; 2) Scientific-Practical Materials Research Centre, NAS of Belarus, 220072 Minsk, Belarus; 3) Daimler Research & Development Ulm, 89081 Ulm, Germany; 4) Departamento de Física and I3N, Universidade de Aveiro, 3810-193 Aveiro, Portugal

13:30 **AMORPHIZATION OF SYMMETRIC AlAs/GaAs SUPERLATTICES UPON ION IMPLANTATION** EP2 50
N.A. Sobolev 1), B. Breeger 2), H.T. Grahn 3), W. Wesch 2), E. Wendler 2)
1) Departamento de F?sica and I3N, Universidade de Aveiro, 3810-193 Aveiro, Portugal; 2) Institut f?r Festk?rperphysik, Friedrich-Schiller-Universit?t, 07743 Jena, Germany; 3) Paul-Drude-Institut f?r Festk?rperelektronik, 10117 Berlin, Germany

13:30 **ENHANCED RADIATION HARDNESS OF InAs/InP QUANTUM WIRES** EP2 51
N.M. Santos 1), N.A. Sobolev 1), J.P. Leitão 1), M.C. Carmo 1), D. Fuster 2), L. González 2), Y. González 2), W. Wesch 3)
1) Departamento de Física & I3N, Universidade de Aveiro, 3810-193 Aveiro, Portugal; 2) IMM-Instituto de Microelectrónica de Madrid (CNM-CSIC), 28760 Tres Cantos, Madrid, Spain; 3) Institut für Festkörperphysik, Friedrich-Schiller Universität, 07743 Jena, Germany

13:30 **Electrical Modulation of Local Conduction at BiFeO3-CoFe2O4 Tubular Interfaces** EP2 52
Ying-Hui Hsieh1, Evgheni Strelcov2, Jia-Ming Liou3, Yi-Chun Chen3, Sergei V. Kalinin2, Ying-Hao Chu1
1 Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 30010, Taiwan; 2 Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, United States; 3 Department of Physics, National Cheng Kung University, Tainan 70101, Taiwan

13:30 **Modelling Y2O3 in ODS steels: initial result for yttrium** EP2 53
Morten Nagel, Krister O. E. Henriksson
Department of Physics, P.O. Box 43 (Pietari Kalmin katu 2), FI-00014 University of Helsinki, Finland

13:30 **Luminescence of Macro and Nanocrystalline MgO excited by VUV synchrotron radiation** EP2 54
A.I. Popov (1,2), L. Shirmane (1), V. Pankratov (1), A. Lushchik (3), V.E. Serga (4), A. Kotlov (5), J. Zimmermann (6)
(1) Institute of Solid State Physics, Univ of Latvia, Riga, LV-1063, Latvia; (2) Institute Laue-Langevin, F-38042 Grenoble, France; (3) Institute of Physics, Univ of Tartu, Tartu, 51014, Estonia; (4) Riga Tech Univ, Inst Inorganic Chemistry, LV-2169 Salaspils, Latvia; (5) HASYLAB, DESY, Hamburg, D-22761, Germany; (6) TU Darmstadt, D-64287 Darmstadt, Germany;

13:30 **Defect-induced red emission in Y2O3-ZrO2 nanopowders** EP2 55
N. Korsunska1, V. Papusha1, O. Kolomys1, V. Strelchuk1, A. Kuchuk1, V. Kladko1, Yu. Bacherikov1, T. Konstantinova2, L. Khomenkova1
1) V. Lashkaryov Institute of Semiconductor Physics, 45 Pr. Nauky, Kyiv 03028, Ukraine 2) Donetsk Institute for Physics and Engineering named after O.O. Galkin of the NASU, 72 R. Luxemburg str., Donetsk 83114, Ukraine

13:30 **The role of grain boundaries on light species behavior in nanostrutured W** EP2 56
M. Panizo-Laiz 1, N. Gordillo 1, E. Tejado 2, J. Y. Pastor 2, F. Munnik 3 J. M. Perlado 1, R. Gonzalez-Arrabal 1
1-Instituto de Fusi?n Nuclear, ETSI de Industriales, Universidad Polit?cnica de Madrid, C/ Jos? Gutierrez Abascal, 2, E-28006 Madrid, Spain. 2-Departamento de Ciencia de Materiales CISDEM, ETSI de Caminos, Universidad Polit?cnica de Madrid, E-28040 Madrid, Spain. 3-Forschungszentrum Dresden-Rossendorf, PO.Box 10119, D-01314 Dresden, Germany.

13:30 **Van der Waals surface evolutions in III-VI layered crystals under neutron irradiation** EP2 57
O.M.Sydor, Z.D.Kovalyuk
Chernivtsi Department of the Institute of Materials Science Problems, the National Academy of Sciences of Ukraine, Iryna Vilde St., 5, Chernivtsi, 58001, Ukraine

13:30 **Influence of strontium titanate antiferrodistortive phase transition on the magnetic properties of La0.7Sr0.3MnO3 thin films** EP2 58
D. A. Mota1, Y. Romaguera Barcelay1, A. M. R. Senos2, C. M. Fernandes2, P. B. Tavares3, I. T. Gomes4, P. Sá4, L. Fernandes4, B. G. Almeida4, F. Figueiras5, P. Mirzadeh Vaghefi5, V. S. Amaral5, J. Fontcuberta6, A. Almeida1 and J. Agostinho Moreira1
1. IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia da Faculdade de Ciências da Universidade do Porto. Rua do Campo Alegre, 687, 4169-007 Porto, Portugal. 2. Department of Materials and Ceramics Engineering, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal. 3. Centro de Química – Vila Real. Universidade de Trás-os-Montes e Alto Douro. Apartado 1013, 5001-801. Vila Real. Portugal. 4. Centro de Física. Universidade do Minho, P-4710-057 Braga, Portugal. 5. Department of Physics & CICECO, University of Aveiro, 3810-193 Aveiro, Portugal. 6. Institut de Ciència de Materials de Barcelona (ICMAB–CSIC) Campus UAB, Bellaterra 08193, Spain.

13:30 **Defect-induced magnetism in V-doped titanium dioxide** **EP2 59**
A. Smekhova*,1, O. Yildirim2,4, M. Butterling2, S. Cornelius2, Yu. Mikhailovskiy1, A.Novikov1, A. Semisalova1,5, A. Orlov3, E. Gan'shina1, N. Perov1, W. Anwand2, A.Wagner2, K. Potzger2, A.B. Granovsky1
1 M.V. Lomonosov Moscow State University, Leninskie Gori 1, 119991 Moscow, Russia; 2 Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstrasse 400, 01328 Dresden, Germany; 3 Federal State Research and Design Institute of Rare Metal Industry, B. Tolmachevsky lane 5-1, 119017 Moscow, Russia; 4 Institute for Physics of Solids, Technical University Dresden, Zellescher Weg 16, 01069 Dresden, Germany; 5 Lappeenranta University of Technology, Skinnarilankatu 34, 53850 Lappeenranta, Finland

13:30 **Adeshion and mechanical properties of implanted nanostructured tungsten** **EP2 60**
N. Gordillo 1, E. Tejado 2, M. Panizo-Laiz 1, J. Y. Pastor 2, J. M. Perlado 1, and R. Gonzalez-Arrabal 1
1 Instituto de Fusión Nuclear, ETSI de Industriales, Universidad Politécnica de Madrid, C/ José Gutierrez Abascal, 2, E-28006 Madrid, Spain; 2 Department of Materials Science- Research Centre on Safety and Durability of Structures and Materials (CISDEM) , UPM-CSIC, C/ Profesor Aranguren s/n,E- 28040, Madrid, Spain

13:30 **DFT calculations of charge states on rough Si and Cu surfaces** **EP2 61**
Avaz Ruzibaev, Flyura Djurabekova
Department of Physics and Helsinki Institute of Physics, University of Physics

13:30 **Magneto-optic study of undoped and Mn-doped ZnO thin films** **EP2 62**
F. Oliveira (1), M.F. Cerqueira (1), M.I. Vasilevskiy (1), T. Viseu (1), J. Ayres de Campos (1), A.G. Rolo (1), I. Bogdanović-Radović (2) and E. Alves (3)
(1) Centro de Física, Universidade do Minho, Campus de Gualtar 4710-057 Braga, Portugal; (2) Rudjer Boskovic Institute, Bijenicka cesta 54, 10000 Zagreb, Croatia; (3) Associação Euratom/IST, Instituto de Plasmas e Fusão Nuclear, Instituto Superior T?cnico, Universidade de Lisboa, Av. Rovisco Pais, 1049-001, Lisboa, Portugal

13:30 **Influence of the impure fluorine ions on the electronic structure and optical properties of cadmium molybdate compounds** **EP2 63**
V. Chornii, S. Nedilko, Yu. Hizhnyi, T. Nikolaenko, M. Slobodyanik, O. Gomenyuk(1), V. Sheludko (1)
Taras Shevchenko National University of Kyiv, 64, Volodymyrs'ka str., 01601 Kyiv, Ukraine (1) Oleksandr Dovzhenko Hlukhiv National Pedagogical University, 24 Kyjevo-Moskovs'ka st., 41400, Glukhiv, Ukraine

13:30 **Surface plasmon resonance enhancement of visible range photoluminescence in Au-ZnO nanocomposite films synthetized by reactive magnetron sputtering** **EP2 64**
W. Chamorro 1 2, P. Miska1 2, F. Soldera3, F. Mucklich3, P. Pigeat1 2, D. Horwat1 2
1 Université de Lorraine, Institut Jean Lamour, UMR7198, Nancy, F-54011, France 2 CNRS, Institut Jean Lamour, UMR7198, Nancy, F-54011, France 3 Departame of Materials Science and Engineering, Saarland University, D-66123 Saarbrücken, Germany

13:30 **Effect of grain refinement by severe plastic deformation on the evolution of the microstructure of a 316L austenitic stainless steel during ion irradiation** **EP2 65**
Prasath Babu REVATHY RAJAN, Auriane ETIENNE, Isabelle MONNET, Bertrand RADIGUET, Xavier SAUVAGE, Nariman A. ENIKEEV, Rualan Z. VALIEV
Groupe de Physique des Matériaux, UMR-CNRS 6634, Université de Rouen, 76801 Saint Etienne du Rouvray cedex, France; CIMAP, CEA/CNRS/ENSICAEN/ Universite de Caen-Basse Normandie, F-14070 Caen Cedex 5, France; Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa 450000, Russia

13:30 **Molecular dynamics simulation study of grain boundary effect on stress and mass transport in metallic thin films** **EP2 66**
Tomasz Zientarski-1, Dariusz Chocyk-2
1Department for the Modelling of Physico-Chemical Processes, Maria Curie-Sklodowska University, ul. Gliniana 33, 20-614 Lublin, Poland, email: martom@dyzio.umcs.lublin.pl 2Department of Applied Physics, Lublin University of Technology, ul. Nadbystrzycka 38, 20-618 Lublin, Poland, email: d.chocyk@pollub.pl

13:30 **Irradiation as a tool for interface defect modification in a-Si:H/c-Si heterojunction solar cells** **EP2 67**
A. Defresne, O. Plantevin, I. P. Sobkowicz, Pere Roca i Cabarrocas
CSNSM, Univ Paris-Sud, CNRS/IN2P3, Orsay, France; CSNSM, Univ Paris-Sud, CNRS/IN2P3, Orsay, France; LPICM-CNRS, Ecole Polytechnique, 91128 Palaiseau, France; LPICM-CNRS, Ecole Polytechnique, 91128 Palaiseau, France

13:30 **INTENSE GREEN PHOTOLUMINESCENCE IN GdAlO3-d POWDERS (d= 0.0, 0.1 AND 0.2)** **EP2 68**
Kh. Dhahri (a), M. Bejar (a), E. Dhahri (a), F. Amaral (b,c), M.A. Sousa (c), M.J. Soares (c), M.F.P. Graça (c)
(a) Laboratoire de Physique Appliquée, Faculté des Sciences, B.P. 1171, 3000 Sfax, Université de Sfax, Tunisie; (b) Polytechnic Institute of Coimbra, 3045-601 Coimbra, Portugal; (c) I3N and Physics Department, University of Aveiro, 3810-193 Aveiro, Portugal;

13:30 **Nanodefects in oxides doped LiF cdrystals** **EP2 69**
L. Lisitsyna, V. Lisitsyn
Tomsk State University of Architecture and Building, sq. Soljianajia 2, Tomsk, 634003 Russia; National Research Tomsk Polytechnic University, av.Lenina 30, Tomsk, 634050 Russia

13:30 **Stress changes in thin films bonded on polycrystalline substrate: molecular dynamics simulation** **EP2 70**
Dariusz Chocyk 1, Tomasz Zientarski 2,
1Department of Applied Physics, Lublin University of Technology, ul. Nadbystrzycka 38, 20-618 Lublin, Poland; email: d.chocyk@pollub.pl 2Department for the Modelling of Physico-Chemical Processes, Maria Curie-Sklodowska University, ul. Gliniana 33, 20-614 Lublin, Poland; email: martom@dyzio.umcs.lublin.pl,

13:30 **An object kinetic Monte Carlo study of the influence of high grain boundary density on He retention in tungsten** **EP2 71**
G. Valles(1), I. Martín-Bragado(2), O. Peña-Rodríguez(1), R. González-Arrabal(1), J. M. Perlado(1), A. Rivera(1)
(1)Instituto de Fusión Nuclear, ETSI de Industriales, Universidad Politécnica de Madrid, C/ José Gutierrez Abascal, 2, E-28006 Madrid, Spain;(2)IMDEA Materials Institute, C/ Eric Kandel 2, 28906 Getafe, Madrid, Spain

13:30 **Understanding the origin of the dead-layer at the La0.7Ca0.3MnO3/SrTiO3 Interface** **EP2 72**
Juan Rubio-Zuazo 12, Alicia de Andrés2, and Germán R. Castro 12
1 SpLine Spanish CRG BM25 Beamline at the ESRF BP 220-38043 Grenoble Cedex, France 2 Instituto de Ciencia de Materiales de Madrid-ICMM/CSIC; Cantoblanco, E-28049 Madrid, Spain

13:30 **Ab initio simulation of the initial steps of the ODS particle formation process in bcc iron matrix.** **EP2 73**
Yu. A. Mastrikov1, P. V. Vladimirov2, V.A. Borodin3, A. Gopejenko1, Yu.F. Zhukovskii1, E. A. Kotomin1, A. Möslang2
1Institute for Solid State Physics, University of Latvia, Kengaraga str. 8, Riga, Latvia 2Institut für Angewandte Chemie, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, D-76344 Eggenstein-Leopoldshafen, Karlsruhe, Germany 3 National Research Centre Kurchatov Institute, 1, Akademika Kurchatova pl., Moscow, 123182, Russia

13:30 **S-monolayer-doping of InGaAs films and its contactless characterization by Raman scattering** **EP2 74**
R. Cusco [1] , N.Domenech-Amador [1] , P. Y. Hung [2] , W.Y. Loh [2] , L. Artus [1]
[1] Institute Jaume Almera (CSIC), Barcelona, Spain ; [2] SEMATECH, 257 Fuller Road, Suite 2200, Albany, NY 12203

13:30 **Tailoring soft magnetic properties in amorphous FeZr films by low energy ion implantation** **EP2 75**
Anders Hallén, Atieh Zamani, Reda Moubah, Gabriella Andersson, Martina Ahlberg,Petra E. Jönsson
Anders Hallén; KTH Royal Institute of Technology, School of ICT, P.O. Box Electrum 229, SE-164 40 Kista-Stockholm, Sweden Atieh Zamani, Reda Moubah, Gabriella Andersson, Martina Ahlberg Petra E. Jönsson; Department of Physics and Astronomy, Uppsala University, Box 516, SE 751 20 Uppsala, Sweden

15:45 **Break**

16:00 **PLENARY SESSION**

29 May 2014

Nanostructures in silica : William Weber

09:00 **Enhanced optical functionalities in silica by doping with Au-based nanostructures.** **EO10 1**
T. Cesca, B. Kalinic, C. Maurizio, C. Scian, P. Mazzoldi, G. Mattei
University of Padova, Dept. of Physics and Astronomy and CNISM, Padova, Italy

09:30 **Influence of doping on the optical properties of silicon nanocrystals embedded in SiO2** **EO10 2**
M. Frégnaux, R. Khelifi, Y. Le Gall, D. Muller and D. Mathiot
Université de Strasbourg, CNRS, Laboratoire ICube (UMR 7357), 23 rue du Loess, BP 20, F - 67037 Strasbourg cedex 2

09:45 **Structural and electrical properties of heavily arsenic doped silicon nanocrystals embedded in silicon oxynitride films** **EO10 3**
F Ehrhardt1, C Ulhaq-Bouillet2, G Ferblantier1, D Muller1 and A Slaoui1
1- Laboratoire ICube, Universit? de Strasbourg, CNRS UMR 7357, 23 rue du Loess, B.P. 20, F-67037 Strasbourg , France 2-Laboratoire IPCMS, UMR CNRS-UdS 7504, 23 rue du Loess, BP43, 67034 STRASBOURG, France

10:00 **Break**

Effect of defects on properties of nanomaterials : Christina Trautmann

10:30 **Defect-Engineering in Silicon Nanostructures for Enhanced Thermopower** **EO11 1**
N. Bennett (1,2), D. Byrne (1), A. Cowley (1).
(1) Nanomaterials Processing Lab., School of Electronic Engineering, Dublin City University, Dublin 9, Ireland; (2) Institute of Mechanical, Process and Energy Engineering, School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, EH14 4AS, United Kingdom.

10:45 **Europium doping of β-Ga2O3 bulk crystals and nanowires** **EO11 2**
M. Peres [a], M. Felizardo [a], N. Franco [a,b], L.C. Alves [a], E. Alves [a,b], K. Lorenz [a,b], E. Nogales [c], I. López [c], B. Méndez [c], J. Piqueras [c], J. Rodrigues [d], T. Monteiro [d], E. G. Víllora [e], K. Shimamura [e]
[a] Instituto Superior Técnico (IST), Campus Tecnológico e Nuclear, Estrada Nacional 10, P-2695-066 Bobadela LRS, Portugal; [b] IPFN, IST, Portugal; [c] Dpto. Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain; [d] Departamento de Física e i3N, Universidade de Aveiro, 3810-193 Portugal; [e] National Institute for Materials Science, 1-1 Namiki, Tsukuba 305-0044, Japan

11:00 **Role of defects in optical properties of germanium quantum dots** **EO11 3**
S. Saeed, K. Dohnalova, T. Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands

11:15 **Silicon LEDs fabricated using Plasma Ion Implantation** **EO11 4**
M.P. Bradley, S. Purdy, J.R. McLeod
Dept. of Physics & Engineering Physics University of Saskatchewan

11:30 **Hindering Influence of Surface Point-Defects for Photoactivity on TiO2(110)** **EO11 5**
I. Lyubinetsky, Z.-T. Wang, N. A. Deskins, M. A. Henderson
Pacific Northwest National Laboratory, Richland, WA, USA

11:45 **Swift heavy ion beam modification of rutile TiO2 for photo-catalysis applications** **EO11 6**
R. Sanz1, L. Romano1-2, V. Scuderi1, M. Zimbone1, G. Impellizeri1, J. Jensen3, V. Privitera1
1.IMM-CNR MATIS, via S. Sofia 64, 95123 Catania, Italy 2.Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy 3.Thin Film Physics Division, Department of Physics, Chemistry and Biology – IFM, Linköping University, SE-581 83 Linköping, Sweden

12:00 **Lunch**

Reshaping of nanomaterials by swift heavy ions : Mark Ridgway (to be confirmed)

14:00 **Novel nanowire and nanotube structures produced by ion-track technology** **EO12 1**
C. Trautmann1,2, I.Alber1, L. Movsesyan1, 2, A. Spende1,2, M.E. Toimil-Molares1
1 GSI Helmholtz Centre for Heavy Ion Research, Planckstr. 1, Darmstadt, Germany; 2 Technische Universit?t Darmstadt, Alarich-Weiss-Str. 4, Darmstadt, Germany

14:30 **Stopping Power Dependence on Shape Elongation of Zn Nanoparticles under Swift Heavy Ion Irradiations** **EO12 2**
H. Amekura, N. Ishikawa, N. Okubo, S. Mohapatra, D.K. Avasthi
National Institute for Materials Science (NIMS), Tsukuba, Japan; Japan Atomic Energy Agency (JAEA), Tokai, Japan; Guru Gobind Singh Indraprastha University, New Delhi, India; Inter-University Accelerator Centre (IUAC), New Delhi, India

14:45 **In-situ study of shape variations in metallic nanoparticles irradiated with swift heavy ions** **EO12 3**
O. Peña-Rodríguez, J. Olivares, A. Rivera, L. Rodríguez-Fernández, A. Crespo-Sosa, J.C. Cheang-Wong, and A. Oliver
1Instituto de Fusión Nuclear, UPM, José Gutiérrez Abascal 2, E-28006 Madrid, Spain 2Centro de Micro-Análisis de Materiales, UAM, Cantoblanco, E-28049 Madrid, Spain 3Instituto de Óptica, CSIC, C/Serrano 121, E-28006 Madrid, Spain 4Instituto de Física, UNAM, A.P. 20-364, México D.F. 01000, México

15:00 **Ion-Beam Shaping and Plasmon Mapping of Hollow Gold Nanoparticles** **EO12 4**
P.-E. Coulon, J. Amici, M.-C. Clochard, I. Monnet, V. Khomenkov, C. Dufour, M. Kociak, L. Largeau, G. Rizza
LSI, Ecole Polytechnique, 91128 Palaiseau Cedex, France ; PMC, Ecole Polytechnique, 91128 Palaiseau Cedex, France ; CIMAP, 14070 Caen Cedex 5, France ; LPS, Bâtiment 510, Université Paris Sud XI, 91405 Orsay, France ; LPN, Site Alcatel de Marcoussis, Route de Nozay, 91460 Marcoussis, France

15:15 **STRESS FIELD/DISTRIBUTION AROUND SWIFT HEAVY ION TRACKS IN Al2O3** **EO12 5**
J.H. O'Connell(a), V.A. Skuratov(b), N.Kirilkin(b), J. Neethling(a)
(a)CHRTEM, Nelson Mandela Metropolitan University, Port Elizabeth; (b)FLNR, Joint Institute for Nuclear Research, Dubna, Russia

15:30 **Break**

Swift heavy ion irradiation and carbon-based materials : Marcel Toulemonde

16:00 **Confining ion tracks in 2D organic materials: the case of ultrathin polymer layers** **EO13 1**
R. M. Papaléo 1, R. S. Thomaz 1, L. I. Gutierres 1, V. M. de Menezes 1, P. L. Grande 2, E. M. Bringa 3, C. T. Trautmann 4
1 Faculty of Physics, Catholic University of Rio Grande do Sul, Porto Alegre, Brazil; 2 Institute of Physics, Federal University of Rio Grande do Sul, Porto Alegre, Brazil; 3 Instituto de Ciências Basicas, Universidad Nacional de Cuyo, Mendoza, Argentina; 4 Gesellschaft für Schwerionenforschung, Darmstadt, Germany

16:30 **Atomistic simulations of ion irradiation-induced nanotracks** **EO13 2**
Alejandro Prada 1, José Olivares 2, Ovidio Peña-Rodríguez 1, Mathieu Bailly-Grandvaux 1, María José Caturla 3, Eduardo Bringa 4, José Manuel Perlado 1,Antonio Rivera 1
1. Instituto de Fusión Nuclear, Univerisdad Politécnica de Madrid, C/José Gutiérrez Abascal 2, E-28006 Madrid, Spain; 2. Centro de Micro-Análisis de Materiales, Universidad Autónoma de Madrid (CMAM-UAM), Cantoblanco, E-28049 Madrid, Spain; 3. Instituto de Óptica, Consejo Superior de Investigaciones Científicas (IO-CSIC), C/Serrano 121, E-28006 Madrid, Spain; 4. Independent Researcher CONICET, Instituto de Ciencias Básicas, Universidad Nacional de Cuyo, Mendoza, Argentina

16:45 **Fluorescent nanodiamonds by low energy irradiation** **EO13 3**
Paolo Coppo, Andrea Mazzocut, Alan Reynolds, Lorna Anguilano
Paolo Coppo; Andrea Mazzocut: Wolfson Centre Brunel University, Kingston Lane, Uxbridge, UB8 3PH United Kingdom Alan Reynolds; Lorna Anguilano: ETC Brunel University, Kingston Lane, Uxbridge, UB8 3PH United Kingdom

17:00 **Turning an organic semiconductor into a stable low-resistance material by ion implantation** **EO13 4**
B.Fraboni1, A.Scidà1, P.Cosseddu2, Y.Q. Wang3, M. Nastasi4, S.Milita5 and A.Bonfiglio2
1Dipartimento di Fisica e Astronomia, Università di Bologna, viale Berti Pichat 6/2, 40127 Bologna, Italy 2Dipartimento di Ingegneria Elettrica ed Elettronica, Università di Cagliari, piazza d'Armi, 09123 Cagliari, Italy and CNR-INFM S3 via Campi 213/a 41100 Modena 3Los Alamos National Laboratory MS-K771 Los Alamos NM 87545 USA 4 Center for Energy Sciences Research, University of Nebraska –Lincoln, Lincoln, NE U.S.A 5 IMM-CNR Bologna

Nuclear materials I : Anatoly Dvurechenskii

09:00 **Radiation damage evolution in nanocomposites** EO14 1
Blas Pedro Uberuaga
Los Alamos National Laboratory, Los Alamos, New Mexico, USA 87545

09:30 **The effect of electron-ion interactions on the primary radiation damage in alpha-Fe** EO14 2
S. L. Daraszewicz, D. M. Duffy
London Centre for Nanotechnology, Department of Physics and Astronomy, University College London (UCL), Gower Street, WC1E 6BT, London, UK

09:45 **Development of object kinetic Monte Carlo models for nanostructural evolution in iron alloys** EO14 3
Monica Chiapetto, Lorenzo Malerba, Charlotte Becquart
SCK-CEN (Mol, Belgium), Université des Sciences et Technologies de Lille

10:00 **Break**

Nuclear materials II : Blas Uberuaga

10:30 **Mechanism of He impurity buildup-induced nanopore and fuzz formation in W** EO15 1
A. Lasa, K.O.E. Henriksson, and K. Nordlund
Association Euratom-Tekes - Department of Physics, University of Helsinki, Finland

11:00 **He Blister Suppression by Swift Heavy Ions in Nanocrystalline ZrN** EO15 2
A. Janse van Vuuren(a), V. A. Skuratov(b) J.H. Neethling(a), V.V. Uglov(c) and S. Petrovich(d)
(a)CHRTEM, NMMU, Port Elizabeth, South Africa, (b)FLNR, JINR, Dubna, Russia, (c)BSU, Minsk, Belarus, (d)VINCA Institute of Nuclear Sciences, BU, Belgrade, Serbia

11:15 **Nano-oxide nucleation and interaction with hydrogen in nano-composite steels** EO15 3
M.G. Ganchenkova (1), V.A. Borodin (2)
(1) NRNU MEPhI, Kashirskoe Sh. 31, 115409, Moscow, Russia ; (2) NRC Kurchatov Institute, Moscow, 123182, Russia

11:30 **Raman microscopy as a defect microprobe for hydrogen bonding characterization in materials used for thermonuclear fusion applications** EO15 4
C. Pardanaud1, Y. Addab1, C. Martin1, N. Mellet1, G. Giacometti1, P. Roubin1, B. Pegourie2, M. Oberkofler3, M Koppen3, T. Dittmar3, Ch. Linsmeier3, C. Hopf4, T. Schwarz-Selinger4, W. Jacob4
1 Aix-Marseille Universit?-CNRS, PIIM, 13397 Marseille cedex 20, France; 2CEA, IRFM, 13108 Saint-Paul-lez-Durance, France; 3 Forschungszentrum J?lich GmbH, Institut f?r Energie- und Klimaforschung - Plasmaphysik, 52425 J?lich, Germany 4Max-Planck-Institute f?r Plasmaphysik, EURATOM Association, Boltzmannstr. 2, 85748 Garching, Germany.

11:45 **Final discussions**

12:15 **Lunch**

SYMPOSIUM F

Established and emerging nanocolloids: from synthesis & characterization to applications

Symposium Organizers:

Pascal André, University of St Andrews, UK

Mathieu Maillard, LMI / Département de Chimie, Villeurbanne , France

Gordana Dukovic, University of Colorado Boulder, USA

Laurence Motte, Université Paris 13, Bobigny, France

Richard Tilley, School of Chemical and Physical Sciences, Wellington, New Zealand

26 May 2014

Synthesis, Characterisation and «Self/triggered» Assembly of nanoColloids : Laurence Motte, Mathieu Maillard, Liberato Manna

09:00 **Colloidal InorganicNanocrystals: their Assemblyand the Study of their Chemical and Structural Transformations** **F.I. 1**
Liberato Manna
Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova (Italy)

09:30 **In Situ Characterization of Silver Nanoparticle Synthesis in Maltodextrin Supramolecular Structures** **F.I. 2**
Nelson S. Bell, Darren R. Dunphy, Timothy N. Lambert, Ping Lu† and Timothy J. Boyle
Nelson S. Bell; Timothy N. Lambert; Ping Lu; and Timothy J. Boyle Sandia National Laboratories P.O. Box 5800 Albuquerque, NM 87185 Darren R. Dunphy; University of New Mexico Center for Microengineered Materials Department of Chemical and Nuclear Engineering Albuquerque, NM 87131-0001

09:45 **Ultrathin gold nanowires: growth mechanism and assembly by nanoxerography** **F.I. 3**
L.-M. Lacroix, P. Moutet, A. Loubat, M. Imperor-Clerc, L. Ressier, G. Viau
LPCNO, Universite de Toulouse, INSA-UPS-CNRS UMR 5215, F-31077 Toulouse, France LPS, Universite Paris-Sud CNRS UMR 8502, Bat. 510, F-91405 Orsay, France

10:00 **Self-Assembly of Colloidal Hexagonal Bipyramid- and Bifrustum-shaped ZnS Nanocrystals into Two-Dimensional Superstructures** **F.I. 4**
Ward van der Stam, Anjan P. Gantapara, Quinten A. Akkerman, Giuseppe Soligno, Johannes D. Meeldijk, René van Roij, Marjolein Dijkstra, and Celso de Mello Donegá
Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, Utrecht University, P.O. Box 80000, 3508 TA Utrecht (The Netherlands); Soft Condensed Matter, Debye Institute for Nanomaterials Science, Utrecht University, Princetonplein 5, 3584 CC Utrecht (The Netherlands); Institute for Theoretical Physics, Utrecht University, Leuvenlaan 4, 3584 CE Utrecht (The Netherlands); Electron Microscopy Utrecht, Utrecht University, 3584 CH Utrecht (The Netherlands)

10:15 **Discussion/Coffee Break**

10:30 **Green Nanolab in a Leidenfrost Drop** **F.I. 5**
R. Abdelaziz1, M. Elbahri1,2
1 Nanochemistry and Nanoengineering, Institute for Materials Science, Faculty of Engineering, University of Kiel, Kaiserstrasse 2, 24143 Kiel, Germany. 2 Institute of Polymer Research, Helmholtz-Zentrum Geesthacht, Max-Planck-Str. 1, 21502 Geesthacht, Germany

10:45 **Ultrasmall silicon nanoparticles: preparation strategies and bioapplications** **F.I. 6**
N. Licciardello* □, C.-W. Hsu □, E. A. Prasetyanto □, S. Hunoldt §, K. Viehweger §, H. Stephan §, L. De Cola □
□ Institut de Science et d'Ingénierie Supramoléculaires (I.S.I.S.) Université de Strasbourg, France; □ Karlsruher Institut für Technologie (KIT) Karlsruhe, Germany; § Helmholtz-Zentrum Dresden-Rossendorf Institute of Radiopharmaceutical Cancer Research (HZDR) Dresden, Germany

11:00 **Shape- and size- controlled synthesis of self-assembly Supercrystals from Various Polyhedral nanocrystals** **F.I. 7**
Chun-Ya Chiu, Michael H. Huang
Department of Chemistry, National Tsing Hua University, Hsinchu 30013, Taiwan

11:15 **Turkevich in new robes: 3 key questions answered for an old gold nanoparticle synthesis** **F.I. 8**
Maria Wuithschick, Aexander Birnbaum, Klaus Rademann, Jörg Polte
Humboldt-Universität zu Berlin, Insitut für Chemie, Brook-Taylor-Str. 2, 12489 Berlin

11:30 **Synthesis of metal oxide nanoparticles. Shape control.** **F.I. 9**
Susagna Ricart,1 Alba Garzón-Manjón1,2, Eduardo Solano1,2, Leonardo Perez-Mirabet2, María de la Mata1, Roger Guzmán1, Jordi Arbiol1, Teresa Puig1, Xavier Obradors1, Ramón Yáñez2, Josep Ros2
1) Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Cerdanyola del Vallès, Barcelona, Span. 2) Dept. Química, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Barcelona, Spain

11:45 **MAGNETIC NANOPARTICLES, 2D AND 3D STRUCTURES BY MICROWAVE ASSISTED THERMAL DECOMPOSITION** **F.I. 10**
Oana Pascu, Muling Zeng, Anna Laromaine, Gervasi Herranz, Anna Roig
Institut de Ciència de Materials de Barcelona (CSIC) Campus de la UAB, 08193 Bellaterra, CATALONIA, SPAIN

12:00 **Lunch Break**

Optical & Magnetic Probing of nanoParticles : Pascal André, Richard Tilley, Jean-Yves Bigot

13:45 **Ultrafast magnetism in nanoparticles studied with femtosecond laser pulses** **F.II. 1**
J.-Y. Bigot*, H. Kesserwan, V. Halté, M. Vomir
Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg and CNRS 23 rue du Loess, 67034 Strasbourg, France

14:15 **Optical properties of HgTe nanocrystals** **F.II. 2**
G. Allan a, C. Delerue a A. Al-Otaify b, D.J. Binks b, S.V. Kershaw c, S. Gupta c, A.L. Rogach c
aIEMN-Department ISEN, UMR CNRS 8520, Lille 59046, France. bSchool of Physics and Astronomy & Photon Science Institute, University of Manchester, Oxford Road, Manchester M13 9PL, UK. cDepartment of Physics and Materials Science & Centre for Functional Photonics (CFP), City University of Hong Kong, Hong Kong S.A.R.

14:30 **AFM-Raman study of assembling of carbon and gold nano-particles** **F.II. 3**
Angelina D Orlando, Guy Louarn, Jean-Yves Mevellec and Bernard Humbert
Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, B.P. 32229, 44322, Nantes cedex 3, France Angelina.d.Orlando@cnrs-imn.fr

14:45 **Synthesis of flexible magnetoelectric hybrid films: CoFe2O4 nanoparticles inside ferroelectric polyvinylidene fluoride (PVDF) matrix** **F.II. 4**
Laurence Ourry 1, Sofia Marchesini 1, Ngo Thi Lan 2, Silvana Mercone 2, Damien Faurie 2, Fathi Zighem 2, Sophie Nowak 1, Michel Delamar 1, Souad Ammar 1, Fayna Mammeri 1
1 ITODYS, Université Paris Diderot, Sorbonne Paris Cité, 75013 Paris, France 2 LSPM, Université Paris Nord, Sorbonne Paris Cité, 93430 Villetaneuse, France

15:00 **Evaluation of the elastic properties of assemblies of nanoparticles by ultrafast opto-acoustics** **F.II. 5**
A. Ayouch(1), X. Dieudonné(2), G. Vaudel(1), H. Piombini(2), K. Valle(2), P. Belleville(2), V. Gusev(1) , P. Ruello(1)
(1) Institut des Molécules et Matériaux du Mans, UMR-CNRS 6283, Université du Maine, Avenue O. Messiaen, 72085 Le Mans, France (2) CEA, DAM, Le Ripault, BP 16, 37260 Monts, France

15:15 **Enhanced optical and nonlinear optical properties of silicon carbide nanoparticles through fluorescent-plasmonic coupling for cell labeling applications** **F.II. 6**
Maxime Boksebeld1, Ning Sui1, Marie-Virginie Salvia1, Virginie Monnier1, Yuriy Zakharko2, Vladimir Lysenko2, Luigi Bonacina3, Jean-Marie Bluet2, Yann Chevolot1, Eliane Souteyrand1
1- Universit? de Lyon, Institut des Nanotechnologies de Lyon?INL, UMR CNRS 5270, Site Ecole Centrale de Lyon, 36 Avenue Guy de Collongue, F-69134 Ecully Cedex, France 2- Universit? de Lyon, Institut des Nanotechnologies de Lyon?INL, UMR CNRS 5270, Site Ecole INSA Lyon, 7 Avenue Jean Capelle, F-69621 Villeurbanne Cedex, France 3- GAP Biophotonics, University of Geneva, 22 Chemin de Pinchat, CH-1211 Geneva 4, Switzerland.

15:30 **Evidence of anomalous magnetic behaviour in tuned YCrO3 nanoparticles** **F.II. 7**
Inderjeet Singh, Amreesh Chandra
Department of Physics, Indian Institute of Technology, Kharagpur, 721302 West Bengal, India

15:45 **Discussion/Coffee Break**

Synthesis and Crystallinity of nanoColloids : Richard Tilley, Laurence Motte, Colin Raston

16:00 **Materials synthesis using vortex fluidics** **F.III. 1**
Colin L. Raston
Centre for Nanoscale Science and Technology, School of Chemical and Physical Sciences, Flinders University, Bedford Park, SA 5042, Australia Email colin.raston@flinders.edu.au

16:30 **Nanoparticle hetero-dimers** **F.III. 1**
Melissa R. Dewi, Thomas Nann*
Ian Wark Research Institute, University of South Australia, Mawson Lakes Blvd, Adelaide, SA 5095, Australia

16:45 **Synthesis of CeO2 nanoassemblies using a flow-type reactor and their structural change during reaction** **F.III. 2**
Andrzej-Alexander Litwinowicz 1, Seiichi Takami 2, Daisuke Hojo 3, Nobuaki Aoki 3, Tadafumi Adschiri 2,3
1 Graduate School of Engineering, Tohoku University; 2 Institute of Multidisciplinary Research for Advanced Materials, Tohoku University; 3 WPI-AIMR, Tohoku University

17:00 **Length Matters – How the Ligand Chain Length Affects Nanocrystal Size in the Hot Injection Synthesis** **F.III. 3**
K. De Nolf, R. K. Capek, S. Abé, M. Sluydts, Y. Jang, E. Lifshitz, Z. Hens
Physics and Chemistry of Nanostructures, Ghent University; Schulich Faculty of Chemistry, Russell Berrie Nanotechnology Institute, Solid State Institute, Technion-Israel Institute of Technology; Center for Molecular Modeling, Ghent University

17:15 **Synthesis of air and water stable Cobalt nanorods** **F.III. 4**
Sergio Lentijo Mozo (1), Reasmey Tan (1), Teresa Hungria (1), Christophe Gatel (2), Benoit Cormary (1), Cécile Marcelot (1,2), Pierre-Francesco Fazzini (1), Marc Respaud (1), Katerina Soulantica (1)
(1) Université de Toulouse; INSA, UPS, CNRS, LPCNO 135 avenue de Rangueil, 31077 Toulouse, France. (2) Centre d'Elaboration de Matériaux et d'Etudes Structurales (CNRS), 29, rue Jeanne Marvig, 31055 Toulouse, France.

17:30 **Synthesis of HgTe QDs in the 1000-2500nm spectral range** **F.III.. 5**
Laxmi Kishore Sagar1, 2, Pieter Geiregat1, 2, 3, Stijn Flamée1, 2, Jonathan De Roo1, 2, Yolanda Justo1, 2 and Zeger Hens1, 2
1 Photonics Research Group, University of Ghent, Ghent, Belgium 2 Physics and Chemistry of Nanostructures group, University of Ghent, Ghent, Belgium 3Center for Nano and Biophotonics, University of Ghent, Ghent, Belgium

Poster Session :
Pascal André, Gordanna Dukovic, Mathieu Maillard, Laurence Motte, Richard Tilley

17:50 **Plasmonic enhancement of photocurrent in MoS2 field-effect-transistor** **F.P. 1**
Jiadan Lin1, Hai Li2, Hua Zhang2, Wei Chen1,3,4
1Department of Physics, National University of Singapore, 2 Science Drive 3, Singapore, 117542 2School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 3Department of Chemistry, National University of Singapore, 3 Science Drive 3, Singapore, 117543 4Graphene Research Centre, National University of Singapore, 2 Science Drive 3, Singapore, 117542

17:50 **Structural Properties of Gold Thin Films Deposited on Technologically Important Substrates by RF Magnetron Sputtering** **F.P. 2**
Moniruzzaman Syed1)*, Caleb Glaser2), Michael Schell2), Indrajith Senevirathne2)
1Division of Natural and Mathematical Sciences, Lemoyne-Owen College, Memphis, TN38126, USA 2Department of Geology and Physics, Lock Haven University of Pennsylvania, Lock Haven, PA 17745, USA

17:50 **EFFECT OF POLY(VINYL ALCOHOL) ADDITION ON RHEOLOGICAL PROPERTIES OF CERAMIC SLURRIES BASED ON YTTRIA AND NANOCOLLOIDAL BINDER** **F.P. 3**
Marcin Malek1, Pawel Wisniewski2, Hubert Matysiak2, Krzysztof Jan Kurzydlowski1
1Faculty of Materials Science and Engineering, Warsaw University of Technology, POLAND 2Functional Materials Research Centre, Warsaw University of Technology. POLAND * Corresponding author: marcin.malek@inmat.pw.edu.pl

17:50 **3D anti-counterfeiting microtags of upconverting NaYF4 colloidal nanocrystals by AFM nanoxerography** **F.P. 4**
Pierre Moutet*, Neralagatta M. Sangeetha*, Delphine Lagarde*, Gregory Sallen*, Bernhard Urbaszek*, Xavier Marie*, Guillaume Viau* and Laurence Ressier*
* Université de Toulouse, LPCNO, INSA-CNRS-UPS, 135 Avenue de Rangueil, Toulouse, 31077, France

17:50 **Can graphene quantum dots be used as photocatalysts?** **F.P. 5**
Siobhan J. Bradley, Thomas Nann
Ian Wark Research Institute, University of South Australia, Mawson Lakes Blvd, Adelaide, SA 5095, Australia

17:50 **Synthesis and Phase Transfer of Monodisperse Iron Oxide (Fe3O4) Nanocubes** **F.P. 6**
Melissa R. Dewi, William M. Skinner, Thomas Nann
Ian Wark Research Institute, University of South Australia, Mawson Lakes Blvd, Adelaide, SA 5095, Australia

17:50 **Fast, microwave assisted synthesis of monodisperse refractory metal oxide nanoparticles** **F.P. 7**
Jonathan De Roo, Katrien De Keukeleere, Jonas Feys, Petra Lommens, Zeger Hens and Isabel Van Driessche
Ghent University, Department of Inorganic and Physical Chemistry

17:50 **Noble metal nanoparticles films: controlled synthesis by ultrasonic spray pyrolysis and catalytic effect** **F.P. 8**
Yanpeng Fu, Yan Lu, Martha Ch. Lux-Steiner, Christian-Herbert Fischer
Helmholtz-Zentrum Berlin für Materialien und Energie

17:50 **Quantum Confinement-Tunable Ultrafast Charge Transfer at the PbS Quantum Dot and PCBM Fullerene Interface** **F.P. 9**
Ala'a O. El-Ballouli, Erkki Alarousu, Marco Bernardi, Shawkat M. Aly, Alec P. Lagrow, Osman M. Bakr, and Omar F. Mohammed
1- Ala'a O. El-Ballouli; Erkki Alarousu; Shawkat M. Aly; Alec P. Lagrow; Osman M. Bakr; Omar F. Mohammed. Solar and Photovoltaics Engineering Research Center, Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal 23955-6900, Kingdom of Saudi Arabia 2- Marco Bernardi. Department of Physics, University of California at Berkeley, Berkeley, California 94720-7300, USA

17:50 **Understanding Different Single-Molecular ZnS Precursors for High Quality InP/ZnS Nanocrystal Synthesis** **F.P. 10**
Lifei Xi, Deok-Yong Cho, Martial Duchamp, Jun Yan Lek, Walter Tillmann, Astrid Besmehn, Christopher B. Boothroyd, Yeng Ming Lam, Beata Kardynal
Peter Grünberg Institute, Semiconductor Nanoelectronics (PGI-9), Microstructure Research (PGI-5) and ER-C, Central Institute for Engineering, Electronics and Analytics (ZEA-3), Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, CSCMR and FPRD, Department of Physics and Astronomy, Seoul National University, Seoul 151-747, Republic of Korea, School of Materials Science and Engineering, Nanyang Technological University, 639798, Singapore, Institute of Technical and Macromolecular Chemistry/DWI an der RWTH Aachen e.V. and Institute of Materials in Electrical Engineering and Information Technology 2 (IWE2), RWTH, Aachen, D-52056 Aachen, Germany

17:50 **Controlled Preparation of Ultrafine Spherical LLM-105** **F.P. 11**
Juan Zhang*, Peng Wu, Feiyan Gong, Chun Liu, Yu Chi, Ping Wang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang 621900, Sichuan, China

17:50 **Stable NIR-absorbing Lanthanum Hexaboride Nanoparticle Formulations for Laser Welding Applications of Thermoplastic Polymers** **F.P. 12**
Claudia Rieser, Karin Peter, Martin Moeller
DWI – Leibniz Institute for Interactive Materials, Aachen, Germany

17:50 **Using Two Self-Assembling Materials to Hierarchical Structure and Non-Simple Nanopatterns** **F.P. 13**
Jin Wook Lee, Gu Hwan Jung, Jung Ki Lee and Seung Hyun Kim*
Division of Nano-Systems Engineering, Inha University

17:50 **Electrodeposition and Mechanical Properties of Porous Copper Using Colloidal Crystal Templating** **F.P. 14**
M. Mieszala, M. Hasegawa, J.M. Wheeler, R. Raghavan, J. Michler and L. Philippe
Empa - Swiss Federal Laboratories for Materials Science and Technology Laboratory for Mechanics of Materials and Nanostructures Feuerwerkerstrasse 39, Thun CH-3602, Switzerland

17:50 **Synthesis and characterization of TiO2 nano-colloid obtained by laser ablation in water** **F.P. 15**
M. Zimbone b) G. Cacciato a), b), Ruy Sanz b), L. Romano a) ,R. Reitano a),V. Privitera b),c), M. G. Grimaldi a), b)
a) Dipartimento di Fisica ed Astronomia-Università di Catania, via S. Sofia 64, 95123 Catania, Italy b)MATIS IMM-CNR, via S. Sofia 64, 95123 Catania, Italy c) CNR-IMM, Stradale Primosole 50, I-95121 Catania, Italy

17:50 **Characterization of Submicron HNIW Prepared by a Planetary Ball Milling Technology** **F.P. 16**
Peng Wu*, Juan Zhang, Zhijian Yang, Zhiqiang Qiao, Jun Wang, Guangcheng Yang
Institute of Chemical Materials, China Academy of Engineering Physics

17:50 **Preparation of superamphiphobic coating by combining fluoroalkyl silane with nano silica** **F.P. 17**
Fang Wang, Zhongkuan Luo,Li Zhou, Puqi Chen
College of Chemistry and Chemical Engineering ,Shenzhen University

17:50 **SATISFACTORY DESCRIPTION OF THE OPTICS IN A PHOTONIC CRYSTAL WITH A ONE-DIMENSIONAL STRATIFIED MODEL** **F.P. 18**
Isabelle Maurin, Elias Moufarej, Athanasios Laliotis, Daniel Bloch
Laboratoire de Physique des Lasers, CNRS, UMR 7538, Université Paris 13, Sorbonne Paris-Cité, 99 avenue Jean-Baptiste Clément, 93 430 VILLETANEUSE, FRANCE

17:50 **Reconstruction of nanosized tungstate structure from EXAFS spectra by evolutionary algorithm** **F.P. 19**
J. Timoshenko 1, A. Anspoks 1, A. Kalinko 12, A. Kuzmin 1
1 Institute of Solid State Physics, University of Latvia, Kengaraga street 8, LV-1063 Riga, Latvia; 2 Synchrotron SOLEIL, l'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France

17:50 **Synthesis of 1D nanomaterials for transparent electrodes** **F.P. 20**
Bastien BESSAIRE (1,2) , Mathieu MAILLARD (1) , Caroline CELLE (2) , Jean-Pierre SIMONATO (2) , Arnaud BRIOUDE (1)
(1) Université Lyon 1 – Laboratoire des Multimatériaux et Interfaces – UMR 5615
(2) CEA Grenoble – DRT/LITEN/DTNM/LCRE

17:50 **Synthesis and characterization of mixed ligand chiral nanoclusters** **F.P. 21**
Zekiye Pelin Guven, Kellen M. Harkness, Hikmet Coskun, Francesco Stellacci, Ozge Akbulut
Sabanci University, EPFL

17:50 **Laser-induced transient and permanent changes of absorption of gold nanorods in colloid solution** **F.P. 22**
I.Dmitruk, Y.Shynkarenko, A.Dmytruk, C.Sönnichsen, Yu. Khalavka, A.Kotko, I.Blonskyi
Institute of Physics, National Academy of Sciences of Ukraine, Taras Shevchenko National University of Kyiv, Ukraine; Institute of Physics, National Academy of Sciences of Ukraine; Institute of Physics, National Academy of Sciences of Ukraine; Institute for Physical Chemistry, University of Mainz, Germany; Chernivtsi National University, Ukraine; Frantsevich Institute for Problems of Materials Science, Kyiv, Ukraine; Institute of Physics, National Academy of Sciences of Ukraine

17:50 **Synthesis and Properties of Pt@Ag Core@Shell Nanocolloids for Biosensing Applications** **F.P. 23**
Anh T.N. Dao, Derrick M. Mott, Shinya Maenosono
School of Materials Science, Japan Advanced Institute of Science and Technology

17:50 **Fabrication of Micro and Nano Structure via Photo Resist-Free Process Using Polystyrene Beads for Solar Cell Application** **F.P. 24**
Changheon Kim1,2, Jonghwan Lee1, Sangwoo Lim2 and Chaehwan Jeong1
1. Applied Optics & Energy Research Group, Korea Institute of Industrial Technology, Gwangju 500-480, South Korea 2. Department of Chemical and Biomolecular Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 120-749, South Korea

17:50 **Preparation of microcapsules containing electrically tunable photonic crystal ink** **F.P. 25**
Sujung Kim, Chul Am Kim, Hojun Ryu
Electronics & Telecommunications Research Institute

17:50 **Superparamagnetic Iron Oxide Nanoparticles (SPION) labeled with Alexa Fluor® 750 as multimodal imaging agents - synthesis and physicochemical characterization** **F.P. 26**
Gabriela Kania, Weronika Górka, Szczepan Zapotoczny, Maria Nowakowska
Faculty of Chemistry, Jagiellonian University in Krakow, Ingardena 3, 30-060 Krakow, Poland

17:50 **Semiconductor quantum dots in homogeneous multiplexed FRET immunoassays** **F.P. 27**
K. David Wegner, Xue Qiu, Niko Hildebrandt
NanoBioPhotonics, Institut d'Electronique Fondamentale, Université Paris-Sud, Orsay (France). www.nbp.ief.u-psud.fr

17:50 **Study on the Thermal Stability of Blue Phases by Addition of Mesogenic Thiol Ligand Modified Gold Nanoparticles** **F.P. 28**
Jihye Lee[1], Sung-Kyu Hong[2] and Hyun Jung[1,*]
[1] Advanced Functional Nanohybrid Material Laboratory, Department of Chemistry, Dongguk University, Seoul-campus, 30 Pildong-ro 1-gil, Jung-gu, Seoul, 100-715, Korea; [2] Department of Chemical & Biochemical Engineering, Dongguk University, Seoul-campus, 30 Pildong-ro 1-gil, Jung-gu, Seoul, 100-715, Korea

17:50 **Room temperature ferromagnetic response in CeO2 and Cu doped CeO2 nanocapsules crystallized under droplet confinement** **F.P. 29**
Inderjeet Singh1,2, Samet H. Varol2, Katharina Landfester2, Rafael Muñoz-Espí2, Amreesh Chandra1
1 Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302 West Bengal, India 2 Max Planck Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany

17:50 **TOXICOLOGY OF Fe2O3-SiO2 CORE-SHELL NANOPARTICLES: ANALYSIS OF THEIR POTENTIAL THROMBOTIC, INFLAMMATORY AND HAEMOLYTIC EFFECTS** **F.P. 30**
S. Grandi1, C. Achilli2, G.F. Guidetti2, A. Ciana2 , E. Quartarone1, D. Capsoni1, G. Minetti2
1 Dep. of Chemistry and INSTM, University of Pavia, V.le Taramelli 12, 27100 Pavia, Italy. 2 Department of Biology and Biotechnology «L. Spallanzani «, Laboratories of Biochemistry, University of Pavia, Via Bassi 21, 27100 Pavia, Italy.

17:50 **Silver Nanoparticles Decorated DNA: An Ultrasensitive SERS Substrate** **F.P. 31**
Dipanwita Majumdar, Achintya Singha, Prasanna Kumar Mondal, Subrata Kundu
Department of Physics, Bose Institute, 93/1, Acharya Prafulla Chandra Road, Kolkata 700009, India; Department of Physics, Bose Institute, 93/1, Acharya Prafulla Chandra Road, Kolkata 700009, India; Astroparticle Physics and Cosmology Division, Saha Institute of Nuclear Physics, 1/AF, Bidhannagar, Kolkata 700064, India; Electrochemical Materials Science (ECMS) Division, CSIR–Central Electrochemical Research Institute (CECRI), Karaikudi 630006, India

17:50 **Preparation of Ag colloids by laser ablation in water: effect of target surface characteristics on nanoparticles distribution** **F.P. 32**
A. Resano-Garcia, Y. Battie, A. En Naciri, N. Chaoui
LCP-A2MC, Institut Jean Barriol, Université de Lorraine, 1 Bd Arago, 57070 Metz, France

17:50 **Fabrication of magneto-thermo-responsive microgels** **F.P. 33**
Katharina Wiemer, Karla Dörmbach, Garima Agrawal, Andrij Pich, Ulrich Simon
Katharina Wiemer; Ulrich Simon Institute for Inorganic Chemistry of RWTH Aachen University, Landoltweg 1, 52074 Aachen Karla Dörmbach; Garima Agrawal; Andrij Pich Leibniz Institute of Interactive Materials DWI and Institute for Technical and Macromolecular Chemistry of RWTH Aachen University, Forckenbeckstraße 50, 52056 Aachen, Germany

17:50 **CESIUM SALT OF 12-TUNGSTOPHOSPORIC ACID AS NANO CATALYST** **F.P. 34**
Elif AKBAY, Gülberk DEMİR
Anadolu Unıv., Faculty of Eng., Dept. Of Chemical Eng.,Eskişehir, Turkey

17:50 **Synthesis of CdTe nanocrystals: ligand effect on morphological and functional properties** **F.P. 35**
Francesca Di Benedetto, Maria Lucia Protopapa, Luigi Bucci, Anna Grazia Scalone, Marilena Re, Luciana Algieri, Roberta Rosato, Maria Elena Mosca, Leander Tapfer
ENEA – Italian National Agency for New Technologies, Energy and Sustainable Economic Development – Technical Unit for Materials Technologies - Brindisi Research Center

17:50 **Study on the separation of nucleation and growth in silica nanoparticles microfluidic synthesis** **F.P. 36**
Bert De Roo, Alexander Schwamberger, David Jacob, Lutz Bruegemann, Jin Won Seo, Jean-Pierre Locquet
Department of Solid State Physics and Magnetism, KU Leuven, Belgium; Bruker AXS/TU Dortmund, Germany; Corduan Technologies, France; Bruker AXS, Germany; Department of Metallurgy and Materials Engineering, KU Leuven Belgium; Department of Solid State Physics and Magnetism, KU Leuven, Belgium

17:50 **A study on the formation of luminescent and stable CdS nanoparticles using Pleurotus ostreatus** **F.P. 38**
M.N. Borovaya, A.P. Naumenko, Ya.V. Pirko, T.A. Krupodorova, A.I. Yemets, Ya.B. Blume
M.N. Borovaya, Ya.V. Pirko, T.A. Krupodorova, A.I. Yemets, Ya.B. Blume; Institute of Food Biotechnology and Genomics, Natl. Acad. of Sci. of Ukraine; A.P. Naumenko; Department of physics, Taras Shevchenko National University

17:50 **Optical Spectroscopy of Single Carbon Dots** **F.P. 39**
Ming Fu , Jacek Stolarczyk, Jochen Feldmann, Yu Wang, Andrey L. Rogach
Photonics and Optoelectronics Group, Department of Physics and CeNS, Ludwig-Maximilians-Universität München, Amalienstrasse 54, D-80799 München, Germany; Photonics and Optoelectronics Group, Department of Physics and CeNS, Ludwig-Maximilians-Universität München, Amalienstrasse 54, D-80799 München, Germany; Photonics and Optoelectronics Group, Department of Physics and CeNS, Ludwig-Maximilians-Universität München, Amalienstrasse 54, D-80799 München, Germany; Department of Physics and Materials Science and Centre for Functional Photonics (CFP), City University of Hong Kong, Hong Kong SAR; Department of Physics and Materials Science and Centre for Functional Photonics (CFP), City University of Hong Kong, Hong Kong SAR;

17:50 **Synthesis, characterization and optical properties of graphene containing colloid material** **F.P. 40**
S. Nedilko(a), S. Revo(a), V. Chornii(a), M. Nedielko(b), Yu. Sementsov(c)
(a) Taras Shevchenko National University of Kyiv, Volodymyrska Street 64/13, 01601, Kyiv, Ukraine; (b) E.O. Paton Electric Welding Institute of NASU, Kyiv, Ukraine; (c) Chuiko Institute of Surface Chemistry, NASU, Kyiv, Ukraine

17:50 **Hybrid ZnO:Polystyrene Nanocomposite for All Polymer Photonic Crystals** **F.P. 41**
Paola LOVA 1,2,6,Luca BOARINO 3, Michele LAUS 4, Giulia URBINATI 5, Franco MARABELLI 5, Cesare SOCI 6, Davide COMORETTO 2
1 Interdisciplinary Graduate School, Energy Research Institute at NTU (ERI@N), Nanyang Technological University, Singapore; 2 Department of Chemistry and Industrial Chemistry, University of Genoa, Italy; 3 National Institute of Metrological Research (INRIM), Italy; 4 Department of Life Sciences, University of Eastern Piedmont, Italy; 5 Department of Physics, University of Pavia, Italy; 6 Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore.

17:50 **Controlled growth of CdS nanoparticles in LTL colloidal zeolite** **F.P. 42**
V. De Waele[a], A. Souici[b], K.-L. Wong[c], J. L. Marignier[c], I. De Waele[a] , M. Mostafavi[b] S. Mintova[c]
[a] LASIR, UMR8516 CNRS-Université de Lille 1, Cité scientifique, F-59655 Villeneuve d'Ascq, France [b] Laboratoire de Chimie Physique, UMR-8000, CNRS – UPS, Bat. 349, Orsay 91405, France ; Tel : 33 16915 7887 [c] Laboratoire Catalyse et Spectrochimie, ENSICAEN - Université de Caen – CNRS, 6, Boulevard du Maréchal Juin, 14050 Caen, France

17:50 **Synthesis and compositional control of size monodisperse SixGe1-x alloy nanocrystals for optoelectronic applications** **F.P. 43**
Darragh P. Carolan, Keith Linehan, Hugh Doyle
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

17:50 **One pot two steps synthesis of water soluble functionalized gold nanoparticles** **F.P. 44**
Romain Aufaure, Yoann Lalatonne, Laurence Motte and Erwann Guénin
Laboratoire CSPBAT (UMR7244) ; LPBS ; Université Paris 13 ; France

17:50 **The effect of pressure on structural and electrical properties of nanocrystalline CdS** **F.P. 45**
A. A. Ebnalwaled
Electronics & Nano Devices Lab, Physics Department, Faculty of Science, South Valley University, Qena, 83523 Egypt Corresponding author: e-mail: kh_ebnalwaled@yahoo.com

17:50 **SUPERPARAMAGNETIC NANOPARITCLES FOR IMMUNO IMAGING OF BRAIN TUMORS BY MRI** **F.P. 46**
Sophie Richard 1, Amaury Herbet 2, Marianne Boucher 3, Yoann Lalatonne 1, Sébastien Mériaux 3, Jean-Philippe Hugnot 4, Didier Boquet 2, Laurence Motte 1
1 Université Paris 13, UMR 7244 CNRS, Bobigny, 93017, France; 2 CEA de Saclay, iBiTecS, LIAS, Gif sur Yvette, 91191, France; 3 CEA de Saclay, Neurospin, Gif sur Yvette, 91191, France; 4 Institut de Neuroscience de Montpellier, INSERM U1051, Montpellier, 34091, France;

17:50 **Graphene Complex Cellular Networks** **F.P. 47**
Suelen Barg, Felipe Macul Perez, Na Ni, Paula do Vale Pereira, Esther Garcia-Tuñon, Salvador Eslava, Cecilia Mattevi, Eduardo Saiz
Centre for Advanced Structural Ceramics, Department of Materials, Imperial College London, London SW7 2AZ, United Kingdom

17:50 **Hydrogenation of nanomaterials for high rate capability lithium ion batteries** **F.P. 48**
Jingxia Qiu, Evan Gray, Shanqing Zhang
Centre for Clean Environment and Energy Environmental Futures Centre Griffith School of Environment

Bio-inspired Systems and Bio-Applications of nanoColloids : Laurence Motte, Erwann Guenin, Yoann Lalatonne, Florence Gazeau

09:00 **Intracellular transformation of inorganic nanoparticles: how to conciliate theranostic efficiency with long term degradability in the organism?** **F.IV. 1**
Florence Gazeau
Laboratoire Matière et Systèmes Complexes, CNTS / Université Paris Diderot

09:30 **Silicon Carbide Quantum Dots: Properties and Application** **F.IV. 2**
David Beke, Zsolt Szekrenyes, Istvan Balog, Katalin Kamaras, Balazs Rozsa, Istvan Palfi, Pál A. Maák, Adam Gali
Wigner Research Centre for Physics; Institute of Experimental Medicine; Budapest University of Technology and Economics;

09:45 **Dextrin nanomagnetogels: in vivo performance as dual modality imaging bioprobe** **F.IV. 3**
Gonçalves, C.(a), Antunes, I. F.(b), Lalatonne, Y.(c), Ferreira, M.F.M.(d), Geraldes, C.F.G.C.(e), Motte, L.(c),Martins, J.A.(d), de Vries, E. F. J.(b),Gama, F.M.(a)
(a) IBB-Institute for Biotechnology and Bioengineering, Centre for Biological Engineering, Minho University, Campus de Gualtar 4710-057, Braga, Portugal (b) Dept. of Nuclear Medicine and Molecular Imaging, University of Groningen, University Medical Center of Groningen, Hanzeplein 1, 9713 GZ Groningen, The Netherlands (c) CSPBAT Laboratory, UMR 7244 CNRS, Université Paris 13, Sorbonne Paris Cité, Bobigny, France (d) Chemistry Department, Minho University, Campus de Gualtar, 4710-057 Braga, Portugal (e) Departamento de Ciências da Vida, Faculdade de Ciência e Tecnologia, Centro de Neurociências e Biologia Celular e Centro de Química, Universidade de Coimbra, Portugal

10:00 **Interactions of well-engineered nanoparticles and skin** **F.IV. 4**
Rute Fernandes(1), Neil R. Smyth (2), Simone Nitti (3), Michael R. Arden-Jones(2), Antonios G. Kanaras (1)
(1) Physics and Institute of Life Sciences, Faculty of Physical and Applied Sciences, University of Southampton, Southampton, United Kingdom, SO171BJ (2) Faculty of Medicine, University of Southampton, Southampton, United Kingdom, SO171BJ (3) Istituto Italiano di Technologia, Via Morego 30, 16163 Genova, Italy.

10:15 **Discussion/Coffee Break**

10:30 **A Feasibility Study of NanoSERS Probe for Cancer Prognosis** **F.IV. 5**
Shuai He, Fahima Jaleel Khan, James Kah
Department of Biomedical Engineering, National University of Singapore, Singapore.

10:45 **Diamond nanocolloid: synthesis, characterization, and biomedical applications** **F.IV. 6**
Naoki Komatsu, Li Zhao, Toku Yasuda, Hongmei Qin, Takahide Kimura
Shiga University of Medical Science

11:00 **Air and Water Stable Gold Coated Gadolinium Metal Synthesized by Alkalide Reduction.** **F.IV. 6**
Michael J. Wagner, Ming Zhang
The George Washington University

11:15 **Weakly luminescent nanocrystals that make exceptional single-molecule probes** **F.IV. 8**
Daniel J. Gargas, Emory M. Chan, Alexis D. Ostrowski, P. James Schuck, and Bruce E. Cohen
The Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA

11:30 **Introduction to Magnetic Particle Spectroscopy and Imaging, its potential Applications, and the need for optimized and functionalized SPIO Contrast Agents** **F.IV. 9**
Jochen Franke
Bruker BioSpin MRI GmbH, Germany

11:45 **Lunch Break**

Colloidal nanoPlasmonics : Mathieu Maillard, Laurence Motte, Stephan Link

13:15 **Collective Plasmon Modes in Nanoparticle Assemblies** **F.V. 1**
Stephan Link
Rice University Department of Chemistry

13:45 **Size dispersion effect on plasmonic responses of Au and Ag nanocolloidal solutions.** **F.V. 2**
Y. Battie, A. Resano-Garcia, N. Chaoui, A. En Naciri
LCP-A2MC, Institut Jean Barriol, Université de Lorraine, 1 Bd Arago, 57070 Metz, France

14:00 **Chiral Nanoparticles for Visible and Ultraviolet Plasmonics** **F.V. 3**
Kevin M. McPeak,1 Christian D. van Engers,1 Mark Blome,2,3 Jong Hyuk Park,1,4 Sven Burger,2,3 Miguel Angel Gosálvez Ayuso,5,6 Ava Faridi,1 Yasmina R. Ries,1 Ayaskanta Sahu,1 David J. Norris 1
1 Optical Materials Engineering Laboratory, Department of Mechanical and Process Engineering, ETH Zurich, 8092 Zurich, Switzerland; 2 Zuse Institute Berlin, 14195 Berlin, Germany; 3 JCMwave GmbH, 14050 Berlin, Germany; 4 Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology, Seoul 136-791, South Korea; 5 Donostia International Physics Center, San Sebastian 20018, Spain; 6 Centro de Física de Materiales, University of the Basque Country, San Sebastian 20018, Spain

14:15 **Template-assisted self-assembly of Gold nanoparticles into helicoidal superstructures** **F.V. 4**
J. Cheng,1 E. Pouget, 1 S. Lecomte, 1 P. Barois, 2A. Aradian, 2 Marie-Hélène Delville3 and Reiko Oda 1
1CBMN-IECB 5248, Chimie et Biologie des Membranes et Nano-objets, Institut Européen de Chimie et Biologie, 2 Rue Robert Escarpit, 33607 Pessac France; 2CRPP Centre de Recherche Paul Pascal, Centre de Recherche Paul Pascal.115 Avenue Schweitzer, 33600 Pessac France; 3ICMCB 9048, Institut de Chimie de la Matiere Condensee de Bordeaux, 87 Av du Dr Schweitzer, 33608 Pessac France.

14:30 **Enhanced dipolar coupling evidenced in 2D assemblies of silver and gold nanoparticles** **F.V. 5**
Y. Liu, S. Begin-Colin, B.P. Pichon, C. Leuvrey, D, Ihiawakrim, M. Rastei, G. Schmerber, M. Vomir, J.Y.Bigot
Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504, CNRS, Université de Strasbourg, 23, rue du Loess, 67034 Strasbourg Cedex

14:45 **Silver-containing colloidale zeolites: a promising materials for plasmonic chemistry** **F.V. 6**
V. De Waele[1}, Biao Dong[2], S. Mintova{2], F. Kawtharani[1], R. Retoux[3], O. Poizat[1], G. Buntinx[1]
1 Laboratory of Infrared and Raman Spectroscopy (LASIR), CNRS-University of Lille1, 59650 Villeneuve d'Ascq, France, e-mail: vincent.dewaele@univ-lille1.fr 2 Laboratory of Catalysis and Spectroscopy (LCS), ENSICAEN, CNRS, University of Caen, 6 Bd Maréchal Juin, 14050 Caen, France 3 CRISMAT, ENSICAEN, CNRS, University of Caen, 6 Bd Maréchal Juin, 14050 Caen, France

15:00 **Single Au nanorods and nanorod arrays for optical Hg detection** **F.V. 7**
Carola Schopf, Alfonso Martín Ruano, Daniela Iacopino
Tyndall National Institute, University College Cork, Cork, Ireland

15:15 **Gold nanoparticles for electron emission cancer treatment** **F.V. 8**
Mattias Vervaele 1, Cédric Spaas 1, Bert De Roo 1, Jin Won Seo 2, Jean-Pierre Locquet 1
1 Dept. of Physics and Astronomy, KU Leuven, 3001 Leuven, Belgium 2 Dept. of Metallurgy and Materials Engineering (MTM), KU Leuven, 3001 Leuven, Belgium

15:30 **Synthesis of Spiky Ag – Au Octahedral Nanoparticles and Their Tunable Optical Properties** **F.V. 9**
Srikanth Pedireddy, Anran Li, Michel Bosman, In Yee Phang, Shuzhou Li, Xing Yi Ling*
Nanyang Technological University, Singapore

15:45 **Discussion/Coffee Break**

Surfaces and Interfaces at nanometer Scales from Electronic to Catalysis : Richard Tilley, Erwann Guenin, Justin Holmes

16:00 **Shape-Sensitivity of Pd Nanocatalysts in Carbon-Carbon Coupling Reactions** **F.VII. 1**
Gillian Collins, Michael Schmidt, Colm O'Dwyer, Gerard P. McGlacken and Justin D. Holmes
Department of Chemistry, University College Cork, Ireland, Cork

16:30 **Synthesis, Optical Properties and Applications of Plasmonic Ag/Au Nanoprisms** **F.VII. 2**
Mohammad Mehdi Shahjamali, Can Xue*
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798, Singapore

16:45 **Bioinspired nanomaterials: synthesis, assembly and applications** **F.VII. 3**
Siddharth V. Patwardhan,* Khalid M. Alotaibi, Sher-Leen Goh, Lorraine T. Gibson, Claire Forsyth, Craig Drummond
University of Strathclyde, Department of Chemical and Process Engineering, Glasgow G1 1XJ.

17:00 **Monodisperse AuM (M=Pd, Rh, Pt) Bimetallic Nanocrystals for Enhanced Electrochemical Detection of H2O2** **F.VII. 4**
Tingting Han, Yuan Zhang, Jiaqiang Xu*
College of Science; Shanghai University

17:15 **SELF-ASSEMBLING AND ELECTROCHEMICAL PROPERTIES OF CdSe – CdS DOT-IN-RODS NANOPARTICLES** **F.VII. 5**
Benoît Boichard, Cyrille Hamon, Thomas Bizien, Alexandre Ciaccafava, Pascale Even-Hernandez, Elisabeth Lojou, Franck Artzner, Valérie Marchi
Université Rennes 1, Institut des Sciences Chimiques de Rennes, CNRS UMR 6226, Campus de Beaulieu, 35042 Rennes, France ; Université de Rennes 1, Institut de Physique de Rennes, CNRS UMR 6251, Campus de Beaulieu, 35042 Rennes, France ; Bioénergétique et Ingénierie des Protéines, Institut de Microbiologie de la Méditerranée, CNRS-AMU, 31 Chemin Aiguier, 13009 Marseille, France

17:30 **Immobilization of Palladium Nanoparticles on Three-Dimensionally Ordered Hierarchically Porous Tin Dioxide Inverse Opals for Catalytic Applications** **F.VII. 6**
Gillian Collins, Martin. Blömker, Michael. Osiak, J. D. Holmes, Michael Bredol, and C. O'Dwyer
Department of Chemistry, University College Cork, Cork, Ireland; Micro & Nanoelectronics Centre, Tyndall National Institute, Lee Maltings, Cork, Ireland; Centre for Research on Adaptive Nanostructures and Nanodevices, Trinity College Dublin, Dublin 2, Ireland; Materials and Surface Science Institute, University of Limerick, Limerick, Ireland; Department of Chemical Engineering, Münster University of Applied Sciences, Stegerwaldstraße 39, 48565 Steinfurt, Germany

17:45 **Atomically Well Defined Thiolate Gold Nanoclusters for Heterogeneous Catalysis** **F.VII. 7**
Christophe Lavenn,1 Florian Albrieux,2 Alain Tuel1 and Aude Demessence*1
1. Institut de Recherches sur la Catalyse et l'Environnement de Lyon, UMR 5256, CNRS / Université Lyon 1 - Villeurbanne, France. 2. Centre Commun de Spectrométrie de Masse, UMR 5246, CNRS / Université Lyon 1 - Villeurbanne, France.

18:00 **One-Dimensional Hybrid Metal-Metallic Oxide Composite Nanofibers Synthesis by Electrospinning and Applications** **F.VII. 8**
Xiaojiao YANG; Vincent SALLES; Mathieu MAILLARD; Arnaud BRIOUDE
Université Lyon 1 – Laboratoire des Multimatériaux et Interfaces – UMR 5615

18:15 **Hydrogen Sensing on Single Gold Nanorods by Surface Plasmon Spectroscopy** **F.VII. 9**
M Cittadini 1, S. Collins 2, P. Mulvaney 2, A. Martucci 1
1 Industrial Engineering Department, University of Padova, Padova, 35131, Italy; 2 School of Chemistry and Bio21 Institute, University of Melbourne, Parkville, Victoria 3010, Australia.

Emerging Nanoscale Materials : Richard Tilley, Pascal André, Amanda S. Barnard

09:00 **Exploring the probabilty and population of high index morphologies in metal colloids** **F.VII. 1**
Amanda S. Barnard
CSIRO Materials Science and Engineering

09:30 **Individualized colloidal Nanohelices SiO2 and SiO2@MxOy: new nanostructures for applications in NEMS devices** **F.VII. 2**
Dymtro Dedovets1,2, Satyabrata Si1, Emilie Pouget2, Sabrina Habtoun3, Said Houmadi3, Chistian Bergaud3, Reiko Oda2, Marie-Hélène Delville1*,
1 ICMCB/CNRS, Universite de Bordeaux, Pessac, France; 2 Chimie et Biologie des Membranes et des Nano-objets, allée de St Hilaire, 33600 Pessac, France 3 CNRS, LAAS, 7 avenue du Colonel Roche, F-31400 Toulouse, France *e-mail: delville@icmcb-bordeaux.cnrs.fr

09:45 **Increased stability of hollow gold nanospheres stabilized with mono-, bi- and tridentate PEG thiols** **F.VII. 3**
Julie Ruff, Ulrich Simon
Institute of Inorganic Chemistry, RWTH Aachen University, Landoltweg 1, 52074 Aachen, Germany

10:00 **Mixed ferrite nanoparticles for T1, T2 magnetic resonance imaging contrast agents** **F.VII. 4**
E.G. Petrova, D.A. Kotsikau, V.V. Pankov
Belarusian State University

10:15 **Discussion/Coffee Break**

10:30 **Synthesis and Characteristics of Cu-Zn-S Nanoparticle Materials for Sustainable Thermoelectrics** **F.VII. 5**
Derrick Mott, Maninder Singh, Shinya Maenosono
Japan Advanced Institute of Science and Technology, School of Materials Science, 1-1 Asahidai, Nomi, Ishikawa, 923-1211, Japan

10:45 **Lanthanide doped core-shell alkaline-earth fluoride colloids: interesting optical probes for biomedical applications** **F.VII. 6**
M. Pedroni, A. Speghini
Dipartimento di Biotecnologie and INSTM, Unita' di Verona, Universita' di Verona, Strada le Grazie 15, 37134 Verona, Italia

11:00 **Tuning the physical properties of Sr2+ doped BiFeO3 multifunctional ceramics** **F.VII. 7**
S K Mandal, and Amreesh Chandra
Department of Physics and Meteorology, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India.

11:15 **Molecular strategies toward original nanomaterials: sub-oxides and boron-based compounds** **F.VII. 8**
Vasana Maneeratana,4 Weiwei Lei,5 Julien Chaste,6 Dominique Mailly,6 Markus Antonietti,4 Clement Sanchez,1,2,3 David Portehault1,2,3,*
1 Sorbonne Universités, UPMC Univ Paris 06, UMR 7574, Chimie de la Matière Condensée de Paris, F-75005, Paris, France; 2 CNRS, UMR 7574, Chimie de la Matière Condensée de Paris, F-75005, Paris, France; 3 Collège de France, Chimie de la Matière Condensée de Paris, 11 place Marcelin Berthelot, 75231 Paris Cedex 05, France; 4 Max-Planck Institute for Colloids and Interfaces, Department of Colloid Chemistry, Research Campus Golm, 14424 Potsdam, Germany; 5 Institute for Frontier Materials, Deakin University, Waurn Ponds, Victoria 3216, Australia; 6 Laboratoire de photonique et de nanostructures, CNRS UPR 20, Route de Nozay, 91460 Marcoussis, France

11:30 **Formation and properties of SiC nano-particles colloids in non polar liquids** **F.VII. 9**
Hamza Hajjaji 1, Sergei Alekseev 2, David Philippon 3, Gérard Guillot 1, Philippe Vergne 3, Jean-Marie Bluet 1
1 Université de Lyon, CNRS, UMR 5270, INSA-Lyon, INL, F-69621 Villeurbanne, France 2 Chemistry Faculty, Kiev National Taras Shevchenko University, 01601 Kiev, Ukraine 3 Université de Lyon, CNRS, UMR5259, INSA-Lyon, LaMCoS, F-69621 Villeurbanne, France

11:45 **Lunch Break**

Photonic Properties & Spectroscopy of nanoColloids : Mathieu Maillard, TBC, Gabriele Rainò

13:45 **Core/Shell Semiconductor Quantum Heterostructures with Tailored Optical Properties** **F.VIII. 1**
G. Raino (1), T. Stoeferle (1), I. Moreels (2), Z. Hens (3), and R. F. Mahrt (1)
1- IBM Research ? Zurich, S?umerstrasse 4, 8803 Rueschlikon (Switzerland), 2 - Istituto Italiano di Tecnologia, via Morego 30, IT-16163 Genova, (Italy), 3 - Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, B-9000 Gent (Belgium)

14:15 **Excitation intensity dependent blinking statistics and quantum yield of Si/SiO2 and CdSe/ZnS QDs** **F.VIII. 2**
Benjamin Bruhn (1), Ilya Sychugov (2), Fatjon Qejvanaj (2), Jan Linnros (2), Tom Gregorkiewicz (1)
(1): Van der Waals-Zeeman Institute, University of Amsterdam, 1098XH Amsterdam, The Netherlands (2): Materials and Nanophysics, KTH Royal Institute of Technology, 16440 Stockholm, Sweden

14:30 **Intraband transitions in butyl-terminated Ge quantum dots** **F.VIII. 3**
Chris de Weerd, Katerina Dohnalova, Tom Gregorkiewicz
UvA-WZI

14:45 **Controlling the Emission Rate and Oscillation Strength via Shape-Control in 2D Colloidal Nanocrystals** **F.VIII. 4**
Sotirios Christodoulou,1 Hongbo Li,1 Rosaria Brescia,1 Mirko Prato,1 Giovanni Bertoni,1,2 Liberato Manna,1 and Iwan Moreels1
1 Istituto Italiano di Tecnologia, via Morego 30, IT-16163 Genova, Italy ; 2 IMEM-CNR, Parco Area delle Scienze 37/A, IT-43124 Parma, Italy.

15:00 **Amplified spontaneous emission from water-soluble CdSe/CdS quantum dot-in-rods** **F.VIII 5**
Francesco Di Stasio, Joel Q. Grim, Angelo Accardo, Vladimir Lesnyak, Francesco De Donato, Iwan Moreels, Roman Krahne
Istituto Italiano di Tecnologia, Via Morego 30, IT-16163 Genoa, Italy

15:15 **Size-dependent Phonon Confinement in Colloidal Si Nanoparticles Revealed via Raman Spectroscopy** **F.VIII. 6**
Pengfei Zhang, Yu Feng, Gavin Conibeer and Shujuan Huang
School of Photovoltaics and Renewable Energy Engineering (SPREE), the University of New South Wales (UNSW), Sydney 2052, NSW, Australia

15:30 **Study of InAs quantum dots in silicon obtained through ion implantation** **F.VIII. 7**
M.A. Sortica [1; 2] , B. Canut [1], M. Hatori [2], P. L. Grande [2], J.F. Dias [2], N. Chauvin [1], O. Marty [3]
[1] Université de Lyon; Institut des Nanotechnologies de Lyon INL-IMR5270, CNRS, INSA de Lyon, Villeurbanne, F-69621 Villeurbanne, France; [2] Instituto de Fisica, Universidade Federal do Rio Grande do Sul (IF-UFRGS), Av. Bento Gonçalves 9500, 91501-970, Porto Alegre (RS), Brazil; [3] Université de Lyon, Institut des Nanotechnologies de Lyon INL-IMR5270, CNRS, Université Lyon 1, Villeurbanne, F-69621 Villeurbanne, France

15:45 **Discussion/Coffee Break**

16:00 **PLENARY SESSION**

nanoColloidal Hybrid Systems : Pascal André, Laurence Motte, Michel Calame

09:00 **Emerging functionality in nanoparticles arrays** **F.IX. 1**
Michel Calame
Physics Department and Swiss Nanoscience Institute, University of Basel Klingelbergstrasse 82, 4056 Basel, Switzerland michel.calame@unibas.ch

09:30 **Memory with Colloidal Si-SiO2 nanoparticles embedded in Hybrid organic-inorganic Dielectrics** **F.IX. 2**
Caiming SUN, Xiaohua CHEN, Jun DU
Nano and Advance Materials Institute (NAMI) Limited, Units 608-9, 6/F, Lakeside 2, No 10 Science Park West Avenue, Hong Kong Science Park, Shatin NT, Hong Kong

09:45 **Physical reasons of emission variation of CdSeTe/ZnS quantum dots at the bioconjugation** **F.IX. 3**
T. V. Torchynska`1, G. Polupan2
1ESFM– National Polytechnic Institute, México D. F. 07738, México 2ESFM–National Polytechnic Institute, México D. F. 07738, México

10:00 **From semiconductor nanocrystals to artificial graphene and topological insulator** **F.IX. 4**
E. Kalesaki, C. Delerue, C. Morais Smith, W. Beugeling, G. Allan, D. Vanmaekelbergh
IEMN-Department of ISEN, UMR CNRS 8520, 59046 Lille, France ; Physics and Materials Science Research Unit, University of Luxembourg, 162a avenue de la Faïencerie L-1511 Luxembourg, Luxembourg ; Institute for Theoretical Physics, University of Utrecht, 3584 CE Utrecht, Netherlands ; Debye Institute for Nanomaterials Science, University of Utrecht, 3584 CC Utrecht, Netherlands

10:15 **Discussion/Coffee Break**

10:30 **Chemical Stability Enhancement via Electron Transfer Phenomenon in Core@Shell Heterostructured Nanoparticle System** **F.IX. 5**
Anh T. N. Dao, Prerna Singh, Aparna Wadhwa, Daisuke Hotta, Derrick Mott, Shinya Maenosono
School of Materials Science, Japan Advanced Institute of Science and Technology

10:45 **Atomistic Simulations of the Surface Coverage of Large Gold Nanocrystals** **F.IX. 6**
Takieddine Djebaili (a,b), Johannes Richardi (a,b), Stéphane Abel (c) and Massimo Marchi (c)
(a) Sorbonne Universités, UPMC Univ Paris 06, UMR 8233, MONARIS, F-75005, Paris, France (b) CNRS, UMR, MONARIS, F-75005, Paris, France (c) Commissariat à l'Energie Atomique et aux Energies Alternatives, DSV/iBiTEC-S/SB2SM/LBMS & CNRS UMR 8221, Saclay, France.

11:00 **Role of surface passivation on radiative properties of Silicon quantum dots – study by single quantum dot spectroscopy** **F.IX. 7**
B. van Dam, B. Bruhn, K. Dohnalova
Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098XH Amsterdam, The Netherlands

11:15 **Chalcogenol ligand toolbox for CdSe nanocrystals and their influence on exciton relaxation pathways** **F.IX. 8**
Jannise J. Buckley, Elsa Couderc, Stephen E. Bradforth, and Richard L. Brutchey
Department of Chemistry and the Center for Energy Nanoscience, University of Southern California, Los Angeles, California 90089, United States

11:30 **High-yield synthesis of nanocolloids with valence** **F.IX. 9**
A. Désert1, C. Hubert2, L. Moulet1, J. Majimel1, A. Thill3, E. Bourgeat-Lami4, M. Lansalot4, E. Duguet1, S. Ravaine2
1 CNRS, Univ. Bordeaux, ICMCB, UPR 9048, 33600 Pessac, France 2 CNRS, Univ. Bordeaux, CRPP, UPR 8641, 33600 Pessac, France 3 DSM/IRAMIS/SIS2M/LIONS, UMR CEA/CNRS 3299, 91191 Gif-sur-Yvette, France 4 Université de Lyon, Univ. Lyon 1, CPE Lyon, CNRS, UMR 5265, LCPP group, 69616 Villeurbanne, France

11:45 **Lunch Break**

Energy Conversion and Storage : Gordanna Dukovic, Mathieu Maillard, Tim Lian

13:15 **Photo-driven charge separation and H2 generation in mutlifunctional colloidal nanorod heterostructures** **F.X. 1**
Tianquan Lian
Department of Chemistry, Emory University, Atlanta, GA 30322, USA

13:45 **Plasmon-enhanced thin film solar cells with self-assembled colloidal metal nanosphere arrays** **F.X. 2**
Manuel J. Mendes(1), Seweryn Morawiec(1,2), Francesca Simone(2), Francesco Priolo(1,2,3), Isodiana Crupi (1)
1) MATIS CNR-IMM, via S. Sofia 64, 95123 Catania, Italy 2) Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy 3) Scuola Superiore di Catania, Università di Catania, via Valdisavoia 9, 95123 Catania, Italy

14:00 **Photovoltaic-Quality PbS Quantum Dots Synthesized in a Continuous Flow Reactor.** **F.X. 3**
Irina Lokteva a), Katharina Poulsen a), Dominique Ehlert a), Jan Niehaus a), Christoph Gimmler a), Horst Weller b)
a) CAN (Center for Applied Nanotechnology) GmbH, Grindelallee 117, 20146 Hamburg, Germany; b) University of Hamburg, Institute of Physical Chemistry, Grindelallee 117, 20146 Hamburg, Germany

14:30 **Transport properties of CdSe nanocrystal superlattice** **F.X. 4**
Pierre Capiod*(1), Maxime Berthe(1), Bruno Grandidier(1), Wiel Evers(2), Daniel Vanmaekelbergh(3)
1 Institut d'Electronique, de Microélectronique et de Nanotechnologie (IEMN), CNRS, UMR 8520, Département ISEN, 41 bd Vauban, 59046 Lille Cedex, France 2 Kavli Institute of Nanoscience & Chemical Engineering department, Delft University of Technology, 2600 GA Delft, The Netherlands 3 Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, University Utrecht, Princetonplein 1, 3584 CC Utrecht, The Netherlands

14:45 **PbS nanocrystals in hybrid systems for solar cells applications** **F.X. 5**
C. Borriello *, A. Bruno, R.Diana, T. Di Luccio, P. Morvillo, R. Ricciardi, F. Villani, C. Minarini
ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development Research Centre Portici Portici (NA) I-80055 Italy

15:00 **Nanocolloids of Titanium Oxides as interfacial layers in photovoltaics** **F.X. 6**
Mireille Richard-Plouet, Luc Brohan, Hélène Terrisse, Solenn Berson*, Stéphane Guillerez *
Institut des Matériaux Jean Rouxel, Université de Nantes CNRS, 2, rue de la Houssinière, BP 32229, 44322 Nantes Cedex 03, France *CEA, LITEN, Laboratoire des Modules Photovoltaïques Organiques, INES 50 avenue du Lac Léman, 73375 Le Bourget du lac, France

15:15 **Colloidal PbS Quantum Dots with Low Cost and High Quality** **F.X. 7**
Jun Pan, ǂ Ala'a O. Ballouli, ǂ Lisa Rollny,§ Oleksandr Voznyy, § Edward H. Sargent,§ and Osman M. Bakr ǂ *
ǂ Division of Physical Sciences and Engineering, Solar and Photovoltaics Engineering Center, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia, § Department of Electrical and Computer Engineering, University of Toronto, 10 King's College Road, Toronto, Ontario, M5S 3G4, Canada

15:30 **Discussion/Coffee Break**

Emerging & Doped nanoColloids : Pascal André, Mathieu Maillard, Celso De Mello Donega

15:45 **Tailoring Colloidal Nanomaterials via Cation-Exchange: a versatile route to Hetero-structuring, Alloying, and Doping of Nanocrystals** **F.XI. 1**
Celso de Mello Donega
Debye Institute for Nanomaterials Science, Utrecht University, Netherlands

16:15 **Chemistry in nanoreactors: nanocrystalline inorganic compounds via miniemulsion** **F.XI. 2**
Paolo Dolcet[a], Maurizio Casarin[a], Silvia Gross[a,b]
[a] Dipartimento di Scienze Chimiche, Universit? degli Studi di Padova, via Marzolo, 1, I-35131, Padova, Italy; [b] Istituto per l?Energetica e le Interfasi, IENI-CNR and INSTM, UdR, via Marzolo, 1, I-35131, Padova, Italy

16:30 **Synthesis and surface characterization of CuInS2 colloidal nanocrystals** **F.XI. 3**
Ruben Dierick, Freya Van Den Broeck, José Martins, Zeger Hens
Physics and Chemistry of Nanostructures, NMR and Structure Analysis, Ghent University, Belgium

16:45 **High performance cadmium-free luminophores: synthesis, characterization and application of AgInS2/ZnS nanocrystals.** **F.XI. 4**
Théo Chevallier, Gilles Le Blevennec, Frédéric Chandezon.
CEA, LITEN, F-38054 Grenoble; CEA, LITEN, F-38054 Grenoble; CEA, INAC, F-38054 Grenoble.

17:00 **Synthesis of magnetic nanoparticles with adjustable anisotropy energy** **F.XI. 5**
Veronica Gavrilov-Isaac, Sophie Neveu, Vincent Dupuis, Valerie Cabuil
Laboratoire PHENIX (UMR 8234), Universite Pierre et Marie Curie, 4 Place Jussieu, 75005 Paris, France

17:15 **Synthesis and doping of CuInS2 quantum dots for optical and medical applications** **F.XI. 6**
Krzysztof Gugula*, Piotr J. Cywinski^, Thomas Jüstel*, Michael Bredol*
*Münster University of Applied Sciences, Department of Chemical Engineering, Stegerwaldstraße 39, 48565 Steinfurt, Germany; ^NanoPolyPhotonics, Fraunhofer- Institute for Applied Polymer Research, Geiselbergstrasse 69, 14476 Potsdam-Golm, Germany

17:30 **Tunable band structure in core-shell quantum dots through alloying of the core** **F.XI. 7**
Antoine Guille (1,2), Arjan Houtepen (3), Rik van Deun (4), Edouard Brainis (1,2), Zeger Hens (1,2)
(1) Physics and Chemistry of Nanostructures, Ghent University, Belgium ; (2) Center for Nano- and Biophotonics (NB-Photonics), Ghent University, Belgium ; (3) Opto-electronic Materials, Delft University of Technology, The Netherlands ; (4) Luminescent Lanthanide Lab, Ghent University, Belgium ;

Optoelectronic & Hybrid Devices based on nanoColloids : Gordanna Dukovic, Pascal André, Aurora Rizzo

09:00 **All-Inorganic Colloidal Nanocrystal based Solar Cells** F.XII. 1
Aurora Rizzo, Anna Loiudice, P. Davide Cozzoli, Giuseppe Gigli
National Nanotechnology Laboratory (NNL), CNR-Istituto Nanoscienze, c/o Distretto Tecnologico, via per Arnesano km 5, 73100 Lecce, Italy, CBN - Center for Biomolecular Nanotechnologies - Italian Institute of Technology - Energy Platform - Via Barsanti sn, 73010 Arnesano (Lecce), Italy , Dipartimento di Matematica e Fisica ?E. De Giorgi?, Universit? del Salento, via Arnesano, 73100 Lecce, Italy

09:30 **Synthesis and Characterization of Self-assembled BaTiO3 nanocubes for Resistive Random Access Memory** F.XII. 2
Xi Lin, Adnan Younis, Dewei Chu, and Sean Li
School of Materials Science & Engineering, University of New South Wales Sydney NSW 2052 Australia

09:45 **Investigation of Seebeck coefficients in DMSO based Ferrofluids – Application for thermo-electric devices** F.XII. 3
B.T. Huang, M. Bonetti, M. Roger and S. Nakamae1
1 Service de Physique de l'Etat Condensé, CEA-IRAMIS-SPEC (CNRS-MPPU-URA 2464) CEA-Saclay, F-91191 Gif-sur-Yvette Cedex, France botao.huang@cea.fr

10:00 **Discussion/Coffee Break**

10:30 **Graphene enabled gate-controlled fluorescence of colloidal quantum-dots** F.XII. 4
Omer Salihoglu, Osman Balcı, Emre O. Polat, Coskun Kocabas*
Bilkent University Department of Physics

10:45 **Anchoring of colloidal nanocrystals on substrates for electronic characterisation** F.XII. 5
Stefan Kudera(a,b), Tu Hoang(a), Christoph Becker Freyseng(a), Joachim P. Spatz(a,b)
(a) Max Planck Institute for Intelligent Systems, Dept. New Materials and Biosystems, Heisenbergstr. 3, 70565 Stuttgart, Germany; (b) University of Heidelberg, Dept. of Biophysical Chemistry, Heidelberg, Germany

11:00 **Design and develop metal oxide nanomaterials for gas sensing applications** F.XII. 6
Xuchuan Jiang, Aibing Yu
School of Materials Science and Engineering, The University of New South Wales, Sydney, NSW 2052, Australia

11:15 **Synthesis, characterization and emission tuning of I-III-VI2 semiconductor nanocrystals as color converting alternatives for white LEDs** F.XII. 7
Sofie Abé, Philippe. F. Smet, Zeger Hens
Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Ghent, Belgium; LumiLab, Ghent University, Krijgslaan 281-S1, 9000 Ghent, Belgium

11:30 **Synthesis and characterization of novel ZnS and ZnSe hybrid polymer nanocmposites for optoelectronic applications** F.XII. 8
Katarzyna Matras-Postolek1, Karolina Gorka2, Michael Bredol2, Dariusz Bogdal1
1Cracow University of Technology, Faculty of Chemical Engineering and Technology, Chair of Biotechnology and Physical Chemistry, Warszawska 24 St. 31-155 Cracow, Poland, e-mail: matras@chemia.pk.edu.pl 2Münster University of Applied Sciences, Department of Chemical Engineering, Stegerwaldstraße 39, 48565 Steinfurt, Germany

11:45 **Hydrogenated nanostructured TiO2 electrodes for sensing organic compounds in waters under visible light illumination** F.VII. 9
Shanqing Zhang,[1]* Feng Peng [2]
[1] Centre for Clean Environment and Energy, Griffith School of Environment, Gold Coast Campus, Griffith University, QLD 4222 (Australia) ; [2] School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou, Guangdong, 510640 (China)

12:00 **Lunch Buffet**

E-MRS

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM G

Carbon- or nitrogen-containing nanostructured thin films

Symposium Organizers:

Mariana Braic, National Institute for Optoelectronics, Magurele-Bucharest, Romania

Jochen M. Schneider, RWTH Aachen University, Aachen, Germany

Rony Snyders, Mons University, Mons, Belgium

Thien-Phap Nguyen, Laboratoire de Physique des Matériaux et Nanostructures, Nantes, France

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Functional carbon- or nitrogen-containing nanostructured thin films -I : Mariana BRAIC, Rony SNYDERS

09:00 **Study of surface properties and wettability of Diamond-Like Carbon Plasma modified cotton fibers** **G.I 1**
D. Caschera, B. Cortese, R. G. Toro, T. De Caro, C. Riccucci, F. Federici, G. Gigli, G. M. Ingo
D. Caschera; R. G. Toro; T. De Caro; C. Riccucci; F. Federici; G. M. Ingo Istituto per lo Studio dei Materiali Nanostrutturati, Consiglio Nazionale delle Ricerche, Via Salaria km. 29.300, 00015 Monterotondo Stazione, Rome, Italy B. Cortese National Nanotechnology Laboratory-Institute Nanoscience-CNR (NNL-CNR NANO), via Arnesano, 73100 Lecce, Italy Department of Physiscs, University Sapienza, P.le A. Moro 5, I-00185, Rome, Italy G. Gigli National Nanotechnology Laboratory-Institute Nanoscience-CNR (NNL-CNR NANO), via Arnesano, 73100 Lecce, Italy Department of Mathematics and Physics, University of Salento, Lecce, Italy Center for Biomolecular Nanotechnologies (CNB), Italian Institute of Technology (IIT), Lecce, Italy

09:15 **DLC Hard Protective Coatings Synthetisized by Pulsed Laser Deposition** **G.I 2**
C. NİTA, L. DUTA, G.E. STAN*, C POPESCU, V. CRACİUN, M. HUSANU*, B. BİTA**, R. GHİSLENİ***, C. HİMCİNSCHİ****, A. C. POPESCU
National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania, * National Institute for Materials Physics, Magurele, Romania, **National Institute for Research and Development in Microtechnologies, Bucharest, Romania ***EMPA, Swiss Federal Laboratories for Materials Science and Technology, Thun, Swizerland **** Institute of Theoretical Physics, TU Bergakademie Freiberg, Freiberg, Germany

09:30 **Coffee break**

10:00 **Tutorial - Part II**

12:00 **Lunch break**

Polymer based thin films - Applications : Dick HEGEMANN, Thien-Phap NGUYEN

14:00 **Conjugated polymer/TiO2 composites for photo-catalytic applications** **G.II 1**
Yi Dan, Long Jiang
State Key Laboratory of Polymer Materials Engineering of China (Sichuan University) Polymer Research Institute of Sichuan University

14:30 **Photoactivity Increment in TiO2/Graphene Nano-composite films Prepared by Sol-Gel Technique** **G.II. 2**
Y. Kusumawati (a,c), Th. Pauporté (a), J. Rathousky (b), M. A. Martoprawiro (c)
(a) Laboratoire d'Electrochimie, Chimie des Interfaces et Modélisation pour l'Energie. Ecole Nationale Supérieure de Chimie de Paris, 11 rue P. et M. Curie, 75231 Paris cedex 05, France; (b)J. Heyrovský Institute of Physical Chemistry, v.v.i., Academy of Sciences of the Czech Republic, Dolejskova 3, 18223 Prague 8, Czech Republic; (c) Laboratorium Kimia Fisik dan Anorganik, Faculty of Mathematics and Sciences, Insitut Teknologi Bandung (ITB). Jl. Ganesha 10, Bandung, 40132, Indonesia

14:45 **Plasma polymerization of cyclopropylamine for bioapplications** **G.II 3**
Anton Manakhov, Lenka Zajickova, Marek Elias, Jan Cechal, Josef Polcak, Stepanka Bittnerova, David Necas, Adrian Stoica, Petr Klapetek
Masaryk University, Brno, Czech Republic; Masaryk University, Brno, Czech Republic; Masaryk University, Brno, Czech Republic; Brno University of Technology, Brno, Czech Republic; Brno University of Technology, Brno, Czech Republic; Masaryk University, Brno, Czech Republic; Masaryk University, Brno, Czech Republic; Masaryk University, Brno, Czech Republic; Czech Metrology Institute, Brno, Czech Republic

15:00 **Multilayer coating with optimized properties for corrosion protection of Al** **G.II 4**
F. Khelifa, S. Ershov, M-E. Druart, Y. Habibi, M. Olivier, R. Snyders, Ph. Dubois
University of Mons, Institute of Research in Science and Engineering of Materials, Belgium

15:15 **CNT/PDMS composite membranes for H2 and CH4 gas separation.** **G.II 5**
Kyle Berean, Majid Nour, Sivacarendran Balendhran, Jian Zhen Ou, Johan Du Plessis, Chris McSweeney, Madhu Bhaskaran, Sharath Sriram and Kourosh Kalantar-zadeh
School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia; School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia; School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia; School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia; School of Applied Sciences, RMIT University, Melbourne, Australia; CSIRO Animal Food and Health Sciences, Queensland BioScience Precinct, St Lucia, Australia; School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia; School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia; School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia

15:30 **Coffee break**

Carbon- or nitrogen - containing nanostructured thin films -I : Mariana BRAIC, Rony SNYDERS

16:00 **Analytical calculation of the real surfaces of contact and temperatures of the steels pairs during the dry mechanical friction** **G.PI. 1**
A.ELHADI1 , A. BOUCHOUCHA2
University of M'sila 28000 (Algeria).

16:00 **Influence of the normal load and heat treatment on the wear pairs special non-alloy steels and the impact on the friction surfaces.** **G.PI. 2**
A. El Hadi 1, Y. Mouadji 2, A. Bouchoucha 3
University of M'sila

16:00 **Carbon doping in InSbTe alloys for thermal stable phase transformations** **G.PI. 3**
Yongtae Kim, Hyun-Soo Kim
Semiconductor Materials & Devices Lab., Korea Institute of Science and Technology, Seoul, Korea

16:00 **Low stress C doped WN diffusion barrier for Cu interconnection** **G.PI. 4**
Yong Tae Kim, Young Hwan Kim
Semiconductor Materials and Devices Lab. Korea Institute of Science and Technology P.O.Box 131, Cheongryang, Seoul 130-760, Republic of Korea

16:00 **Formation of Silicon nanoparticles embedded in PECVD silicon nitride by rapid thermal annealing** **G.PI. 5**
S. Meziani, A. Moussi, F. Antoni, R. Outemzabet, L. Mahiou, A. Guenda
Centre de Recherche en Technologie des Semi-Conducteurs pour l'Energétique (CRTSE), 02 Bd Frantz Fanon, BP 140, 7 Merveilles, Algiers. Algeria; Institut électronique du Solide et des Systèmes (IneSS) UDS-CNRS (UMR 7163). 23 rue du Loess. BP 20-F-67037 Strasbourg. Cedex 2. France; Laboratoire des semi-conducteurs et oxydes métalliques, Université des Sciences et de la Technologie Houari Boumediene. BP 32 El Alia, Bab Ezzouar. Alger. Algérie.

16:00 **Hardening of the stainless steel surfaces by forming expanded austenite phases using PIII treatment in ExB fields** **G.PI. 6**
Samantha de Fátima Magalhães Mariano 1,2, Elver Juan de Díos Mitma Pillaca 1, Mario Ueda 1, Rogério de Moraes Oliveira 1
1 National Institute for Space Research (INPE), Associated Laboratory of Plasma (LAP), Av. dos Astronautas, P.O. Box 515, São José dos Campos, SP, Brazil; 2 National Institute for Space Research (INPE), Associated Laboratory of Sensors and Materials (LAS), Av. dos Astronautas, P.O. Box 515, São José dos Campos, SP, Brazil

16:00 **Pretreatments for enhancement of DLC films deposition inside AISI304 tubes** **G.PI. 7**
Samantha de Fátima Magalhães Mariano1,2,a, Valerie Cecile Corcuera 2,b, Elver Juan de Díos Mitma Pillaca1,c, Mario Ueda1,d, Rogério de Moraes Oliveira1,e, Vladimir Jesus Trava-Airoldi 2,f
1National Institute for Space Research (INPE), Associated Laboratory of Plasma (LAP), Av. dos Astronautas, P.O. Box 515, São José dos Campos, SP, Brazil 2National Institute for Space Research (INPE), Associated Laboratory of Sensors and Materials (LAS), Av. dos Astronautas, P.O. Box 515, São José dos Campos, SP, Brazil *a samanthafmm@outlook.com, b valerie@las.inpe.br, celver.mitma@plasma.inpe.br, d ueda@plasma.inpe.br, e rogerio@plasma.inpe.br, f vladimir@las.inpe.br

16:00 **Corrosion behavior of NiTi shape memory alloy treated by Nitrogen Plasma Based Ion Implantation** **G.PI. 8**
(1) Silva, M. M., (2) Pichon, L., (3) Mariano S. F. M., (2) Drouet, M., (1) Otubo, J., (3) Ueda, M.
(1)Instituto Tecnológico de Aeronáutica, São José dos Campos – SP. Brasil; (2)Institut Prime, UPR 3346 CNRS-Université de Poitiers-ENSMA, France. (3)Instituto Nacional de Pesquisas Espaciais, São José dos Campos – SP. Brasil

16:00 **Superficial evaluation of the Ti-6Al-4V alloy submitted to N-PIII treatment in different times of implantation** **G.PI. 9**
(1) Susana Zepka, (1,2) Danieli Aparecida dos Reis, (1) Maria Margareth da Silva, (3) Mario Ueda, (4) Luc Pichon
(1) Instituto Tecnológico de Aeronáutica, São José dos Campos, Brazil; (2) Universidade Federal de São Paulo - ICT, São José dos Campos, Brazil; (3) Instituto Nacional de Pesquisas Espaciais, São José dos Campos, Brazil; (4) Institut Prime, UPR 3346 CNRS-Université de Poitiers-ENSMA, France.

16:00 **EFFECTS OF NITROGEN PLASMA BASED ION IMPLANTATION (PBII) TECHNIQUE IN MECHANICAL AND THERMODYNAMICS PROPERTIES OF NiTi WIRE IMPLANTED SURFACE.** **G.PI. 10**
Osmar de Sousa Santos, Maria Margareth da Silva, Luc Pichon, Jorge Otubo
Instituto Tecnologico de Aeronautica; Université de Poitiers

16:00 **Modeling The Effect of Substrate Surface Roughness On The Impact and Flattening Process of plasma sprayed Al2O3–33 wt.% TiO2 coating** **G.PI. 11**
ILHEM. R. KRIBA1*; K. BENOUMSAAD1; A. DJEBAILI2
1 Plasma Laboratory - Faculty of Sciences – Department of Physics- University of Batna- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria,

16:00 **The fractal parametrization of interfaces in nanostructured composite materials and coatings** **G.PI. 12**
Vityaz P. A., Kheifetz M. L., Senyut V. T. Kolmakov A. G.
Joint Institute of Mechanical Engineering of NAS of Belarus, Minsk; SSPA «Center» of NAS of Belarus, Minsk; Baikov institute of metallurgy and material science RAS, Moscow

16:00 **The effect of substrate temperature and film thickness on the properties of epitaxial TiC thin films grown on MgO(001) by DC reactive magnetron sputtering** **G.PI. 13**
N.C. Zoita1, M. Braic1, V. Braic1, M. Danila2, C.E.A. Grigorescu1, C. Logofatu3
1) National Institute for Research and Development in Optoelectronics, 409 Atomistilor Str., 077125 Magurele, Romania 2) National Institute for Research and Development in Microtechnology, 126A Erou Iancu Nicolae Str., 077190 Bucharest, Romania 3) National Institute for Materials Physics, 105bis Atomistilor Str., 077125 Magurele, Romania

16:00 **Low temperature AlN epilayers deposited by HiPIMS on sapphire substrates** **G.PI. 14**
N. C. Zoita1, V. Braic1, M. Braic1, M. Danila2, A. Kiss1
1) National Institute for Research and Development in Optoelectronics, 409 Atomistilor Str., 077125 Magurele, Romania 2) National Institute for Research and Development in Microtechnology, 126A Erou Iancu Nicolae Str., 077190 Bucharest, Romania

16:00 **Preparation SiN and SiCN films at extremely low working pressure and by using cyclic chemical vapor deposition system** **G.PI. 15**
Ha Jun Jang1,2, Jae Seok An1, Cheol Young Park1, Jong Ho Lee1, and Bum Ho Choi1*
1National Center for Nanoprocess and Equipments, Korea Institute of Industrial Technology, Gwangju 500-480, Korea; 2Advanced Chemical & Engineering, Chonnam National University, Gwangju 500-757, Korea

16:00 **3C-SiC Nanocrystals Growth on Differently Oriented Si Substrates** **G.PI. 16**
Catherine Deville Cavellin (1,2) , Geetanjali Deokar (1,3), Marie D'Angelo (1), Dominique Demaille (1)
1 INSP, UPMC, CNRS UMR 7588, 4 place Jussieu, Paris, F-75005, France ; 2 Faculté des Sciences et Technologie UPEC, 61 av. De Gaulle, Créteil, F-94010, France ; 3 Currently at IEMN, University Lille-1, CNRS UMR 8520, Lille, France.

16:00 **The influence of different formation types of Si and SiC nanocrystals in SiOx matrix on photoluminescence characteristics** **G.PI. 17**
Spirin D.E.1; Terekhov V.A.1; Turishchev S.Yu.1; Agapov B. L.1; Serbin O.V.1; Soldatenko S.A.2; Minakov D.A.1; Tetelbaum D.I.3; Belov A.I.3; Mikhaylov A.N.3; Ershov A.V.4
1 Voronezh State Uneversity; 2 Voronezh State Technical Uneversity; 3 Physico-Technical Research Institute, Nizhnii Novgorod State University; 4 Lobachvsky University of Nizhni Novgorod

16:00 **Effect on Performance of Aluminum Films Deposited on Sintered NdFeB by Different Pretreatment Process** **G.PI. 18**
Hu Fang,Xu Wei, Dai Mingjiang,Lin Songsheng,Shi Qian
Guangzhou Research Institute of Non-ferrous Metals

16:00 **Synthesis of CNx films by fs-PLD for electrochemical detection of pollutants** **G.PI. 19**
C. Maddi 1, T. Tite 1, A. S. Loir 1, V. Barnier 2, K. Wolski 2, N. Zehani 3, C. Chaix 3, P. Fortang 3, N. Jaffrezic- Renault 3, J. C. Sánchez López 4, T.C. Rojas 4, C. Donnet 1, F. Garrelie 1
1 Université de Lyon, F-69003, Lyon, France, Université de Saint-Étienne, Laboratoire Hubert Curien (UMR 5516 CNRS), 42000 Saint Étienne, France; 2 Laboratoire Georges Friedel, Ecole Nationale Supérieure des Mines de Saint Etienne, France; 3 Université de Lyon, F-69003, Lyon, France, Université Claude Bernard Lyon 1, Institut des Sciences Analytiques (UMR 5280 CNRS), 69100 Villeurbanne, France; 4 Instituto de Ciencia de Materiales de Sevilla (CSIC-US), Avda. Américo Vespucio 49, 41092 Sevilla, Spain

16:00 **Antibacterial properties of silver containing amorphous diamond like carbon films** **G.PI. 20**
Tadas Juknius1, Tomas Tamulevičius1, Asta Tamulevičienė1, Irena Klimienė2, Algimantas Petras Matusevičius2, Šarūnas Meškinis1, Sigitas Tamulevičius1
1Institute of Materials Science, Kaunas University of Technology, Savanoriu Ave 271, LT-50131, Kaunas Lithuania; 2Veterinary Academy, Lithuanian University of Health Sciences, Tilžės g. 18. Kaunas Lithuania

16:00 **Influence of Ni dopping on structure and mechanical properties of nc-TiC/a-C:H coatings** **G.PI. 21**
J. Daniel (1), P. Souček (1), V. Buršíková (1), O. Caha (2), M. Stupavská (1), L. Zábranský (1) and P. Vašina (1)
(1) Masaryk University, Faculty of Science, Department of Physical Electronics, Kotlarska 2, Brno 611 37, Czech Republic (2) Masaryk University, Faculty of Science, Department of Condensed Matter Physics, Kotlarska 2, Brno 611 37, Czech Republic

16:00 **Synthesis of thin films of Ti3GexSi1-xC2 and Ti2GexSi1-xC MAX phases on SiC substrates by annealing of Ti-Ge thin films deposited by magnetron sputtering** **G.PI. 22**
M. Alkazaz, M.F. Beaufort, J.F. Barbot, and T. Cabioc'h
Institut Pprime, CNRS - Université de Poitiers - ENSMA - UPR 3346 Département Physique et Mécanique des Matériaux Boulevard Marie et Pierre Curie - BP 30179 86962 FUTUROSCOPE CHASSENEUIL Cedex, France

16:00 **Investigation of multilayered TiSiC/NiC protective coatings** **G.P28I. 22**
M.Balaceanu, M.Braic, A.Parau, V.Braic, C.Vitelaru, A. Vladescu
National Institute for Optoelectronics, 409 Atomistilor, POBox - MG 05, 077125, Magurele- Bucharest, Romania

16:00 **Structural and optical properties of Ge1-xCx deposited on Si and quartz by rf magnetron sputtering** **G.PI. 23**
C.N.Zoita1, M. I. Rusu1, M. Stchakowsky2, C.E.A.Grigorescu1,
1. National Institute R&D Optoelectronics INOE 2000, 409 Atomistilor Str, PO Box MG-5, 77125 Magurele, Ilfov, Romania; 2.HoribaHORIBA Jobin Yvon S.A.S. Z.A. de la Vigne aux Loups - 5 Avenue Arago - 91380 Chilly Mazarin - France

16:00 **INFLUENCE OF THE NITRIDING PROCESS ON THE BAND-GAP OF TiO2 THIN FILMS WITH PHASE MIXTURE** **G.PI. 24**
Enrique Camps, V.H. Castrej?n-S?nchez, M.A. Camacho-L?pez, J. G. Qui?ones-Galvan
Enrique Camps, Departamento de F?sica, Instituto Nacional de Investigaciones Nucleares, Apartado postal 18-1027, M?xico D.F., C.P. 11801; V.H. Castrej?n-S?nchez, Facultad de Qu?mica, Universidad Aut?noma del Estado de M?xico, Paseo Col?n y Tollocan, Toluca, M?xico, C.P. 50110; M.A. Camacho-L?pez, Laboratorio de Investigaci?n y Desarrollo de Materiales Avanzados, Facultad de Qu?mica, Universidad Aut?noma del Estado de M?xico, Km 14.5 Carr. Toluca, Atlacomulco, M?xico; J.G. Qui?ones-Galv?n, Departamento de F?sica, Instituto Nacional de Investigaciones Nucleares, Apartado postal 18-1027, M?xico D.F., C.P. 11801

16:00 **Morphology of graded composite films** **G.PI. 25**
Stanislav Novak (1), Rudolf Hrach (1, 2), Martin Svec (1)
(1) Department of Physics, Faculty of Science, J. E. Purkinje University, Ceske mladeze 8, 400 96 Usti nad Labem, Czech Republic; (2) Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University, V Holesovickach 2, 180 00 Prague 8, Czech Republic

16:00 **Multi-principal-element (CuSiTiYZr)C coatings for tribological applications** **G.PI. 26**
M. Braic, M. Balaceanu, A. Vladescu, C.N. Zoita, V. Braic, A.Parau, M. Dinu
National Institute for Optoelectronics, 409 Atomistilor Str., 077125 Magurele-Bucharest, Romania

16:00 **Growth and characterization of arc evaporated TiSiCN-Ni hard coatings** **G.PI. 27**
M.Balaceanu, M.Braic, C.Vitelaru, A.Parau, A. Vladescu, V.Braic
National Institute for Optoelectronics, 409 Atomistilor, POBox - MG 05, 077125, Magurele- Bucharest, Romania

16:00 **Deposition and characterisation of (AlCrNbSiTi)C coatings** **G.PI. 29**
Mariana BRAIC, Mihaela DINU, Iulian PANA, Anca PARAU
National Institute for Optoelectronics, 409 Atomistilor Str., Bucharest, Romania

16:00 **Effect of Si addition on the corrosion resistance, tribological performance and biocompatibility of the TiON, ZrON and TiZrON thin films** **G.PI. 30**
C.M.Cotrut1, I.Titorencu2, M.Balaceanu3, M.Dinu1,3, C.Vitelaru3, M. Tarcolea1, A.Vladescu3
1 University Politehnica of Bucharest, 313 Sp.Independentei, Bucharest, Romania 2 Institute of Cellular Biology and. Pathology Nicolae Simionescu, 8 B.P.Hasdeu, PO Box 35 - 14, Bucharest, Romania 3 National Institute for Optoelectronics, 409 Atomistilor, POBox - MG 05, 077125, Magurele- Bucharest, Romania

16:00 **Structural, morphological and electrical properties of TaxN thin films** **G.PI. 31**
N.Radić1, K. Salamon2, M. Očko2, I. Bogdanović-Radović1, S. Bernstorff3
1Rudjer Boskovic Institute, Bijenicka 54, Zagreb, Croatia; 2Institute of Physics, Bijenicka 46, Zagreb, Croatia; 3Elettra, Basovizza, Italy

16:00 **Structure and mechanical properties of magnetron sputtered quaternary TiZrSiN films** **G.PI. 32**
G. Abadias1, I.A. Saladukhin2, V.V. Uglov2, S.V. Zlotski2, S.N. Dub3, G. N. Tolmachova4
1Institut P', Poitiers, France; 2Belarusian State University, Minsk, Belarus; 3Institute for Superhard Materials, Kiev, Ukraine; 4Kharkov Institute of Physics and Technology, Kharkov, Ukraine

16:00 **Optical performance of nanostructured, decorative Ti-Al-N films using a combinatorial approach** **G.PI. 33**
N. Pliatsikas1, A. Siozios2, S. Kassavetis2, G. Vourlias1, P. Patsalas1
1Aristotle University of Thessaloniki, Department of Physics, 54124 Thessaloniki, Greece; 2University of Ioannina, Department of Materials Science and Engineering, 45110 Ioannina, Greece

16:00 **Modified TiN-TiO2 composites intended for high-temperature sensors** **G.PI. 34**
Eva Bartonickova.Petr Ptacek.Radoslav Novotny.Lukas Kalina.Tomas Opravil. Jaromir Havlica
Materials Research Centre, Faculty of Chemistry, Brno University of Technology, Brno Czech Republic

16:00 **Comparison between TiAlN films deposited by HPPMS and RF magnetron sputtering** **G.PI. 35**
D. Valerini, D. Lorenzo, L. Tapfer, and A. Rizzo
ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development - Technical Unit for Brindisi Material Technologies, Laboratory of Materials Technology (UTTMATB-TEC), Brindisi Research Center, S.S. 7 Appia km. 706, 72100 Brindisi, Italy

16:00 **Synthesis of reinforced magnesium embedded in carbon matrix by using Thermionic Vacuum Arc (TVA) technology** **G.PI. 36**
R. Vladoiu, A. Mandes, V. Dinca
Department of Plasma Physics, Faculty of Physics Chemistry Electronics and Oil Technology, Ovidius University, Mamaia 124, Constanţa, 900527, Romania

16:00 **Multifunctional relations between synthesis conditions, material nanostructure and thin films properties of Ti added in carbon matrix** **G.PI. 37**
VLADOIU Rodica1, DINCA Virginia1, MANDES Aurelia1, PRODAN Gabriel1
1 Dep. of Plasma Physics, Faculty of Applied Science and Engineering, Ovidius University, Mamaia 124, Constanta, 900527, Romania

16:00 **Evaluation of wear resistance of CrB(N) films by sliding-, impact-, and abrasive tests** **G.PI. 38**
Ph.V. Kiryukhantsev-Korneev1, J.F. Pierson2,3
1- National University of Science and Technology MISIS,Moscow 119049, Russia 2- Institut Jean Lamour, Université de Lorraine, UMR 7198, Nancy, F-54000, France 3- CNRS, Institut Jean Lamour, UMR 7198, Nancy, F-54000, France

16:00 **Influence of the substrate bias potential on the properties of ta-C coatings deposited using a water-cooled electromagnetic Venetian blind plasma filter** **G.PI. 39**
V. Zavaleyev, J. Walkowicz
Koszalin University of Technology, Institute of Technology and Education, ul. Sniadeckich 2, 75-453 Koszalin, Poland

Recent advances in polymer based thin films : Yi DAN, Lenka ZAJICKOVA

08:30 **Controlling the Nanostructure and Stability of a-C:H:N Plasma Polymers** **G.III 1**
Dirk Hegemann
Empa, Swiss Federal Laboratories for Materials Science and Technology

09:00 **Experimental and theoretical study of the plasma-surface interaction during the growth of ethyl-lactate plasma polymers** **G.III 3**
S. Ligot , P. Raynaud , P. Gerbaux , V. Lemaur , R. Snyders
Chimie des Interactions Plasma-Surface, CIRMAP, Université de Mons, Place du Parc 23, B-7000 Mons, Belgium ; Matériaux et Procédés Plasmas, Université Paul Sabatier, 118, route de Narbonne, F-31062 Toulouse, France ; Groupe de Recherche en Spectrométrie de Masse, Université de Mons, Place du Parc 23, B-7000 Mons, Belgium ; Chimie des Matériaux Nouveaux, CIRMAP, Université de Mons, Place du Parc 23, B-7000 Mons, Belgium ; Chimie des Interactions Plasma-Surface, CIRMAP, Université de Mons, Place du Parc 23, B-7000 Mons, Belgium

09:15 **Elaboration of plasma-polyaniline nanofibers by discharge power variation** **G.III 4**
Andrii Zaitsev, Fabienne Poncin-Epaillard, Ana Lacoste, Dominique Debarnot
CUE LUNAM, UMR Université du Maine, CNRS 6283, Institut des Molécules et Matériaux du Mans (IMMM), Département Polymères, Colloïdes et Interfaces (PCI), avenue Olivier Messiaen, 72085 Le Mans, France; CUE LUNAM, UMR Université du Maine, CNRS 6283, Institut des Molécules et Matériaux du Mans (IMMM), Département Polymères, Colloïdes et Interfaces (PCI), avenue Olivier Messiaen, 72085 Le Mans, France; Laboratoire de Physique Subatomique et de Cosmologie, Université Joseph Fourier Grenoble 1, CNRS/IN2P3, Institut Polytechnique de Grenoble, 53, Avenue des Martyrs, 38026 Grenoble, France; CUE LUNAM, UMR Université du Maine, CNRS 6283, Institut des Molécules et Matériaux du Mans (IMMM), Département Polymères, Colloïdes et Interfaces (PCI), avenue Olivier Messiaen, 72085 Le Mans, France

09:30 **A detailed description of the chemistry of thiol supporting plasma polymer films** **G.III 5**
Damien Thiry (1), Remy Francq (1,2), Maxime Guillaume (3), Jérôme Cornil (3), Rony Snyders (1, 2)
(1) Chimie des Interactions Plasma Surface, CIRMAP, University of Mons, Place du Parc 23, B-7000 Mons, Belgium (2) Materia Nova Research Center, Parc Initialis, Avenue N. Copernic 1, B-7000 Mons, Belgium (3) Service de Chimie des Matériaux Nouveaux, CIRMAP, University of Mons, Place du Parc 23, B-7000 Mons, Belgium

09:45 **New way to deposition of phosphorus nitride film on InP: phosphazene like film** **G.III 6**
C.Njel, D.Aureau, A-M Gonçalves*, A.Etcheberry
Institut Lavoisier de Versailles ILV - UMR- CNRS 8180 (http://www.ilv.uvsq.fr) UVSQ, 45, Avenue des Etats-Unis 78000 Versailles Cedex- France. *Fax/Tel: + 33 (0) 1 39 25 44 19/18 - E-mail: anne-marie.goncalves@uvsq.fr

10:00 **Coffee break**

Recent advances in transition metal nitrides-I : Christian MITTERER, JF PIERSON

10:30 **Control of Micro- and Nanostructure in Transition Metal Nitrides: Recent Advances** **G.IV. 1**
Ivan Petrov
University of Illinois, USA and Linköping University, Sweden

11:00 **Elastic properties of ternary nitride hard coatings: experimental and computational approaches** **G.IV. 2**
G. Abadias (1), Ph. Djemia (2), L. Belliard (3)
1. Institut P', CNRS-UPR 3346, Université de Poitiers, France; 2. LSPM, CNRS-UPR 3407, Université Paris 13, Sorbonne Paris Cité, France; 3. INSP, CNRS-UMR 7788, Université Pierre et Marie Curie, France

11:15 **Nanostructured tantalum nitride thin films for diffusion barriers** **G.IV. 3**
L. Boulat, R. Viennois, M. Dadras, D. Ravot, N. Fréty
Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France ; Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France ; Centre Suisse d'Electronique et de Microtechnique SA, Jaquet-Droz 1, Case Postal, CH-2002 Neuchâtel, Switzerland ; Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France ; Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France

11:30 **The Effect of Microstructure on the Thermal Conductivity of Nanoscale Polycrystalline AlN Thin-Films** **G.IV. 4**
Juliana Jaramillo; Wassim Kassem; Yann Chalopin; Emmanuel Ollier; Sebastian Volz
Laboratoire des Composants pour la Conversion de l'Energie, CEA; Laboratoire d'Energétique Moléculaire et Macroscopique, CNRS, Ecole Centrale Paris; Laboratoire d'Energétique Moléculaire et Macroscopique, CNRS, Ecole Centrale Paris; Laboratoire des Composants pour la Conversion de l'Energie, CEA; Laboratoire d'Energétique Moléculaire et Macroscopique, CNRS, Ecole Centrale Paris

11:45 **Low sheet resistance titanium nitride films by low-temperature plasma-enhanced atomic layer deposition using design of experiments methodology** **G.IV. 5**
Micheal Burke, Alan Blake, Ian M. Povey, Michael Schmidt, Nikolay Petkov, Patrick Carolan, Aidan Quinn.
Tyndall National Institute

12:00 **Lunch break**

Modeling : Valeriu CHIRITA, Stanislav NOVAK

14:00 **Optical Absorption of Carbon-Metal Nanocomposites** **G.V. 1**
G. Hadjisavvas1, G. Tritsaris2, C. Mathioudakis1, E. Kaxiras2, and P. C. Kelires1
1 Research Unit for Nanostructured Materials Systems, Department of Mechanical and Materials Science Engineering, Cyprus University of Technology, P.O. Box 50329, 3603 Lemesos, Cyprus; 2 Department of Physics, Harvard University, Cambridge, Massachusetts02138, USA

14:15 **Crossover from coalescence-controlled to impingement-controlled growth in metal-on-insulator thin film deposition** **G.V. 2**
Bo Lü, Viktor Elofsson, Daniel Magnfält, Peter Münger and Kostas Sarakinos
Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83, Linköping, Sweden

14:30 **Morphological and electrical properties of composite films affected by growth conditions** **G.V. 3**
M. Svec1, S. Novak1, R. Hrach1,2
1Faculty of Science, J. E. Purkinje University, Usti nad Labem, Czech Republic
2Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic

14:45 **Doping induced Rashba spin splitting in graphene and BN nanoribbons** **G.V. 4**
Andrzej Skierkowski, Mikolaj Sadek, Jacek A. Majewski
Faculty of Physics, University of Warsaw, ul. Hoza 69, PL-00-681 Warszawa, Poland

15:00 **Kinetics of bilayer graphene growth on copper** **G.V. 5**
Ning Yang, Kemal Celebi, Hyung Gyu Park
Nanoscience for Energy Technology and Sustainability, Department of Mechanical and Process Engineering, ETH Zurich

15:15 **Large scale exfoliation of BN nanosheets by sonication and ball milling** **G.V. 6**
Konstantinos Kouroupis-Agalou, Andrea Liscio; Emanuele Treossi; Luca Ortolani; Vittorio Morandi; Nicola Maria Pugno; Vincenzo Palermo
Institute of Organic Synthesis and Photoreactivity, Council of National Research (ISOF-CNR), Bologna, Italy.

15:30 **Dynamic Electronic Response of Metal-Coated Graphene: A First Principle Study** **G.V. 7**
Deng Tianqi [1 2], SU Haibin [1 2], Dominique BAILLARGEAT [2]
1. School of Materials Science and Engineering, Nanyang Technological University, Singapore; 2. CNRS International NTU THALES Research Alliance, Nanyang Technological University, Singapore

15:45 **Coffee break**

Functional carbon- or nitrogen-containing nanostructured thin films -II : Brigitte BOUCHET-FABRE, Tomas POLCAR

16:30 **Recent innovative coatings developments for aerospace, biomedical and oil & gas industries at Tecvac** **G.VI. 1**
Sarah Banfield Jonathan Housden
Research Manager

16:45 **Infrared optical properties of ZrC thin films synthesized by pulsed laser deposition** **G.VI. 2**
V. Craciun1, C. Martin2, G. Socol1, D. Tanner3, and D. Craciun1
1Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, Magurele-Bucharest, Romania 2Ramapo College of New Jersey, NJ 3Physics Department, University of Florida, Gainesville, FL

17:00 **Silver surface segregation in silver doped diamond like carbon (Ag-DLC) nanocomposite coatings** **G.VI. 3**
Noora K.Manninen1, Ramón Escobar Galindo2, Sandra Carvalho1,3, Albano Cavaleiro1
1 - SEG-CEMUC, Mechanical Engineering Department, University of Coimbra, 3030-788 Coimbra, Portugal. 2 - Instituto de Ciencia de Materiales de Madrid (ICMM -CSIC), Cantoblanco, 28049, Madrid, Spain. 3 – GRF, Physics Department, University of Minho, Campus de Azurém, 4800-058 Guimarães, Portugal.

17:15 **Alumina nanoparticles incorporated into CrN coating matrix for mechanical properties** **G.VI. 4**
L. Avril, J. Boudon, P. Simon, L. Imhoff
Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université de Bourgogne, 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex, France

17:30 **TiSiON thin films as possible candidates in biomedical applications** **G.VI. 5**
A. Vladescu1, C. Vitelaru1, M. Dinu1,2, T. Petreus3, C.M. Cotrut2
1 National Institute for Optoelectronics-INOE 2000, 409 Atomistilor Str., Magurele, Romania 2 University Politehnica of Bucharest, 313 Spl. Independentei Str., Bucharest, Romania 3University of Medicine and Pharmacy “Gr. T. Popa”, 16 Universitatii Str., Iasi, Romania

17:45 **Luminescent organic nanocomposite thin films deposited by remote plasma assisted vacuum deposition for photonics applications** **G.VI. 6**
M. Alcaire, F.J. Aparicio, L. Cerdán, F. Lahoz, A. Borras, I.García-Moreno, A. Costela, A.R. González-Elipe, A. Barranco.
M. Alcaire; F.J. Aparicio; A. Borras; A.R. Gonzalez-Elipe; A. Barranco, nstituto de Ciencia de Materiales de Sevilla (CSIC-Universidad de Sevilla). c/Américo Vespucio 49, 41092 Sevilla, Spain. L. Cerdán; I. García-Moreno; A. Costela, Instituto de Química Fïsica Rocasolano, (CSIC),c/ Serrano 119, 28006 Madrid. Spain. F. Lahoz, Dpto. Física Fundamental y Experimental, Electrónica y Sistemas, Universidad de La Laguna. C/ Astrofísico Francisco Sanchez s/n, 38206 La Laguna. Santa Cruz de Tenerife, Spain

18:00 **Study of plasma treatment effect on low temperature metalorganic chemical vapor deposition (MOCVD) deposition of TiN as a barrier layer for copper diffusion in high aspect ratio through silicon vias** **G.VI. 7**
Larissa Djomeni a, Thierry Mourier a, Stéphane Minoret a, Sabrina Fadloun c, Steve Burgess b, Andrew Price b , Laurent Vandroux a, Daniel Mathiot d
a CEA, LETI, MINATEC Campus, 17 rue des Martyrs, Grenoble Cedex 9, 38054, France; b SPTS, Ringland Way, Newport, Gwent , NP18 2TA, UK; c SPTS SAS, Inovallée - Bat B 445, rue Lavoisier, Montbonnot, 38330, France; d ICube Laboratory Université de Strasbourg and CNRS) 23 rue du Loess, Strasbourg cedex 2, B.P. 20, 67037,

Recent advances in transition metal nitrides-II : Panos PATSALAS, Nikola RADIC

08:30 **Knowledge-based design of TiAlN-based hard coatings** **G.VII. 1**
Christian Mitterer
Department of Physical Metallurgy and Materials Chemistry, Montanuniversitaet Leoben, Austria

09:00 **Lattice Ordering Effects on Toughness Enhancement in TiN and VN Thin Films Alloys** **G.VII. 2**
D. Edstr?m, D.G. Sangiovanni, V. Chirita and L. Hultman
Thin Film Physics, IFM, Link?ping University, Sweden

09:15 **Synthesis and microstructure of layered-ternary TiAlN thin films** **G.VII. 3**
A. Rizzo, L. Mirenghi, D. Valerini, R. Terzi, L. Tapfer
ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development - Technical Unit for Brindisi Material Technologies, Laboratory of Materials Technology (UTTMATB-TEC), Brindisi Research Center, S.S. 7 Appia km. 706, 72100 Brindisi, Italy

09:30 **Residual stress distribution and thermal stability of the Cr/CrN multilayer coatings** **G.VII. 4**
P. Wieciński (1), R. Dobosz (1), J. Jaroszewicz (1), J. Smolik (2), H. Garbacz (1), K.J. Kurzydłowski (1)
(1) Faculty of Materials Science, Warsaw University of Technology, 141 Woloska Str., 02-507 Warsaw, POLAND (2) Institute for Sustainable Technology – National Research Institute, 6/10 Pulaskiego, 26-600 Radom, POLAND

09:45 **Defect structure and surface chemistry of transition metal aluminum nitride thin films alloyed with oxygen** **G.VII. 5**
K. P. Shaha a, H. Rueß a, S. Rotert a, M. to Baben a, D. Music a, Ch. Kunze b, G. Grundmeier b and J. M. Schneider a
a Materials Chemistry, RWTH Aachen University, Kopernikusstr. 10, 52074 Aachen, Germany b Technical and Macromolecular Chemistry, University of Paderborn, Warburger Str. 100, 33098 Paderborn, Germany

10:00 **Coffee break**

Nanocarbons from metal/carbon nanocomposite thin films : Pantelis KELIRES, Sigitas TAMULEVICIUS

10:30 **Metal-carbon nanocomposite thin films: a way to synthesize nanocarbons** **G.VIII. 1**
P.Y. Tessier, A.A. El Mel, N. Bouts
Institute of Materials Jean Rouxel - IMN, University of Nantes, CNRS, France

11:00 **Single-Walled Carbon Nanotube Networks for Ethanol Vapor Sensing Application** **G.VIII. 2**
Albert G. Nasibulin1, Ilya V. Anoshkin1, Prasantha R. Mudimela1, Maoshuai He1, Vladimir Ermolov2, Oleg Tolochko3 and Esko I. Kauppinen1
1 Aalto University School of Science, P.O. Box 15100, Espoo, FI-00076 AALTO, Finland (albert.nasibulin@aalto.fi) 2 Nokia Research Center, Helsinki, Finland 3 Saint-Petersburg Polytechnic State University, Russia

11:15 **Carbon nanotubes patterned electrodes for photovoltaic applications** **G.VIII. 3**
C. Ciceroni, G. Mincuzzi, G. Ulisse, A. Di Carlo, F. Brunetti
University of Rome «Tor Vergata»

11:30 **Photoemission Response and Annealing Effects of Nitrogen Plasma Functionalized Carbon Nanotubes** **G.VIII. 4**
M. Scardamaglia 1, F.J. Aparicio Rebollo 1, C. Struzzi 2, P. Mudimela 4, J.-F. Colomer 4, L. Gregoratti 2, L. Petaccia 2, R. Snyders 1, and C. Bittencourt 1
1 Chemistry of Interaction Plasma Surface (ChIPS), University of Mons, Belgium; 2 Elettra Sincrotrone Trieste S.C.p.A., AREA Science Park, Italy; 3 Institut des Mat?riaux Jean Rouxel, Universit? de Nantes, CNRS, Nantes, France; 4 Research Centre in Physics of Matter and Radiation, University of Namur, Belgium;

11:45 **Study of nanometrically thin pyrolytic carbon films for explosive electron emission cathode in high-voltage planar diode** **G.VIII. 5**
Vladimir Baryshevsky 1, Nikolai Belous 1, Alexandra Gurinovich 1, Evgeny Gurnevich 1, Polina Kuzhir 1, Sergey Maksimenko 1, Pavel Molchanov 1, Mikhail Shuba 1, Tommi Kaplas 2, Yuri Svirko 2
1 Research Institute for Nuclear Problems, Belarusian State University 2 University of Eastern Finland

12:00 **Lunch break**

13:30 **Carbon Nanotubes as Transparent Electrodes For Organic Solar Cells** **G.PII. 1**
Osman Urper, Elif Arici, Nilgun K.yavuz
Osman Urper (MSc) Nilgun K.yavuz (Prof.Dr) Elif Arici (Assoc.Prof.Dr) Department of Energy, Istanbul Technical University, Istanbul, Turkey

13:30 **Au-GaAs PHOTOVOLTAIC STRUCTURES WITH SINGLE-WALL CARBON NANOTUBES ON THE MICRORELIEF INTERFACE** **G.PII. 2**
N.L. Dmitruk1, O.Yu. Borkovskaya1, S.V. Mamykin1, T.S. Havrylenko1, I.B. Mamontova1, N.V. Kotova1, E.V. Basiuk2
1V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv 03028, Ukraine, dmitruk@isp.kiev.ua; 2Centro de Ciencias Aplicadas y Desarrollo Tecnológico Universidad Nacional Autónoma de México, Circuito Exterior C. U., 04510 México D.F., Mexico

13:30 **Diameter control of vertically aligned, single-walled carbon nanotubes via chemical treatment of a catalyst support** **G.PII. 3**
Ning Yang, Seul Ki Youn, Hyung Gyu Park
Nanoscience for Energy Technology and Sustainability, Department of Mechanical and Process Engineering, ETH Zurich

13:30 **Activation energy variation in the chemical vapor deposition of carbon nanotubes under temperature gradient** **G.PII. 4**
Ning Yang, Seul Ki Youn, Hyung Gyu Park
Nanoscience for Energy Technology and Sustainability, Department of Mechanical and Process Engineering, ETH Zurich

13:30 **Surface property modification of carbon nanotube carpet by plasma** **G.PII. 5**
Thibault Labbaye(1), Mireille Gaillard(1), Eva Kovacevic(1), Thomas Lecas(1), Julien Simonneau(1), Aurélien Canizarès(2), Mohamed-Ramzi Ammar(2), Thomas Strunkus(3), Christian Kübel(4), Nadjib Semmar(1), Nicole Raimboux, Patrick Simon, Chantal Boulmer-Leborgne(1)
1 GREMI, Université-CNRS, BP6744, 45067 Orléans cedex 2, France 2 CEMHTI, CNRS, 45071 Orléans cedex 2, France 3 Karlsruhe Institute of Technology KIT, Germany 4 Christian-Albrechts-University of Kiel, Institute for Material Science, Kiel, Germany

13:30 **Nitrogen and Carbon Doped TiO2 Nanotubes: Fabrication and Gas Sensing Properties** **G.PII. 6**
Erdem SENNIK1, Necmettin KILINC1, Zafer Ziya OZTURK1,2
1Gebze Institute of Technology, Department of Physics, Kocaeli 41400, Turkey; 2 TUBITAK Marmara Research Center, Material Institute, Kocaeli 41700, Turkey

13:30 **SYNTHESIS OF CARBON NANOSTRUCTURED THIN FILMS NEAR ROOM TEMPERATURE USING PECVD ASSISTED BY MICROWAVE** **G.PII. 7**
Flavio Carvalho (1), Alfredo A. Vaz (2), Mário A. Bica de Moraes (2), Stanislav A. Moshkalev (2), Rogério V. Gelamo (1)
(1) Universidade Federal de Triangulo Mineiro - UFTM, Uberaba, MG, Brazil; (2) Universidade Estadual de Campinas - UNICAMP, Campinas, SP, Brazil

13:30 **The effect of TiSiN interlayers on bond strength of dental ceramic to Ni-Cr and Co-Cr alloys** **G.PII. 8**
M.Tarcolea1, C.M.Cotrut1, M.Dinu1,2, C.Vitelaru2, F.Baciu1, A.Vladescu2
1University Politehnica of Bucharest, Romania 2National Institute for Optoelectronics, Magurele, Romania

13:30 **Optical Properties of Transition Metal Doped AlN Nanowires** **G.PII. 9**
A. Aghdaie 1, H. Haratizadeh 1, S.H. Mousavi 1,2
1. Physics Department, Shahrood University of Technology, Shahrood, Iran 2. INM– Leibniz Institute for New Materials, 66123 Saarbrücken, Germany

Carbon- or nitrogen-containing nanostructured thin films - II : Thien-Phap NGUYEN, Jochen SCHNEIDER

13:30 **Novel biomimetic nanocomposites based on nanohydroxyapatite/vertically-aligned/polymeric nanofibers produced by electrospinning to bone tissue regeneration** **G.PII. 10**
Patricia O. Andrade 1 Joao Vitor da Silva Moreira 2 Ana Maria do Espirito Santo 1 Anderson Oliveira Lobo 2
1 Universidade Federal de Sao Paulo, Department of Materials Science and Engineering, Sao Jose dos Campos, SP, Brazil 2 Laboratory of Biomedical Nanotechnology, Development Research Institute (IP&D), Universidade do Vale do Paraiba (Univap), Av. Shishima Hifumi, 2911 - Sao Jose dos Campos, 12244-000, SP, Brazil

13:30 **Light emitting and photoresponse of n-ZnO/graphene heterojunctions** **G.PII. 11**
Feng Wei, Geming Wu, Hongbin Zhao, Yan Zhang, Du Jun
Advanced Electronic Materials Institute, General Research Institute for Nonferrous Metals, Beijing, P.R. China;

13:30 **Nitrogen ion casting of suspended graphene flakes: temperature effects and selectivity of sp2 nitrogen species** **G.PII. 12**
M. Scardamaglia 1, B. Aleman 2, M. Amati 2, C. Ewels 3, P. Pochet 4, N. Reckinger 5, J.-F. Colomer 5, T. Skaltsas 6, N. Tagmatarchis 6, R. Snyders 1, L. Gregoratti 2, and C. Bittencourt 1 and C. Bittencourt 1
1 Chemistry of Interaction Plasma Surface (ChIPS), University of Mons, Belgium; 2 Elettra Sincrotrone Trieste S.C.p.A., AREA Science Park, Italy; 3 Institut des Matériaux Jean Rouxel, Université de Nantes, CNRS, Nantes, France; 4 Laboratoire de simulation atomistique (L_Sim), SP2M, INAC, CEA-UJF, Grenoble F-38054, France; 5 Research Centre in Physics of Matter and Radiation, University of Namur, Belgium; 6 Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48 Vassileos Constaninou Avenue, 116 35Athens, Greece;

13:30 **Graphene-Au nanoparticle hybrid structure by DNA assisted self-assembly** **G.PII. 13**
Tae Geun Kim, Jae Hyun Hur, Un Jeong Kim, Yeonsang Park, Kyuhyun Im, Chang-Won Lee, Nokyoung Park, Sungwoo Hwang
Research center for Time-domain Nano-functional Device, Samsung Advanced Institute of Technology, Yong-In, Gyeonggi 446-712 South Korea; Nano-Electronics Lab, Samsung Advanced Institute of Technology (SAIT), P. O. Box 111, Suwon 440-600, Republic of Korea

13:30 **Raman studies of Graphene-Metal Interface** **G.PII. 14**
Un Jeong Kim, Yeonsang Park, Chang-Won Lee, Sungwoo Hwang
Nano-Electronics Lab, Samsung Advanced Institute of Technology (SAIT), P. O. Box 111, Suwon 440-600, Republic of Korea

13:30 **Raman mapping of G band: Implication of local strain due to inherent structural twist and folding in free-standing GO fiber alphabets** **G.PII. 15**
Rajarshi Roy†, Nilesh Mazumder†, Gundam S. kumar‡, Hitesh Mamgain§, Uttam K. Ghorai‡, Dipayan Sen†, Kalyan K. Chattopadhyay†,‡
†Thin Film and Nanoscience Laboratory, Dept. of Physics, Jadavpur University,Kolkata-700032, India; ‡ School of Materials Science and Nanotechnology, Jadavpur University,Kolkata-700032, India; §WITec GmbH, Lise-Meitner-Strasse, 6 D-89081 Ulm, Germany.

13:30 **Ultrathin graphene membrane for selective gas separation** **G.PII. 16**
Nak-Kwan Chung, Yong-hyun Shin, Myung-ho Bae
Division of Industrial Metrology, Korea Research Institute of Standards and Science, Daejeon, Korea; 1 Division of Convergence Technology, Korea Research Institute of Standards and Science, Daejeon, Korea

13:30 **Enhanced SERS Stability and Reproducibility of Ag Substrates with a Monolayer Graphene Barrier** **G.PII. 17**
Yuda Zhao, Yang Chai
Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Hong Kong.

13:30 **Reduced graphene oxide functionalized with metal nanoparticles: Fabrication, structure, and sensing properties** **G.PII. 18**
Han Gil Na, Hong Yeon Cho, Yong Jung Kwon, Hyoun Woo Kim*
Department of Materials Science and Engineering, Hanyang University, 222 Wangsimni-ro, Seongdong-Gu, Seoul, 133-791, Korea

13:30 **Impact of the hydrocarbon precursor type on the generation and concentration of free radicals in a plasma polymer** **G.PII. 19**
S. Ershov(1), F. Khelifa (2), Ph. Dubois (2,3), R. Snyders(1,3)
(1) Chimie des Interactions Plasma-Surfaces, Center of Innovation and Research in Materials and Polymers (CIRMAP), University of Mons UMONS, Place du Parc 23, 7000 Mons, Belgium; (2) Laboratory of Polymeric and Composite Materials, Center of Innovation and Research in Materials and Polymers (CIRMAP), University of Mons UMONS, Place du Parc 23, 7000 Mons, Belgium; (3) Materia Nova Research Center, Parc Initialis, Avenue N. Copernic 1, 7000 Mons, Belgium

13:30 **Interfacial charge transfer in P3HT/TiO2 nanocomposites by photoluminescence investigations** **G.PII. 20**
Long Jiang1, Jianling Zhang1, Haigang Yang1, Thien Phap Nguyen2, Yi Dan1
1 State Key Laboratory of Polymer Materials Engineering of China (Sichuan University), Polymer Research Institute of Sichuan University, Chengdu 610065, China 2Institut des Matériaux Jean Rouxel, University of Nantes, CNRS, 2 rue de la Houssinière, 44322 Nantes, France

13:30 **New Self-Assembled Supramolecular System based Triphenylene Imidazolim Derivative.** **G.PII. 21**
Sunjung Jo, Jaemee Kim, K. M. K. Swamy, Jun Yin.
Juyoung Yoon* Korea

13:30 **POLY-(PYRROLE-THIOPHENE-ANILINE)-1,4-DICHLORO-2-BUTYNE STRUCTURES DEPOSITED BY PLASMA POLYMERIZATION** **G.PII. 22**
S. M. Iordache, A.-M. Iordache, A. Balan, L. Popovici, Ioan Stamatin*
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Atomistilor 405, P.O. Box 38, Bucharest-Magurele, Romania, 077125 *Corresponding author: istarom@3nanosae.org

13:30 **PREPARATION AND CHARACTERIZATION OF POLYLACTIDE/CHITOSAN NANOCOMPOSITES THIN FILMS** **G.PII. 23**
W. W. Wang1,2, P. Le Rendu1, Y. Dan2, T. P. Nguyen1*
1Institut des Matériaux Jean Rouxel, University of Nantes, CNRS, 2 rue de la Houssinière, 44322 Nantes, France 2State Key Laboratory of Polymer Materials Engineering of China (Sichuan University), Polymer Research Institute of Sichuan University, Chengdu 610065, China

13:30 **Influence of nozzle geometry on the properties of CNW synthesized in a plasma jet** **G.PII. 24**
S.D. Stoica, S. Vizireanu, C.R. Luculescu, B. Mitu, G. Dinescu
National Institute for Laser, Plasma and Radiation Physics, Magurele, 077125, Romania

13:30 **Polyethylene glycol-silver nanocomposite material for antimicrobial applications** **G.PII. 25**
V. Satulu(1), B. Mitu (1), V. Ion(1), I. Sarbu(2), D. Pelinescu (2), G. Dinescu (1)
(1) National Institute for Laser, Plasma and Radiation Physics, Magurele, 077125, Romania (2) University of Bucharest, Centre for Research, Education and Consulting in Microbiology, Genetics and Biotechnology (MICROGEN),, Bucharest, Romania

13:30 **Properties of hybrid composites made of plasma-chemical deposited organosilicon layer on electrospun polymer nanofibers** **G.PII. 26**
Eva Kedronova1, Lenka Zajickova2, Dirk Hegemann3, Miroslav Michlicek2, Anton Manakhov2, Milos Klima2, Eliska Mikmekova4
1 Department of chemistry, Faculty of Science, Masaryk University Brno, Czech Republic; 2 Department of Physical Electronics, Faculty of Science, Masaryk University Brno, Czech Republic; 3 EMPA St. Gallen, Switzerland; 4 Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Brno, Czech Republic

13:30 **Stark effect in GaNAsBi/GaAs quantum wells operating at 1.55 μm** **G.PII. 27**
C. Bilel*, M. M. Habchi, A. Rebey, and B. El Jani
University of Monastir, Faculty of Sciences Unité de Recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5019 Monastir, Tunisia E-mail: * chakroun_bilel01@yahoo.fr

13:30 **Composition control PECVD SiCxNy films deposited from new organosilicon precursor** **G.PII. 28**
E. Ermakova, M. Kosinova, Yu. Rumyantsev
Nikolaev Institute of Inorganic Chemistry SB RAS

13:30 **EPR study of paramagnetic centers in SiO2:C adsorbent** **G.PII. 29**
D.V. Savchenko(1),(2), B.D. Shanina(1), E.N. Kalabukhova(1), A.A. Sitnikov(1), V.S. Lysenko(1), V.A. Tertykh(3)
(1)V.E. Lashkaryov Institute of Semiconductor Physics, NASU, Kyiv, 03028, Ukraine (2)Institute of Physics, AS CR, Praha 8, 18221, Czech Republic (3)A.A. Chuiko Institute of Surface Chemistry, NASU, Kyiv, 03164, Ukraine

13:30 **Microanalytical detection and microstructural role of C impurities in ZnO-porous silicon nanostructured composite films.** **G.PII. 30**
D. Gallach1,2, L. Le Brizoual3, N. Gautier4, M.D. Ynsa Alcalá1,5, V Torres Costa1,2, JP Landesmann6, M Manso Silván1,2
1 Departamento de Física Aplicada, Universidad Autónoma de Madrid, Madrid, Spain 2 Instituto de Ciencia de Materiales Nicolás Cabrera, Universidad Autónoma de Madrid, Madrid, Spain 3 Institut d'Electronique et de Télécommunications de Rennes - UMR 6164. Université de Rennes 1.35042 Rennes, France. 4 Institut de Materiaux de Nantes, UMR 6502, Nantes , France. 5 Centro de Microanálisis de Materiales, Universidad Autónoma de Madrid, Madrid, Spain. 6 Institut de Physique de Rennes, UMR 6251, Rennes , France.

13:30 **Thin film encapsulation of organic light emitting diodes with multi inorganic layer prepared by cyclic chemical vapor deposition system** **G.PII. 31**
Jae Seok An1, Ha Jun Jang1,2, Cheol Young Park1, Jong Ho Lee1, and Bum Ho Choi1*
1National Center for Nanoprocess and Equipments, Korea Institute of Industrial Technology, Gwangju 500-480, Korea; 2Advanced Chemical & Engineering, Chonnam National University, Gwangju 500-757, Korea

13:30 **Investigation of SHG Properties of Some Azo-Molecules Doped in Sol-gel Thin Films** **G.PII. 32**
I.C. Vasiliu1, I. Ionita2, A. Matei3, M.Elisa1, R. Iordanescu1, I. Feraru1, A. Emandi1
1INOE 2000 - National Institute for Optoelectronics, 409 Atomistilor Str., Magurele RO-077125, Bucharest, Romania, icvasiliu@inoe.inoe.ro 2UB - University of Bucharest, 405 Atomistilor Str., Magurele RO-077125, Bucharest, Romania 3INFLPR - National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor Street, Magurele, RO-077125 Bucharest, Romania

13:30 **Growth and Characterization od ncNi-carbon nanolayered structure** **G.PII. 33**
P.A.Karaseov1, A.I.Titov1, M.V.Mishin1, V.S.Protopopova2, A.Ya.Vinogradov3, O.A.Podsvirov1, P.G.Gabdullin1, E.N.Shubina1
State Polytechnic University, St. Petersburg, Russia; Aalto University, Helsinki, Finland; Ioffe Institute, St. Petersburg, Russia

13:30 **DAMAGE FORMATION IN SILICON DURING SMALL CLUSTER ION IMPLANTATION** **G.PII. 34**
P.A.Karaseov, A.I.Titov, K.K.Karabeshkin
State Polytechnic University, St.Petersburg, Russia

13:30 **Structure and optical properties of DLC:Cu thin films grown by using high density plasma** **G.PII. 35**
Š. Meškinis, A. Čiegis, A. Vasiliauskas, K. Šlapikas, S. Tamulevičius, G. Niaura
Institute of Materials Science of Kaunas University of Technology, Savanorių 271, 50131 Kaunas, Lithuania

13:30 **Multiwavelength Raman analysis of SiOx and N containing amorphous diamond like carbon films** **G.PII. 36**
Asta Tamulevičienė*, Vitoldas Kopustinskas*, Gediminas Niaura**, Šarūnas Meškinis*, Sigitas Tamulevičius*
*Institute of Materials Science of Kaunas University of Technology, Savanorių Ave. 271, LT-50131 Kaunas, Lithuania **Center for Physical Sciences and Technology, Institute of Chemistry, A. Goštauto 9, LT-01108 Vilnius, Lithuania

13:30 **FTIR STUDIES OF SILICON CARBIDE NANOSTRUCTURES** **G.PII. 37**
I. Karbovnyk (1), P.Savchyn (1), A. Huczko (2), M. Cestelli Guidi (3), C Mirri (3), A. I. Popov (4,5)
(1) Dept of Electronics, Ivan Franko National University of Lviv, 79005, Lviv, Ukraine, (2) Department of Chemistry, Warsaw University, Poland (3) INFN-Laboratori Nazionali di Frascati, Italy (4) Institute of Solid State Physics, University of Latvia, LV-1063, Riga, Latvia; (5) Institute Laue-Langevin, F-38042 Grenoble, France;

13:30 **Investigation of the boundary reaction between InTe-C and InSb for the characterization carbon doping effect on In-Sb-Te ternary alloys** **G.PII. 38**
Hyunsoo Kim13, Jinse Kim1, Jongmin Geum1, Hasub Hwang3, YongTae Kim*2, Man-Young Sung*1
1 Electrical Engineering, Korea University; 2 Korea Institute Science and Technology (KIST); 3 Memory Division Samsung Electronics co. ltd

16:00 **PLENARY SESSION**

Recent advances in transition metal nitrides-III : Jochen SCHNEIDER, Vladimir UGLOV

08:30 **Erosion resistant, self-healing Cr2AlC nanolaminate MAX phase coatings** **G.IX. 1**
Christoph LEYENS
Technische Universität Dresden, Institute of Materials Science, Chair of Materials Engineering, Helmholtzstraße 7, 01062 Dresden, Germany

09:00 **Design of superelastic interlayer for tribological coatings** **G.IX. 2**
T. Polcar, M. Callisti, B.G. Mellor
University of Southampton, UK & Czech Technical University in Prague, Czech Republic; University of Southampton,UK

09:15 **Phase stability predictions of (Cr1-x,Mx)2(Al1-y,Ay)(C1-z,Xz) (M = Ti, Hf, Zr; A = Si, X = B)** **G.IX. 3**
L. Shang, D. Music, M. to Baben and J. M. Schneider
Materials Chemistry, RWTH Aachen University, Kopernikusstr. 10, 52074 Aachen, Germany

09:30 **Development and characterization of bio- tribological Cr/CrN + a-C:H (doped Cr) nano- multilayer coatings for medical tools application** **G.IX. 4**
L. Major- 1, J.M. Lackner- 2, M. Kot- 3, M. Janusz- 1, J. Morgiel- 1
1- Institute of Metallurgy and Materials Science, Polish Academy of Sciences, PL30-059 Cracow, 25 Reymonta Street, Cracow, Poland; 2- JOANNEUM RESEARCH- Materials- Institute for Surface Technologies and Photonics, Leobner Strasse 94, 8712 Niklasdorf, Austria; 3- AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Laboratory of Surface Engineering and Tribology, Al. Mickiewicza 30, PL-30059 Cracow, Poland

09:45 **Synthesis of Ti2AlN thin films by thermal annealing of Ti/AlN multilayers deposited on different substrates by magnetron sputtering** **G.IX. 5**
M. Alkazaz, M.F. Beaufort, J.F. Barbot, and T. Cabioc'h.
Institut Pprime, CNRS - Université de Poitiers - ENSMA - UPR 3346 Département Physique et Mécanique des Matériaux Boulevard Marie et Pierre Curie - BP 30179 86962 FUTUROSCOPE CHASSENEUIL Cedex, France

10:00 **Coffee break**

New deposition methods - HIPIMS : Christoph LEYENS, Kostas SARAKINOS

10:30 **Trends in magnetron sputtering of Me-B-C coatings** **G.X. 1**
Ulf Jansson
Department of Chemistry - Angstrom, Uppsala University, Box 538, 751 21 Uppsala Sweden

11:00 **GROWTH OF CNX FILMS IN Ar-N2 AND Ne-N2 MIXTURES BY DC AND HIPIMS SPUTTERING** **G.X. 2**
C. Nouvellon1, N. Britun?, M. Michiels1, R. Snyders1,2
1 Materia Nova Research Center - Parc Initialis, 1, Avenue Copernic, B-7000 Mons, Belgium 2Chimie des Interactions Plasma-Surface, CIRMAP, Universit? de MONS - 20, Place du Parc, B-7000 Mons, Belgium

11:15 **Piezoresistive properties of metal containing diamond like carbon nanocomposite thin films deposited by HIPIMS** **G.X. 3**
R. Gudaitis, Š. Meškinis, A. Vasiliauskas, A. Čiegis, M. Andrulevičius, S. Tamulevičius, G. Niaura
Institute of Materials Science of Kaunas University of Technology, Savanorių 271, 50131 Kaunas, Lithuania

11:30 **Impact of the nanostructure and phase transition of TaNx x=[0,1.8]buffers films elaborated by HiPPiMS on the CNT morphology** **G.X. 4**
Brigitte Bouchet-Fabre1, Marie-Christine Hugon 2, Mathieu Pinault 1, Eddy Foy 3, Martine Mayne-L'Hermite 1; Cécile Reynaud 1; Tibériu Minéa 2
1 IRAMIS/NIMBE/LEDNA, CEA-Saclay, F- 91191 Gif / Yvette Cedex 2 LPGP, U-Psud-CNRS, Université Paris-Sud, F-91401 Orsay Cedex 3 IRAMIS/SIS2M/LAPA CEA-Saclay, F- 91191 Gif / Yvette Cedex

11:45 **Influence of HIPIMS Pulse Duration on the Properties of TiAlN Films Deposited at Low Substrate Temperature** **G.X. 5**
Tetsuhide SHIMIZU 1), Tomotaro WATANABE 2), Yoshikazu TERANISHI 2), Hiroshi NAGASAKA 2), Hidetoshi KOMIYA 2), Kazuo MORIKAWA 2), Ming YANG1)
1) Division of Human Mechatronics Systems, Tokyo Metropolitan University, 2) Tokyo Metropolitan Industrial Technology Research Institute

12:00 **Lunch break**

Analysis methods for nanostructured thin films : Valentin CRACIUN, Ulf JANSSON

14:00 **In situ study of the texture development during sputter deposition of V-C thin films** **G.XI. 1**
Sunil Kotapati1, Bärbel Krause1, Marthe Kaufholz1, , Richard Thelen3, Michael Stüber4, Sven Ulrich4 and Tilo Baumbach1, 2
1)IPS, Karlsruhe Institute of Technology (KIT), Germany; 2) ANKA, Karlsruhe Institute of Technology (KIT), Germany; 3) IMT, Karlsruhe Institute of Technology (KIT), Germany; 4) IAM-AWP, Karlsruhe Institute of Technology (KIT), Germany.

14:15 **Cross-Sectional X-ray Nanodiffraction as a Powerful Tool to Reveal Structure-Property Relationships in Nanocrystalline Coatings** **G.XI. 2**
A. Riedl (a)*, R. Daniel (b), M. Stefenelli (a), J. Todt (c), C. Krywka (d), C. Mitterer (b), and J. Keckes (c)
(a) Materials Center Leoben Forschung GmbH, Roseggerstraße 12, 8700 Leoben, Austria (b) Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, 8700 Leoben, Austria (c) Erich Schmid Institute for Materials Science, Austrian Academy of Sciences, 8700 Leoben, Austria (d) Helmholtz Zentrum Geesthacht, Max-Planck-Str. 1, 21502 Geesthacht, Germany

14:30 **In situ X-ray study during off-normal sputter deposition of VN** **G.XI. 3**
B. Krause, M. Kaufholz, S. Kotapati, T. Baumbach
(1) IPS, Karlsruhe Institute of Technology (KIT) (2) ANKA Synchrotron Radiation Facility, Karlsruhe Institute of Technology (KIT)

14:45 **Identification of the coating defects responsible for pitting corrosion on PVD deposited steel samples by a novel method: Large Area High Resolution (LAHR) mapping** **G.XI. 4**
Martin Balzer
fem - Forschungsinstitut für Edelmetalle und Metallchemie, Katharinenstrasse 17, 73525 Schwäbisch Gmünd, Germany

15:00 **Optical and EPR study of a-SiCxNy films obtained by magnetron sputtering** **G.XI. 5**
D. Savchenko(1), V. Kulikovsky(1),(2), V. Vorlíček(1), J. Lančok(1), E. Kalabukhova(3)
(1) Institute of Physics, AS CR, Praha, Czech Republic (2) Institute for Problems of Materials Science, NASU, Kiev, Ukraine (3) V.E. Lashkaryov Institute of Semiconductor Physics, NASU, Kiev, Ukraine

15:15 **Thermal stability and long term hydrogen release from soft to hard hydrogenated amorphous carbons analyzed using in-situ Raman spectroscopy. Application to tokamak deposits** **G.XI. 6**
C. Pardanaud1, C. Martin1, G. Giacometti1, P. Roubin1, B. Pégourié2, C. Hopf3, T. Schwarz-Selinger3, W. Jacob3
1 Aix-Marseille Université-CNRS, PIIM, 13397 Marseille cedex 20, France; 2 CEA, IRFM, 13108 Saint-Paul-lez-Durance, France; 3 Max-Planck-Institute für Plasmaphysik, EURATOM Association, Boltzmannstr. 2, 85748 Garching, Germany

15:30 **PECVD synthesis and characterization of BCxNy films from N-triethylborazine and hydrogen** **G.XI. 7**
V.S. Sulyaeva, M.L. Kosinova, Yu.M. Rumyantsev, F.A. Kuznetsov
Nikolaev Institute of Inorganic Chemistry SB RAS 3, Acad. Lavrentiev Ave., Novosibirsk, 630090, Russia

15:45 **Coffee break**

Energy related applications : Gregory ABADIAS, Thien-Phap NGUYEN

16:30 **Use of transition metal nitride films as electrode in energy storage microdevices** **G.XII. 1**
J.F. Pierson1, S. Bouhtiyya1, R. Lucio Porto2, F. Capon1, T. Brousse2
1 Institut Jean Lamour, Université de Lorraine, Nancy, France 2 Institut des Matériaux Jean Rouxel, Université de Nantes, Nantes, France

17:00 **Investigation of oxynitride thin films for photocatalytic water splitting** **G.XII. 2**
Markus Pichler, Daniele Pergolesi, Christof Schneider, Thomas Lippert, Alexander Wokaun
Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland

17:15 **«On-Chip» Nanoporous Titanium Nitride Electrodes** **G.XII. 3**
Micheal Burke, Brendan Kennedy,Mary Manning, Alan Blake, Aidan Quinn.
Tyndall National Institute

17:30 **Functionally graded PDMS/Ag nanocomposites for broadband solar thermal harvesting applications** **G.XII. 4**
P. Nikolaou1, C.Mina1, L.E. Koutsokeras1, G. Constantinides1, S. Kalogirou1, E. Lidorikis2, A. Avgeropoulos2, P.C. Kelires1, P. Patsalas3
1Cyprus University of Technology, Department of Mechanical and Materials Science and Engineering, Research Unit for Nanostructured Materials Systems, Limassol, Cyprus; 2University of Ioannina, Department of Materials Science and Engineering, 45110 Ioannina, Greece; 3Aristotle University of Thessaloniki, Department of Physics, 54124 Thessaloniki, Greece;

17:45 **Porous Carbon Nanoparticle Networks with Tunable Absorbability** **G.XII. 5**
Wei Dai1, Seong Jin Kim1, 2, Won-Kyung Seong1, Sang Hoon Kim1, Kwang-Ryeol Lee1, Ho-Young Kim2, and Myoung-Woon Moon1,*
1Institute for Multi-disciplinary Convergence of Matter, Korea Institute of Science and Technology, Seoul 130-650, Republic of Korea 2 School of Mechanical and Aerospace Engineering, Seoul National University, Seoul 151-744, Republic of Korea

18:00 **Photoluminescence spectrum transformation in Si rich silicon nitride versus silicon nitride stoichiometry** **G.XII. 6**
T.V. Torchynska1, J.L. Casas Espinola1, E. Vergara Hernandez1, A. Slaoui2 and L. Khomenkova3,
1ESFM-Instituto Politecnico Nacional, Mexico DF, 97738, MEXICO 2ICube, 23 rue du Loess, BP 20 CR, 67037 Strasbourg Cedex 2, FRANCE 3 V. Lashkaryov Institute of Semiconductor Physics, 45 Pr. Nauky, 03028 Kyiv, UKRAINE

Graphenes - I : Bodgana MITU, Pierre-Yves TESSIER

08:30 **Carbon Foams made of Nanotubes and Graphene Nanoflakes: a Monte Carlo and Tight-Binding Molecular Dynamics Study** G.XIII. 1
C. Mathioudakis, P. C. Kelires
Research Unit for Nanostructured Materials Systems, Department of Mechanical and Materials Science Engineering, Cyprus University of Technology, P.O. Box 50329, 3603 Lemesos, Cyprus

08:45 **Electron microscopy and spectroscopy studies of plasma functionalised graphene** G.XIII. 2
Ehsan Rezvani1, Niall McEvoy2, Hugo Nolan1,2, Clive Downing, Toby Hallam and Georg Duesberg1
1) School of Chemistry, Trinity College Dublin, Dublin 2, Ireland, 2) CRANN, Trinity College Dublin, Dublin 2, Ireland.

09:00 **ELECTRON SPECTROSCOPY OF COMPOSITE MATERIALS CONTAINING 2D CARBON** G.XIII. 3
S. Kaciulis, A . Mezzi, S.K. Balijepalli, M. Lavorgna, H. Xia
Institute for the Study of Nanostructured Materials, ISMN – CNR, Roma, Italy; Institute of Composite and Biomedical Materials, IMCB – CNR, Napoli, Italy; State Key Laboratory of Polymer Materials Engineering, Sichuan University, China

09:15 **Synthesis and doping of graphene with plasmas assistance and its application in lithium ion batteries** G.XIII. 4
Chundong Wang,1 Wenjun Zhang,2 Chris Van Haesendonck1
1. Laboratory of Solid-State Physics and Magnetism, K.U. Leuven, BE-3001 Leuven, Belgium 2. Center of Super-Diamond and Advanced Films (COSDAF), and Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, China

09:30 **Exfoliated graphene doped mesoporous titania films: functional nanocomposites from integrated processing** G.XIII. 5
Luca Malfatti, Paolo Falcaro, Alessandra Pinna, Barbara Lasio, Maria F. Casula, Danilo Loche, Andrea Falqui, Benedetta Marmiroli, Heinz Amenitsch, Roberta Sanna, Alberto Mariani, Plinio Innocenzi
LMNT, University of Sassari, Italy; CMSE-CSIRO, Clayton South, Australia; Department of Chemical and Geological Sciences, University of Cagliari, Italy; IIT Italian Institute of Technology, Genova, Italy; Institute of Inorganic Chemistry, Graz University of Technology, Austria; Department of Chemistry and Pharmacology, University of Sassari, Italy.

09:45 **Coffee break**

Graphenes - II : Saulius KACIULIS, Rony Snyders

10:00 **Sigmoidal kinetics of graphene growth under continuous carbon supply** G.XIV. 1
Kemal Celebi, Matthew T. Cole, Ning Yang, Nalin Rupesinghe, John Robertson, Kenneth B. K. Teo, Hyung Gyu Park
Department of Mechanical and Process Engineering, ETH Zurich; Department of Engineering, University of Cambridge; Aixtron Ltd.

10:15 **Transport and Vibrational properties of CVD-grown graphene on PMN-PT substrate** G.XIV. 2
Wenjing Jie, Jianhua Hao
Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Hong Kong

10:30 **Graphene Oxide Scrolls Fabricated by Molecular Combing** G.XIV. 3
Jumiati Wu, Hai Li, Hua Zhang
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore

10:45 **CVD synthesis and wetting properties of various BN nanostructure films** G.XIV. 4
Amir Pakdel, Yoshio Bando, Dmitri Golberg
National Institute for Materials Science (NIMS), Tsukuba, Japan

11:00 **DISCUSSION**

12:00 **Lunch**

E-MRS 2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM H

ALTECH 2014 - Analytical techniques for precise characterization of nanomaterials

Symposium Organizers:

Burkhard Beckhoff, Physikalisch-Technische Bundesanstalt, Germany

Fernando Araujo de Castro, National Physical Laboratory, Teddington, UK

Omar El Gawhary, VSL Dutch Metrology Institute, Delft, The Netherlands

Petr Klapetek, Czech Metrology Institute, Brno, Czech Republic

Cor Claeys, Imec, Leuven, Belgium

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26 May 2014

09:00 **Welcome to ALTECH 2014 - opening addresses by current and former ALTECH organizers as well as by LNE : Burkhard Beckhoff, Bernd Kolbesen and Jean-Rémy Filtz**

Recent Developments in Instrumentation for Nano Characterisation 1 : Burkhard Beckhoff and Luca Boarino

09:15 **Plasmonics for solid state lighting** H1 1
Jaime Gomez Rivas, Gabriel Lozano, Said R.K. Rodriguez, Marc A. Verschuuren
Center for Nanophotonics,FOM Institute AMOLF, c/o Philips Research, High-Tech campus 4, Eindhoven, The Netherlands and COBRA Institute, Eindhoven university of technology, Eindhoven, The Netherlands; Center for Nanophotonics,FOM Institute AMOLF, c/o Philips Research, High-Tech campus 4, Eindhoven, The Netherlands ; Center for Nanophotonics,FOM Institute AMOLF, c/o Philips Research, High-Tech campus 4, Eindhoven, The Netherlands; Philips Research, High-Tech campus 4, Eindhoven, The Netherlands

09:45 **Recent achievement in the micro- and nano-materials characterization by scanning photoemission imaging and spectromicroscopy** H1 2
Matteo Amati, Luca Gregoratti
Elettra - Sincrotrone Trieste S.C.p.A. di interesse nazionale, Trieste, Italy

10:00 **Coffee break**

Recent Developments in Instrumentation for Nano Characterisation 2 : Miklos Fried and Fernando Araujo de Castro

10:30 **Transmission electron microscopy of bimetallic nanoparticles: In-situ heating and 3D tomography** H2 1
Ning Lu*, Jinguo Wang*, Shuifen Xie+, Younan Xia+, Moon Kim*
*Department of Materials Science and Engineering, The University of Texas at Dallas, Richardson, Texas 75080 USA; +The Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, School of Chemistry and Biochemistry and School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA 30332 USA

10:45 **Design and development of a new experimental set-up to study solid-gas reactions and processes in nanomaterials at isobaric and isothermal environment by synchrotron X-ray powder diffraction.** H2 2
E. Salas-Colera 1-2, A. Mu?oz-Nova I1-2, C. Heyman 3, J. Rubio-Zuazo 1-2 and G.R. Castro 1-2
1 Spanish CRG BM25 Beamline SpLine at the ESRF, Grenoble, France; 2 Instituto de Ciencia de Materiales de Madrid-ICMM/CSIC, Madrid, Spain; 3 CAO-DAO Heyman 5, place de Gordes,38000 Grenoble, France.

11:00 **In situ HVEM irradiation study of intrinsic point defect behavior in Si nanowire structures** H2 3
J. Vanhellemont1, S. Anada2, T. Nagase2, H. Yasuda2, H. Bender3, R. Rooyackers3, and A. Vandooren3
1Department of Solid State Sciences, Ghent University, Belgium; 2Research Center for Ultra-High Voltage Electron Microscopy, Osaka University, Japan; 3IMEC, Leuven, Belgium

11:15 **Laboratory based X-ray Emission Spectroscopy for the investigation of chemical states** H2 4
L. Anklamm, W. Malzer, C. Schlesiger, S. Schuh, and B. Kanngießer
Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany

Analytical Techniques for Determination of Physical and Chemical Surface Properties : Bernd Kolbesen and Cor Claeys

11:30 **Metrology for surface chemical analysis at the nanoscale: Status and challenges** H3 1
W. E. S. Unger
BAM Federal Institute for Materials Research and Testing Unter den Eichen 87, 12205 Berlin Germany

12:00 **Qualitative and quantitative analyses of functionalized diamond nanoparticle for precise characterization** H3 2
Naoki Komatsu, Li Zhao, Hongmei Qin, Takahide Kimura
Shiga University of Medical Science

12:15 **Highly reproducible substrate for Surface Enhanced Raman Spectroscopy exploiting block copolymer self-assembly** H3 3
(a) Claudia Diletto, (b) Pasquale Morvillo, (a) Auriemma Finizia, (a) Claudio De Rosa, (c) Antonio Sasso, (c) Giulia Rusciano, (c) Gianluigi Zito
(a) Department of Chemical Sciences University of Napoli «Federico II» (b) ENEA-Italian National Agency for New Technologies, Energy and Sustainable Development-Portici Research Center (c) Department of Physics University of Napoli «Federico II»

12:30 **Doped tin oxide layers as sensitising layers in optical gas sensors: A study of optical properties using spectral ellipsometry.** H3 4
D. Fischer, A. Nooke, A. Hertwig, M. Weise, U. Beck, M. Kormunda (1)
BAM Federal Institute for Materials Research and Testing, Division 6.7, Unter den Eichen 87, 12205 Berlin, Germany; (1)J.E. Purkyne University, Faculty of Science, Department of Physics, Ceske mladeze 8, 40096 Usti nad Labem, Czech Republic

12:45 **Lunch break**

Advanced Optical Metrology : Omar El Gawhary, Bernd Güttler and Uwe Beck

14:15 **Optical metrology for photo-lithography** H4 1
Wim M.J. Coene
ASML Research, Veldhoven, The Netherlands.

14:45 **Multi-angle spectroscopic EUV reflectometry for analysis of thin films and interfaces** H4 2
Serhiy Danylyuk, Stefan Herbert, Peter Loosen; Larissa Juschkin; Rainer Lebert;
Chair for the Technology of Optical Systems, RWTH Aachen University and JARA - Fundamentals of Future Information Technology; Chair for the Experimental Physics of EUV, RWTH Aachen University and JARA – Fundamentals of Future Information Technology; Bruker ASC;

15:00 **Micro-Raman spectroscopy as a complementary technique to High Resolution X-Ray Diffraction for the SiGe thin layers characterization** H4 3
Aurèle DURAND1-2, Denis ROUCHON1, Delphine LE-CUNFF2, Patrice GERGAUD1
1 CEA - LETI, MINATEC Campus, 17 rue des martyrs, 38054 Grenoble cedex 9, France; 2 STMicroelectronics, 850 Rue Jean Monnet, 38926 Crolles, France

15:15 **A geometry independent approach to the measurement of the piezoelectric coefficient of thin films** H4 4
M Stewart, S Lepadatu, M Cain
National Physical Laboratory

15:30 **Coherent Fourier scatterometry as a metrology tool for periodic nanostructure characterization.** H4 5
N. Kumar(a), P. Petrik(a,b), S. F. Pereira(a), H. P. Urbach(a)
a) Optics Research Group, Department of Imaging Physics, Faculty of Applied Sciences, Delft University of Technology, P. O. Box 5046, 2600GA Delft, The Netherlands b) Research Centre for Natural Sciences, Institute for Technical Physics and Materials Science, Hungarian Academy of Sciences, H-1121 Budapest, Konkoly Thege Miklós út 29-33, Hungary

15:45 **Challenges in using polarisation dependent Raman spectroscopy as a probe of molecular orientation in organic thin films** H4 6
Alina Zoladek-Lemanczyk (1), Jong Soo Kim (2), Ji-Seon Kim (2), James Blakesley (1), Fernando A. Castro (1)
(1) - Materials Division, National Physical Laboratory, Hampton Road, Teddington TW11 0LW, United Kingdom; (2) - Department of Physics & Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, United Kingdom

16:00 **Coffee break**

Metrology for 'More than Moore' Technologies : Thierry Conard and Matthias Müller

16:30 **A comparative analysis of different measurement techniques to monitor metal and organic contamination in silicon device processing** H5 1
M.L. Polignano, D. Codegoni, S. Grasso, I. Mica, G. Borionetti, A. Nutsch
ST Microelectronics, via Olivetti, 2, 20864 Agrate Brianza (MB) Italy; MEMC Electronic Materials SpA, a Sunedison Company Viale Gherzi ,31, 28100 Novara Italy; Physikalisch-Technische Bundesanstalt, Abbestr.2-12, 10587 Berlin, Germany

17:00 **Dimensional and defectivity nanometrology of directed self-assembly patterns** H5 2
C. Sim?o,a W. Khunsin,a A. Amann,b N. Kehagias,a M. A. Morris c,d and C. M. Sotomayor Torres a,e
Catalan Institute of Nanoscience and Nanotechnology ICN2, Campus de la UAB, Barcelona 08193, Spain; b School of Mathematics and the Tyndall National Institute, UCC, Cork Ireland; c School of Chemistry and the Tyndall National Institute, UCC, Cork Ireland; d Centre for Research on Adaptive Nanostructures and Nanodevices, TCD, Ireland; e Catalan Institute of Research and Advanced Studies, Barcelona 08010 , Spain;

17:15 **Distinction between silicon and oxide traps in UTBOX devices using single-trap spectroscopy** H5 3
Wen Fang, Eddy Simoen, Marc Aoulaiche, Jun Luo, Chao Zhao, Cor Claeys
Wen Fang1,2,3; Eddy Simoen1; Marc Aoulaiche1,4;Jun Luo3;Chao Zhao3; Cor Claeys1,2□ 1 Imec, Kapeldreef 75, B-3001 Leuven, Belgium; 2 E.E. Dept., KU Leuven, Leuven, Belgium; 3 Key Laboratory of Microelectronics Device & Integrated Technology, Chinese Academy of Sciences, Beijing 100029, China; 4 presently at Micron Technology Belgium, imec Campus, Belgium

17:30 **Towards single-trap spectroscopy: Generation-recombination noise in UTBOX SOI nMOSFETs** H5 4
E. Simoen1,2, B. Cretu3, W. Fang1,4,5, M. Aoulaiche1,6, J.-M. Routoure7, R. Carin7, S. dos Santos7, J. Luo4, C. Zhao4, J.A. Martino8 and C. Claeys1,5
1Imec, Kapeldreef 75, B-3001 Leuven, Belgium 2Depart. Of Solid-St. Physics, Ghent University, Gent, Belgium 3ENSICAEN, UMR 6072 GREYC, F-14050, Caen, France 4Key Laboratory of Microelectronic Devices & Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, 100029, China 5E.E. Dept., KU Leuven, Leuven, Belgium 6presently at Micron Technology Belgium, imec Campus, Belgium 7 University of Caen, UMR 6072 GREYC, F-14050, Caen, France 8LSI/ PSI/USP - University of S?o Paulo, SP, Brazil

18:00 **Effect of the miniband formation on the carrier lifetime in silicon nanodisk array structure fabricated by using bio-templates and neutral beam etching techniques** H5 5
D. Ohori(1), Y. Murayama(1), K. Kondo(1), M. M. Rahman(2), M. E. Syazwan(2), T. Okada(2), S. Samukawa(2), A. Fukuyama(1), and T. Ikari(1)
(1) DEEE, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki, Japan (2) Institute of Fluid Science, Tohoku University, 2-1-1 Katahira, Aoba, Sendai, Japan

18:15 **Quantitative compositional analysis of BeMgZnO alloys using combined ion beam techniques** H5 6
Z. Zolnai(1), J. Volk(1,2), M. Toporkov(2), D. Demchenko(3), V. Avrutin(2), H. Morkoç(2,3), Ü. Özgür(2), and G. Battistig(1)
(1) Research Centre for Natural Sciences, Institute for Technical Physics and Materials Science, H.A.S., 1121 Budapest, Konkoly-Thege M. út 29-33, Hungary (2) Department of Electrical and Computer Engineering, Virginia Commonwealth University, 601 W Main St, Richmond, VA 23284, USA (3) Department of Physics, Virginia Commonwealth University, 701 W. Grace St., Richmond, VA 23284, USA

Poster Session 1 - Analytical Techniques for Nanomaterials : Claudia Fleischmann, Bernd Kolbesen, Miroslav Valtr, Andreas Hertwig, Luca Boarino and Omar El Gawhary

18:30 **Multimodal imaging in nano-sciences** HP6 1
U. Schmidt, A. Jauss, M. Tchaya, H. Fischer
WITec GmbH, Lise-Meitner Str. 6, Ulm, 89081, Germany

18:30 **Development of polymeric membranes for anion analyses in solutions with TXRF** HP6 2
N. Kallithrakas-Kontos, V. Hatzistavros
Analytical and Environmental Chemistry Laboratory, University Campus, Technical University of Crete, GR-73100 Chania, Greece

18:30 **Combining SAXS and DLS for real-time analysis of nano-particle production** HP6 3
Alexander Schwamberger; Bert De Roo; David Jacob; Leander Dillemans; Lutz Bruegemann; Jin Won Seo; Jean-Pierre Locquet;
Bruker AXS, Karlsruhe, Germany; Department of Physics and Astronomy, KU Leuven, Belgium; Cordouan Technologies, Pessac, France; Department of Physics and Astronomy, KU Leuven, Belgium; Bruker AXS, Karlsruhe, Germany; Department of Metallurgy and Materials Engineering, KU Leuven, Belgium; Department of Physics and Astronomy, KU Leuven, Belgium;

18:30 **Characterization of TiO2 antireflection coatings elaborated by APCVD for monocrystalline silicon solar cells** HP6 4
D. Hocine1, M.S. Belkaid1, M. Pasquinelli2, L. Escoubas2, P. Torchio2, A. Moreau2
1Laboratory of Advanced Technologies of Electrical Engineering (LATAGE). Mouloud Mammeri University (UMMTO), Algeria. 2Aix-Marseille University, Institut Matériaux Microélectronique Nanosciences de Provence – IM2NP CNRS UMR 7334, France.

18:30 **Optical characterization of MoO3 and ITO layers made by reactive magnetron sputtering** HP6 5
C. Major1, Z. Labadi1, Z. E. Horvath1, Z. Zolnai1, M. Fried1, 2
1. Institute for Technical Physics and Materials Science, Research Centre for Natural Sciences, H-1525 Budapest, POB 49, Hungary 2. Doctoral School of Molecular and Nanotechnologies, Faculty of Information Technology, University of Pannonia, Egyetem u.10, Veszprem, H-8200, Hungary

18:30 **High-accuracy determination of X-ray fundamental parameters using reference materials certified by ion beam analysis** HP6 6
J.L.Colaux, P.Hönicke, C.Jeynes, B.Beckhoff
University of Surrey Ion Beam Centre, Guildford GU2 7XH, England; Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany

18:30 **Ultra-trace material analysis in conditions of the planar X-ray waveguide-resonator application** HP6 7
1 V.K. Egorov, E.V. Egorov, 2 E.M. Loukiantchenko
1 IMT RAS, Chernogolovka, Moscow District, 142432 Russia 2 OOO "Poljus", Saint-Petersburg, Russia

18:30 **Control current stress technique for the investigation of ultrathin gate dielectrics of MIS devices** HP6 8
V.V.Andreev1, G.G.Bondarenko2, V.M.Maslovsky3, A.A.Stolyarov1, D.V.Andreev1
1) Bauman Moscow State Technical University, Kaluga Branch. 4, Bazhenov St., Kaluga, 248600, Russia 2) National Research University Higher School of Economics, 20, Myasnitskaya Ulitsa, Moscow 101000, Russia 3) The state unitary enterprise of a city of Moscow Research-and-production centre «SPURT», Zelenograd, West of the 1-st proezd 4, 124460, Russia

18:30 **Consideration of high inclusions concentration influence on absorption of thin nanocomposite films** HP6 9
Lozovski V. Z. 1, Mytiansky D. S. 2, Strilchuk G. M. 1
1Institute of High Technologies, Taras Shevchenko National University of Kyiv, 64 Volodymyrska Str, 01603 Kyiv, Ukraine; 2Radiophysical Department, Taras Shevchenko National University of Kyiv, 64 Volodymyrska Str, 01603 Kyiv, Ukraine

18:30 **Surface/interface characterization of semiconductors and solar cells via air Photoemission Spectroscopy and Surface Photovoltage Spectroscopy** HP6 10
Iain D Baikie, Angela C Grain, James Sutherland, Jamie Law
KP Technology Ltd, Burn Street, Wick, Caithness, KW1 5EH, UK

18:30 **Growth of dilute bismides GaAsBi/GaAs nanowires by metalorganic vapor phase epitaxy** HP6 11
Y. Soda*, H. Fitouri, C. Bilel, A. Rebey, and B. El Jani
University of Monastir, Faculty of Sciences Unité de Recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5019 Monastir, Tunisia E-mail: * benzaied.yethreb@yahoo.fr

18:30 **Fundamental parameters for reference-free quantitative X-ray fluorescence analysis** HP6 12
Michael Kolbe, Philipp Hönicke, Matthias Müller, Burkhard Beckhoff
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany

18:30 **High-resolution atomic force microscopy of high-quality, solvent-free crystals of [6,6]-phenyl-C61-butyric acid methyl ester** **HP6 13**
Giovanni Mattia Lazzerini, Giuseppe Paternò, Franco Cacialli, Andrew Yacoot
G.M. Lazzerini and A. Yacoot: National Physical Laboratory, Hampton Road Teddington Middlesex TW11 0LW, UK; G. Paternò and F. Cacialli: London Centre for Nanotechnology and Department of Physics and Astronomy, University College London, Gower Street, London WC1E 6BT, UK

18:30 **In-situ time-resolved GISAXS investigation during the RF-sputter deposition of Ag** **HP6 14**
G. Santoro, S. Yu, P. Zhang, Sarathlal K.V., J.F.H Risch, M. Hernández, C. Domingo, S.V. Roth
Photon Science, DESY, Notkestr. 85, D-22607 Hamburg, Germany;Photon Science, DESY, Notkestr. 85, D-22607 Hamburg, Germany;Photon Science, DESY, Notkestr. 85, D-22607 Hamburg, Germany;Photon Science, DESY, Notkestr. 85, D-22607 Hamburg, Germany;Photon Science, DESY, Notkestr. 85, D-22607 Hamburg, Germany;Institute of Structure of Matter, IEM-CSIC, Serrano 121-123, E-28006 Madrid, Spain;Institute of Structure of Matter, IEM-CSIC, Serrano 121-123, E-28006 Madrid, Spain;Photon Science, DESY, Notkestr. 85, D-22607 Hamburg, Germany

18:30 **Study on reinforcement of polyamide 1212 via graphene oxide** **HP6 15**
Ziqing Cai, Xiaoyu Meng*, Yingshuai Han, Qiong Zhou*, Lishan Cui
College of Science, China University of Petroleum, Beijing 102249, China. Beijing Key Laboratory of Failure, Corrosion and Protection of Oil/gas Facilities, Beijing 102249, China.

18:30 **Boron doped cubic silicon probed by high resolution X-ray RSM** **HP6 16**
T. Ulyanenkova1, M. Myronov2, A. Ulyanenkov1
1Rigaku Europe SE, Am Hardtwald 11, Ettlingen, Germany 2Department of Physics, The University of Warwick, Coventry, UK

18:30 **C K-edge XANES-measurements using an off-axis reflection zone plate with a Laser-Produced Plasma Source** **HP6 17**
Katharina Witte* (1), I. Mantouvalou (2), S. Martyanov (2), S. Günther (2), R. Jung (1), H. Stiel (1), B. Kanngießer (2)
(1) Max-Born-Institut, Berlin, Germany; (2) Technical University of Berlin, Berlin, Germany; Berlin Laboratory for innovative X-ray Technologies (BLiX)

18:30 **Roughness effects in nanoindentation on thin films** **HP6 18**
Anna Charvátová Campbell, Petr Klapetek, Jan Martinek
Czech Metrology Institute

18:30 **Morphology of multiphase and functional thin films by Atomic Force Microscopy** **HP6 19**
M. Perani (1), E. di Russo (1), N. Brinkmann (2), B. Terheiden (2), D. Cavalcoli (1)
(1) Department of Physics and Astronomy, University of Bologna, Italy; (2) Department of Physics, University of Konstanz, Germany

18:30 **Grazing-incidence X-ray fluorescence analysis of buried interfaces in nanostructured crystalline silicon thin-film solar cells** **HP6 20**
D. Eisenhauer 1, B. Pollakowski 2, J. Baumann 3, V. Preidel 1, D. Amkreutz 4, B. Rech 4, F. Back 5, E. Rudigier-Voigt 5, B. Beckhoff 2, B. Kanngießer 3, C. Becker 1
1: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Young Investigator Group Nanostructured Silicon for photovoltaic and photonic implementations (Nano-SIPPE), Kekuléstr. 5, 12489 Berlin, Germany; 2: Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany; 3: Technische Universität Berlin, Institut für Optik und Atomare Physik, Analytische Röntgenphysik, Hardenbergstr. 36, 10623 Berlin, Germany; 4: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institut Silizium-Photovoltaik, Kekuléstr. 5, 12489 Berlin, Germany; 5: SCHOTT AG, Hattenbergstr. 10, 55122 Mainz, Germany

18:30 **Structural properties of Pb(ZrxTi1-x)O3** **HP6 21**
Anna V. Kimmel, Carlo Vecchini, Markys Cain
National Physical Laboratory, Teddington, TW11 0LW, UK.

18:30 **Hard and soft condensed matter X-RAY Reflectometry and GISAXS studies uzsing the incoatec microfocus source IμS** **HP6 22**
André Beerlink, Jürgen Graf, Bernd Hasse, Andreas Kleine, Carsten Michaelsen, Jörg Wiesmann
Incoatec GmbH, Max-Planck-Strasse 2, 21502 Geesthacht, Germany

18:30 **Synthesis and utilization of LaVO4:Eu3+nanoparticles as fluorescent near-field optical sensors** **HP6 23**
S.G. Nedilko (1), O.V. Chukova (1), Yu.A. Hizhnyi (1), S.A. Nedilko (1), T. Voitenko (1), L. Aigouy (2), L. Billot (2)
(1) Taras Shevchenko National University of Kyiv, 64 Volodymyrska St., 01601, Kyiv, Ukraine; (2) Laboratoire de Physique et d'Etude des Matériaux, ESPCI-CNRS UMR 8213, 10 rue Vauquelin, 75231 Paris France

18:30 **Nano-grained thin film TiO2 characterized by ion, X-ray, and electron scattering** **HP6 24**
K. A. Janik 1, B. Seger 2, M. B. Sillassen 3, C. D. Damsgaard 1, I. Chorkendorff 2, J. B. Wagner 1
1 Center for Electron Nanoscopy, Technical University of Denmark, 2800 Kongens Lyngby, Denmark 2 Department of Physics, Technical University of Denmark, 2800 Kongens Lyngby, Denmark 3 Interdisciplinary Nanoscience Center and Department of Physics and Astronomy, Aarhus University, 8000 Aarhus, Denmark

18:30 **Structures and transitions in Vanadium dioxide** **HP6 25**
Kerrie Smith (1), Ana M Sanchez (1), David H Cobden (2) and Richard Beanland (1)
(1) Department of Physics, University of Warwick, Coventry CV4 7AL, UK (2) Department of Physics, University of Washington, Seattle WA98195, USA

18:30 **MARS (Modelling Angle Resolved Spectroscopy), a new software for GIXRF (Grazing Incidence X-ray Fluorescence Analysis) data analysis** **HP6 26**
Lars Luehl 1, Christian Herzog 2, Janis Eilbracht 3, Beatrix Pollakowski 3, Werner Jark 1, Markus Kraemer 4, Burkhard Beckhoff 3, Birgit Kanngiesser 2, Diane Eichert 1,
1 Elettra - Sincrotrone Trieste, Italy; 2 Technische Universitaet Berlin (TUB), Germany; 3 Physikalisch Technische Bundesanstalt (PTB), Germany; 4 AXO DRESDEN, Germany

18:30 **Self-assembled growth of Ni nanoparticles in amorphous alumina matrix** **HP6 27**
M. Jerčinović1, N. Radić1, M. Buljan1, J. Grenzer2, I. Delač Marion3, M. Kralj3, I. Bogdanović Radović1, R. Hübner2, P. Dubček1, K. Salamon3, S. Bernstorff4
1 Ruđer Bošković Institute, Bijenička cesta 54, 10000 Zagreb, Croatia; 2 Helmholtz-Zentrum Dresden-Rossendorf, P O Box 510119, 01314 Dresden, Germany; 3 Institute of Physics, Bijenička cesta 46, 10000 Zagreb, Croatia; 4 Elettra-Sincrotrone, SS 14 km163.5, 34149 Basovizza, Italy

18:30 **Magnetically enhanced batch electrosharpening of tungsten probes** **HP6 28**
Richard Stone, Leon Bowen, Karl Coleman, Mike Petty, Dagou Zeze
Durham University School of Engineering, Department of Physics, Department of Chemistry

18:30 **Laboratory full-field transmission X-ray microscopy and applications** **HP6 29**
C. Seim (1+), H. Legall (1+), A. Dehlinger (1+), H. Stiel (2+), F. Rancan (3), M. Meinke (3), S. Rehbein (4) and B. Kanngießer (1+)
(+) Berlin Laboratory for innovative X-ray technologies (BLiX); (1) Technische Universität Berlin, Institut für Optik und Atomare Physik, Hardenbergstr. 36, 10623 Berlin; (2) Max-Born-Institut, Max-Born-Str. 2A, 12489 Berlin; (3) Charité Berlin, Clinical Research Center for Hair and Skin Science, Charitéplatz 1, 10117 Berlin; (4) Helmholtz-Zentrum für Materialien und Energie, Albert-Einstein-Str. 15, 12489 Berlin

18:30 **Investigating embedded nanosystems with angle resolved fluorescence spectroscopy** **HP6 30**
J. Baumann[1], B. Pollakowski[2], K. Bethke[3], D. Eisenhauer[4], K. Rademann[3], B. Beckhoff[2], and B. Kanngießer[1]
[1] Institute for Optics and Atomic Physics, Technical University of Berlin, 10623 Berlin, Germany; [2] Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany; [3] Institute of Chemistry, Humboldt Universität zu Berlin, Brook-Taylor-Strasse 2, D-12489 Berlin, Germany; [4] Helmholtz-Zentrum Berlin für Materialien und Energie, Institut für Silizium-Photovoltaik, Kekuléstraße 5, 12489 Berlin, Germany

18:30 **Characterization of ceria nanoparticles through advanced modelling** **HP6 31**
Kersti Hermansson, jolla Kullgren, Adri van Duin, Peter Broqvist
Department of Chemistry, Ångström Laboratory, Uppsala University; BCCMS, University of Bremen; Mechanical and Nuclear Engineering, Pennsylvania State University; Department of Chemistry, Ångström Laboratory, Uppsala University

18:30 **Ccmparative studies of isomerization reactions of undoped polyacetylene(PA) by 'R.M.N 13C – F.T.I.R – RAMAN et D.S.C '** **HP6 32**
Z. Skanderi1*, F. Mechachti1, S. Bitam2, A. Djebaili1
1 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria 2 Laboratory of Physical chemistry- University of Media- Algeria

18:30 **Characterization at the nano-scale with Small Angle X-Ray Scattering** **HP6 33**
Sergio Rodrigues, Sandra Desvergne-Blenau, Frédéric Bossan, Manuel Fernandez-Martinez, Blandine Lantz, Ronan Mahe, Pierre Panine, Peter Høghøj, Xenocs SA, Sassenage, France

18:30 **Molecular level investigation of chain conformation for contact printed poly(dimethylsiloxane) by surface sensitive nonlinear optical measurement** **HP6 34**
Soo Sang Chae, Woo Soon Jang, YOUNG Bum Yoo, Jin Young oh, Jee Ho Park, Keun Ho Lee, Sun Woong Han, Jee Hoon Lee, Kwang Hyun Kim, Hong Koo Baik
Yonsei University, Seoul, Korea

27 May 2014

Characterization of Nano Materials with Advanced X-Ray Technologies 1 : Birgit Kanngiesser and Diane Eichert

08:30 **Nano-scale feature analysis: Achieving high effective lateral resolution with micro-scale material characterization techniques** **H7 1**
T. Conard
IMEC, MCACSA Kapeldreef 75, 3001 Leuven Belgium

09:00 **High-spatial resolution synchrotron X-ray scattering of 3D colloidal nanocrystals assemblies dried on superhydrophobic surfaces** **H7 2**
Angelo Accardo, Francesco Di Stasio, Manfred Burghammer, Christian Riekel, Roman Krahne
Istituto Italiano di Tecnologia, Via Morego 30, 16163, Genova, Italy; European Synchrotron Radiation Facility, B.P. 220, 38043, Grenoble, France

09:15 **Surface and sub-surface thermal oxidation of Ru and O diffusion in RuO2 thin films** **H7 3**
R. Coloma Ribera, R. W. E. van de Kruijs, S. Kokke, E. Zoethout, A. E. Yakshin, F. Bijkerk
FOM Dutch Institute for Fundamental Energy Research (DIFFER), P.O. Box 1207, 3430 BE Nieuwegein, The Netherlands. MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands; FOM Dutch Institute for Fundamental Energy Research (DIFFER), P.O. Box 1207, 3430 BE Nieuwegein, The Netherlands. MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands; FOM Dutch Institute for Fundamental Energy Research (DIFFER), P.O. Box 1207, 3430 BE Nieuwegein, The Netherlands; FOM Dutch Institute for Fundamental Energy Research (DIFFER), P.O. Box 1207, 3430 BE Nieuwegein, The Netherlands; FOM Dutch Institute for Fundamental Energy Research (DIFFER), P.O. Box 1207, 3430 BE Nieuwegein, The Netherlands. MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands; FOM Dutch Institute for Fundamental Energy Research (DIFFER), P.O. Box 1207, 3430 BE Nieuwegein, The Netherlands. MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands;

09:30 **Reference-free, depth dependent characterization of nanoscaled systems with advanced grazing incidence X-ray fluorescence analysis** **H7 4**
Philipp Hönicke, Matthias Müller, Burkhard Beckhoff
Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany

09:45 **In-situ SAXS study of phase segregation in thermoplastic eleastomers** **H7 5**
H. Hristov1, O. Thomas1, B. Hsiao2
1-Kimberly Clark Corporation 2-SUNY Stony Brook

10:00 **Coffee break**

Characterization of Nano Materials with Advanced X-Ray Technologies 2 : Gerhard Ulm and Blanka Detlefs

10:30 **Characterization of Ni rods arrays distributed in SiO2 matrix by means of synchrotron radiation spectroscopic and microscopic techniques** **H8 1**
E.V. Parinova 1, S.Yu. Turishchev 1, R. Ovsyannikov 2, F. Kronast 2, D.E. Spirin 1, D.A. Koyuda 1, D.N. Nesterov 1, A.V. Mazanik 3, E.A. Streltsov 3, N.V. Malaschenok 3, A.K. Fedotov 3
1 - Voronezh State University, Universitetskaya pl. 1, 394006, Voronezh, Russia. 2 - Helmholtz-Zentrum Berlin, Albert-Einstein-Str. 15, 12489, Berlin, Germany. 3 - Belarusian State University, pr. Nezavisimosti 4, 220030, Minsk, Belarus.

10:45 **Focused X-ray Diffraction measurements combined X-ray Emission Optical Light Spectroscopy on membrane structures** **H8 2**
Grifone R. * 1, Kriegner D. 1 , Martin Sanchez J. 1, Trotta R. 1, Rastelli A. 1, Stangl J. 1 , Schülli T. *
* European Synchrotron Radiation Facility, 6 rue Jules Horowitz, BP 220, 38043 Grenoble, France; 1 Institute of Semiconductor and Solid State Physics, JKU Linz, Altenbergerstr. 69, 4040 Linz, Austria

11:00 **The X-Ray Fluorescence beamline at elettra: opening new opportunities for characterization of nanomaterials** H8 3

Diane Eichert, Werner Jark, Lars Luehl, Alessandro Gambitta, Andreas Germanos Karydas, Alessandro Migliori, Juan Jose Leani, Mladen Bogovac, Halim Sghaier, Ralf Bernd Kaiser

Diane Eichert - X-Ray Fluorescence Beamline - ELETTRA - Sincrotrone Trieste, Area Science Park, 34149 Basovizza, Trieste, Italy; Werner Jark -X-Ray Fluorescence Beamline - ELETTRA - Sincrotrone Trieste, Area Science Park, 34149 Basovizza, Trieste, Italy; Lars Luehl - X-Ray Fluorescence Beamline - ELETTRA - Sincrotrone Trieste, Area Science Park, 34149 Basovizza, Trieste, Italy; Alessandro Gambitta - X-Ray Fluorescence Beamline - ELETTRA - Sincrotrone Trieste, Area Science Park, 34149 Basovizza, Trieste, Italy; Andreas Germanos Karydas - International Atomic Energy Agency, Nuclear Science and Instrumentation Laboratory, Seibersdorf, Austria; Alessandro Migliori - International Atomic Energy Agency, Nuclear Science and Instrumentation Laboratory, Seibersdorf, Austria; Juan Jose Leani - International Atomic Energy Agency, Nuclear Science and Instrumentation Laboratory, Seibersdorf, Austria; Mladen Bogovac - International Atomic Energy Agency, Nuclear Science and Instrumentation Laboratory, Seibersdorf, Austria; Halim Sghaier - International Atomic Energy Agency, Nuclear Science and Instrumentation Laboratory, Seibersdorf, Austria; Ralf Bernd Kaiser - International Atomic Energy Agency, Nuclear Science and Instrumentation Laboratory, Seibersdorf, Austria

11:15 **Advanced structural characterisation of micro- and nano-electronics using neutrons and synchrotron X-rays** H8 4

E.Capria 1, J.Beaucour 2, R.Kluender 3, E.Mitchell 1, J.C.Royer 3, J.Segura-Ruiz 2

1 European Synchrotron Radiation Facility - Grenoble (France), 2 Institut Laue Langevin - Grenoble (France), 3 LETI - Grenoble (France).

Innovative Ion Beam Surface Analysis : Thierry Conard and Bonnie Tyler

11:30 **Characterizations of the oxide semiconductor and OLED materials using combination of surface analysis methods** H9 1

Jae Cheol Lee, Dong Jin Yun, Jae Gwan Chung, Eun Ha Lee, Yong Koo Kyoung, Sung Heo, Gyeong-Su Park

Analytical Engineering Group, Platform Technology Lab, Samsung Advanced Institute of Technology, Samsung Electronics Co Ltd

12:00 **Ultralow energy SIMS depth profiling of patterned III-V heterostructures** H9 2

V. Gorbenko(1,2), F. Bassani(2), T. Baron(2), R. Cipro(2), M. Martin(2) , A. Grenier(1) , Y. Bogumilowicz(1), G. Audoit(1), X.Y. Bao(3), Z. Ye(3), JB. Pin(3), E. Sanchez(3), J.-P. Barnes(1)

(1) CEA, LETI, MINATEC Campus, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France; (2) LTM/CNRS, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France; (3) AMAT, 3050 Bowers Avenue, Santa Clara, CA 95054, USA;

12:15 **Correlative microscopy using SIMS for high-sensitivity high-resolution elemental mapping** H9 3

T. Wirtz, D. Dowsett, S. Eswara, Y. Fleming, P. Philipp

Department “Science and Analysis of Materials” (SAM), Centre de Recherche Public – Gabriel Lippmann, 41 rue du Brill, L-4422 Belvaux, Luxembourg

12:30 **Laterally resolved analyses of thin film electrodes by complimentary ion beam surface analysis techniques** H9 4

John Druce, Helena Tellez, Young-Wan Ju, John Kilner, Tatsumi Ishihara

wpi-I2CNER, Kyushu University, Fukuoka, JAPAN, 819-0395; wpi-I2CNER, Kyushu University, Fukuoka, JAPAN, 819-0395; wpi-I2CNER, Kyushu University, Fukuoka, JAPAN, 819-0395; wpi-I2CNER, Kyushu University, Fukuoka, JAPAN, 819-0395 and Department of Materials, Imperial College London, London UK, SW7 2BP; wpi-I2CNER, Kyushu University, Fukuoka, JAPAN, 819-0395;

12:45 **Lunch break**

Advances in thermal characterisation of thin films and nanomaterials : Bruno Hay and Petr Klapetek

14:15 **Thermal nanometrology and scanning thermal microscopy** H10 1

S. Gomés, S. Lefévre, P.-O. Chapuis

Université de Lyon, CNRS INSA-Lyon, CETHIL, UMR5008, F- 69621, Villeurbanne, France Université Lyon 1, CETHIL, UMR5008, F-69621 Villeurbanne cedex, France

14:45 **Microsecond-pulse heating nanocalorimetry: quasi-static method** H10 2

A.F. Lopeandia#&; M. Molina-Ruiz#; G.García#; O.Bourgeouis&; J.Rodriguez-Viejo#;

Departament de Física, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain. & Institut NEEL CNRS/UJF, 38042 Grenoble cedex 9, France

15:00 **A novel high resolution contactless technique for thermal field mapping and thermal conductivity determination: Two-Laser Raman Thermometry** H10 3

J. S. Reparaz, E. Chavez-Angel, M. R. Wagner, B. Graczykowski, J. Gomis-Bresco, F. Alzina, and C. M. Sotomayor Torres

J. S. Reparaz^{1}; E. Chavez-Angel^{1,2}; M. R. Wagner^{1}; B. Graczykowski^{1}; J. Gomis-Bresco^{1}; F. Alzina^{1}; and C. M. Sotomayor Torres^{1,3} ^{1} - ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain ^{2} - Dept. of Physics, UAB, 08193 Bellaterra (Barcelona), Spain ^{3} - ICREA, Passeig Lluí s Companys 23, 08010 Barcelona, Spain

15:15 **Measurements of thermal conductivity of phase-change chalcogenide thin films at high temperature by modulated photothermal radiometry** H10 4

Nolwenn Fleurence, Bruno Hay, Guillaume Davée, Andréa Cappella

Laboratoire national de métrologie et d’essais

15:30 **Coffee break**

Latest Progress of Thin Film Characterization : Emmanuel Nolot, Uwe Beck and Carla Vogt

16:00 **Polarization dependent measurements of nanostructured surfaces** H11 1

Poul-Erik Hansen and Morten Hannibal Madsen

DFM A/S, Danish National Metrology Institute, Matematiktorvet 307, 2800 Kgs. Lyngby, Denmark

16:30 **Epitaxial ferromagnetic MnSb on GaAs, InGaAs and Ge substrates: polymorphism and unconventional early stage growth** H11 2

C. W. Burrows, T. P. A. Hase, J. Aldous, S. Hatfield, M. J. Ashwin, G. R. Bell

University of Warwick

16:45 **Direct evidence of Tungsten clustering in W0.02V0.98O2 thin films and its effect on the metal-to-insulator transition** H11 3

Xiaoyan Li 1,2, Alexandre Gloter 2, Alberto Zobelli 2, Hui Gu 1, Xun Cao 1, Ping Jin 1, Christian Colliex 2

1 State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai 200050, China ; 2 Laboratoire de Physique des Solides, CNRS UMR 8502, Université Paris Sud 11, Orsay 91405, France

17:00 **3D determination of facets of nanoparticles by transimission electron microscopy** H11 4

Zhanbing He

State Key Laboratory for Advanced Metals and Materials University of Science and Technology Beijing No. 30 Xueyuan Road, Haidian District Beijing 100083, China

17:15 **Real time observation of metal oxide nanowire transformation through cationic exchange for RRAM application** H11 5

Chun-Wei Huang1, Jui-Yuan Chen1, Chung-Hua Chiu1,Cheng-Lun Hsin2,Wen-Wei Wu1

1 Department of Materials Science and Engineering, National Chiao Tung University, No. 1001, University Rd, East Dist., Hsinchu City, 300, Taiwan; 2 Department of Electrical Engineering, National Central University, Taoyuan, 320, Taiwan;

17:30 **Properties of Pt/Pb(Zr0.5Ti0.5)O3 interfaces** H11 6

Anna V. Kimmel†,‡, Markys G. Cain‡

‡ National Physical Laboratory, Teddington, TW11 0LW, UK. † University College London, Gower Street, London, UK WC1E 6BT, UK.

17:45 **Local electronic structures and the polarity dependent measurement of ZnO nanorods growth on GaN substrate** H11 7
Yen-Ju Wu, Cheng-Yi Liu
Department of Chemical and Materials Engineering National Central University, Jhongli, Taiwan

18:00 **The effect of mutual order of B-cations on electronic and optical properties of strained Pb(ZrxTi1-x)O3** H11 8
Alex Bogdanov1,2, Anna V. Kimmel3
1 A.P. Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia; 2 Irkutsk State Technical University, Irkutsk, Russia; 3 National Physical Laboratory, UK

18:15 **Temperature and frequency dependence of electric field induced phase transitions in PMN-xPT** H11 9
J. Wooldridge, M. Stewart, C. Vecchini, M. G. Cain, M. Gutmann, M. Reece
National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, UK;1National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, UK;1National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, UK;1National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, UK;ISIS Facility, Rutherford Appleton Laboratory, Didcot, Oxon OX11 0QX, UK;Materials Department, Queen Mary, University of London, Mile End Road, London E1 4NS, UK

Poster session 2 - Analytical Techniques for Nanomaterials : Claudia Fleischmann, Bernd Kolbesen, Petr Klapetek, Peter Petrik, Luca Boarino and Omar El Gawhary

18:30 **Reliable tip-enhanced Raman imaging of nanomaterials** HP12 1
Emmanuel Leroy, Renata Lewandowska, Ophelie Lancry, Andrey Krayev, Sergey Saunin
HORIBA Scientific, HORIBA Scientific, HORIBA Scientific, AIST-NT, AIST-NT

18:30 **Effect of Cr doping on the structural, magnetic and magnetocaloric effect of La0.7Ca0.2Sr0.1 Mn1-xCrxO3 polycrystalline** HP12 2
Ah.Dhahri. E.Dhahri and E. K. Hlil
Ah Dhahri, E Dhahri : Applied Physics Lab, Faculty of Sciences Sfax, BP 1171, University of Sfax, 3000, Tunisia. E K Hlil : Institut Néel, CNRS, MCBT Department, BP 166, 38042 Grenoble Cedex 9, France

18:30 **Ultra fast depth profile analysis of nanostructured materials by plasma profiling Time of Flight Mass Spectrometry** HP12 3
Agnès Tempez,Emmanuel Nolot,Sébastien Legendre,Jean-Paul Barnes,Fabrice Nemouchi, Cécile Maunoury
Horiba Jobin Yvon, CEA LETI

18:30 **High accuracy elemental composition in 3D by MeV ion beam analysis (IBA)** HP12 4
J.L.Colaux, C.Jeynes
University of Surrey Ion Beam Centre, Guildford, England

18:30 **Combined SIMS-SPM instrument for high sensitivity and high resolution elemental 3D analysis** HP12 5
Y. Fleming, T. Wirtz
Department “Science and Analysis of Materials” (SAM), Centre de Recherche Public – Gabriel Lippmann, 41 rue du Brill, L-4422 Belvaux, Luxembourg

18:30 **Towards SIMS on the Helium Ion Microscope: detection limits and experimental results on the ORION** HP12 6
D. Dowsett, P. Philipp, T. Wirtz, S. Sijbrandij, J. Notte
CRP - Gabriel Lippmann, 41 rue du Brill, L-4422 Belvaux, Luxembourg; CRP - Gabriel Lippmann, 41 rue du Brill, L-4422 Belvaux, Luxembourg;CRP - Gabriel Lippmann, 41 rue du Brill, L-4422 Belvaux, Luxembourg; Carl Zeiss NTS LLC, One Corporation Way, Peabody, MA, 01960; Carl Zeiss NTS LLC, One Corporation Way, Peabody, MA, 01960

18:30 **A systematic study of Ga+ implantation in a PZT film during Focused Ion Beam micro-machining** HP12 7
Nicole Wollschläger, Werner Österle, and Mark Stewart
Nicole Wollschläger, Werner Österle: BAM Federal Institute for Materials Research and Testing, Berlin, Germany; Mark Stewart: NPL National Physical Laboratory, Teddington, UK

18:30 **Reliable Raman Spectrometry** HP12 8
S. Zakel, S. Wundrack, C. Frank, P. Hinze, T. Weimann, T. Dziomba, B. Güttler, R. Stosch
Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

18:30 **Characterization and simulation of optical absorption in Si nanocrystals** HP12 9
Xuguang Jia, Lingfeng Wu, Ziyun Lin, Tian Zhang, Terry Yang, Binesh Puthen-Veettil,Ivan Perez-Wurfl,Gavin Conibeer
School of Photovoltaic and Renewable Energy Engineering, University of New South Wales, Sydney

18:30 **Ellipsometric measurements on monolayers of nanoparticles and other model systems for nanostructured optoelectronic systems** HP12 10
Andreas Hertwig, Dana Rosu, Uwe Beck, Luca Croin, Giulia Aprile, Luca Boarino
BAM - Federal Institute for Materials Research, Germany; BAM - Federal Institute for Materials Research, Germany; BAM - Federal Institute for Materials Research, Germany; INRIM - Istituto Nazionale di Ricerca Metrologica, Italy; INRIM - Istituto Nazionale di Ricerca Metrologica, Italy; INRIM - Istituto Nazionale di Ricerca Metrologica, Italy

18:30 **Fast and robust characterization of polymers with a nano-textured surface** HP12 11
Morten Hannibal Madsen, Poul-Erik Hansen, Maksim Zalkovski, Nikolaj Feidenhans'l, Jørgen Garnæs
DFM A/S, Danish National Metrology Institute, Matematiktorvet 307, 2800 Kgs. Lyngby, Denmark; DFM A/S, Danish National Metrology Institute, Matematiktorvet 307, 2800 Kgs. Lyngby, Denmark; NIL Technology ApS, Diplomvej 381, 2800 Lyngby, Denmark; DFM A/S, Danish National Metrology Institute, Matematiktorvet 307, 2800 Kgs. Lyngby, Denmark; DFM A/S, Danish National Metrology Institute, Matematiktorvet 307, 2800 Kgs. Lyngby, Denmark

18:30 **Combined XPS- and XRF-surface analysis in one instrument** HP12 12
Erik Darlatt, Michael Kolbe, Rolf Fliegauf, Philipp Hönicke, Ina Holfelder
all Authors: PTB – Physikalisch-Technische Bundesanstalt, Abbestraße 2 – 12, 10587 Berlin, Germany

18:30 **Applying Gold nanoparticle decorating silicon nanostructure for high sensitivity Surface Enhanced Raman Scattering substrate** HP12 13
Bi-Shen Lee, Ding-Zheng Lin, Ta-Jen Yen
National Tsing Hua University, Guangfu Rd.Sec.2 No. 101,Hsinchu, Taiwan

18:30 **Microscopy with nanoscale resolution studied by high-resolution RBS and micro-PIXE** HP12 14
Lagutin A.
Belarusian State Agrarian Technical University, Physics, Nezavisimosti Av., 220023, Minsk, Belarus

18:30 **Study on unique electronic properties of Pt@Ag core@shell nanoparticles via X-ray Photoelectron Spectroscopy** HP12 15
Anh T.N. Dao, Derrick M. Mott, Shinya Maenosono
School of Materials Science, Japan Advanced Institute of Science and Technology

18:30 **X-ray focusing and imaging with multilayer Laue lenses** HP12 16
A. Kubec1;2, S. Niese3;4, S. Braun1, K. Melzer1;2 , P. Krüger4, J. Patommel5 and A. Leson1
1 Fraunhofer Institute for Material and Beam Technology, 01277 Dresden, Germany 2 Institute for Materials Science and Max Bergmann Center of Biomaterials, Technische Universität Dresden, 01062 Dresden, Germany 3 Dresden Center for Nanoanalysis, Technische Universität Dresden, 01187 Dresden, Germany 4 Fraunhofer Institute for Ceramic Technologies and Systems IKTS Materials Diagnostics Branch, 01109 Dresden, Germany 5 Institute of Structural Physics, Technische Universität Dresden, 01069 Dresden, Germany

18:30 **Focusing of soft X-ray radiation with a single bounce monocapillary enabling X-ray emission spectrometry of nanoscaled materials** HP12 17
R. Unterumsberger*1, M. Müller1 and B. Beckhoff1
1 Physikalisch-Technische Bundesanstalt, Abbestrasse 2-12, 10587 Berlin, Germany

18:30 **Combination TOF-SIMS and SFM measurements for characterization of inorganic and organic surfaces** **HP12 18**
Adam Sears, Rudolf Moellers, Felix Kollmer, Ewald Niehuis
Laetita Bernard; Hans Josef Hug; Sasa Vranjkovic; Tim Ashworth; Raphaelle Dianoux; Adi Scheidemann;

18:30 **Topography artifacts compensation in scanning thermal microscopy on rough surfaces** **HP12 19**
J. Martinek, P. Klapetek, A. Campbellová, M. Valtr, R. Cimrman
Czech Metrology Institute, Okruzni 31, 638 00 Brno, Department of Physics, Faculty of Civil Engineering, BUT, Zizkova 17, Brno, 602 00, Czech Republic; Czech Metrology Institute, Okruzni 31, 638 00 Brno; Czech Metrology Institute, Okruzni 31, 638 00 Brno; Czech Metrology Institute, Okruzni 31, 638 00 Brno; New Technologies Research Centre, University of West Bohemia, Univerzitni 8, 306 14 Plzen, Czech Republic

18:30 **Design of a large scale digital imaging spectrophotometer** **HP12 20**
Miroslav Valtr1, David Nečas2, Petr Klapetek1
1 Department of Nanometrology, Czech Metrology Institute, Okružní 31, 638 00 Brno, Czech Republic; 2 Department of Physical Electronics, Faculty of Science, Masaryk University, Kotlářská 31, 611 37 Brno, Czech Republic

18:30 **Post-growth annealing of GaAs/Ge layers studied by photoreflectance spectroscopy** **HP12 21**
S. Soltani, I. Zaied, Z. Chine, A. Rebey, B. El Jani
Unité de Recherche sur les Hétéroépitaxies et Applications, Faculté des Sciences de Monastir, 5019 Monastir, Tunisie

18:30 **On the metrology of amorphous transparent oxides by spectrometry techniques** **HP12 22**
E. Axente1, J. Hermann2, G. Socol1, A. C. Galca3, D. Pantelica4, P. Ionescu4 and V. Craciun1*
1Laser-Surface-Plasma Interactions Laboratory, Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, RO - 077125, Măgurele-Bucharest, Romania 2LP3, CNRS - Aix-Marseille University, Luminy, Marseille, France 3Laboratory of Multifunctional Materials and Structures, National Institute of Materials Physics, RO - 077125, Măgurele-Bucharest, Romania 4 National Institute of Physics and Nuclear Engineering Horia Hulubei, RO - 077125, Măgurele-Bucharest, Romania

18:30 **Synchrotron Radiation - based FIR/THz spectroscopy for studying membrane-targeting interactions of signal peptides** **HP12 23**
Andrea Hornemann, Arne Hoehl, Michael Andersch, Michael Vollmer, Gerhard Ulm, Burkhard Beckhoff
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany; Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany; University of Applied Sciences in Brandenburg, Magdeburger Str. 50, 14770 Brandenburg, Germany; University of Applied Sciences in Brandenburg, Magdeburger Str. 50, 14770 Brandenburg, Germany; Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany; Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany;

18:30 **Accurate measurement of segregation to grain boundaries or planar faults by analytical transmission electron microscopy** **HP12 24**
T. Walther 1, M. Hopkinson 1, N. Daneu 2, A. Recnik 2, Y. Ohno 3, K. Inoue 3 and I. Yonenaga 3
1 Dept. Electronic and Electrical Engineering, University of Sheffield, Mappin Building, Mappin Street, Sheffield S1 3JD, UK 2 Department for Nanostructured Materials, Jožef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia 3 Institute for Materials Research, Tohoku University, Katahira 2-1-1, Aoba-ku, Sendai 980-8577, Japan

18:30 **Reference-free total reflection X-ray fluorescence analysis for quantification of functional groups on surfaces for bioanalytical applications** **HP12 25**
C. Streeck 1, A. Nutsch 1, J. Weser 1, T. Fischer 2, P. Dietrich 2, K. Rurack 2, W. Unger 2 and B. Beckhoff 1
1 Physikalisch-Technische Bundesanstalt (PTB), Abbestr.2-12, 10587 Berlin, Germany 2 Bundesanstalt für Materialforschung und -prüfung (BAM), Unter den Eichen 87, 12205 Berlin, Germany

18:30 **An original method for evaluation of the isomeric rate of undoped polyacetylene by multichanel Raman** **HP12 26**
K. BENOUMSAAD1*; ILHEM. R. KRIBA1; A. DJEBAILI2
1 Plasma Laboratory - Faculty of Sciences – Department of Physics- University of Batna- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria,

18:30 **An advanced X-ray Spectrometry facility for Materials Research** **HP12 27**
J.J. Leani(1), B. Beckhoff(2), M. Bogovac(1), D. Eichert(3), R. Fliegauf(2), A. Gambitta(3), D. Grötzsch(4), W. Jark(3), R. B. Kaiser(1), B. Kanngießer(4), A.G. Karydas(1), L. Lühl(3), M. Kiskinova(3), J. Lubeck(2), W. Malzer(4), A. Migliori(1), H. Sghaier(1,5), M. Spanier(4), N. Vakula(1), J. Weser(2)
1)Nuclear Science and Instrumentation Laboratory (NSIL), IAEA Laboratories, A-2444 Seibersdorf, Austria, A.Karydas@iaea.org; 2)Physikalisch-Technische Bundesanstalt (PTB), 10587 Berlin, Germany; 3)Elettra - Sincrotrone Trieste (EST) S.C.p.A., 34149 Basovizza, Trieste, Italy; 4)Technische Universität Berlin (TUB), Institut für Optik und Atomare Physik, 10623 Berlin, Germany; 5)Institut Superieur d'Informatique et de Mathematiques de Monastir (ISIMM), Departement de technologie, 5000, Monastir, Tunisia

18:30 **Sorption capacity of cadmium- and cadmium sulfide containing zeolite thin films : an FTIR study** **HP12 28**
M. Bryckaert(1), I. De Waele(1), S. Thomas(2), S. Mintova(2), V. De Waele(1)
1 -LASIR, UMR8516 CNRS-Universit? de Lille 1, Cit? scientifique, F-59655 Villeneuve d?Ascq, France 2- Laboratoire Catalyse et Spectrochimie, ENSICAEN - Universit? de Caen ? CNRS, 6, Boulevard du Mar?chal Juin, 14050 Caen, France

18:30 **Advanced X-ray spectrometry instrumentation based on synchrotron radiation for nanomaterials characterization and a design study of an analytical platform for 450 mm Si wafer** **HP12 29**
J. Lubeck1, I. Holfelder1, B. Beckhoff1, R. Fliegauf1, P. Hönicke1, M. Müller1, A. Nutsch1, P. Petrik2, F. Reinhardt3, G. Roeder4, B. Pollakowski1, J. Weser1
1 Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany 2 Institute for Technical Physics & Materials Science (MFA), Research Centre for Natural Sciences, Konkoly Thege u. 29-33, 1121 Budapest, Hungary 3 Bruker Nano GmbH, Am Studio 2D, 12489 Berlin, Germany 4 Fraunhofer IISB, Schottkystraße 10, 91058 Erlangen, Germany

18:30 **Analytical calculation and comparison of numerical solutions obtained by the technique of the transfer matrix and FDTD of the transmission and reflection of metamaterials** **HP12 30**
C.Chettah, A.Chaabi
Laboratory of Hyperfrequency and Semi Conductor, Electronics Department, University Constantine 1, Algeria

18:30 **XPS study of oxide surface modification by low-energy ion bombardment** **HP12 31**
Nikolai Alov
Moscow State University, Faculty of Chemistry

18:30 **Rapid thermal annealing effect on the optical properties of Au-doped ZnO thin films grown by rf-sputtering** **HP12 32**
A.G. Rolo (1), C. Kubel (2), M. Buljan (3), S. Bernstorff (4), N. P. Barradas (5), N. Franco (6), and E. Alves (6)
(1) Centro de Física, Universidade do Minho, Campus de Gualtar 4710-057 Braga, Portugal (2) Karlsruher Institut fur Technologie, Institute of Nanotechnology, Eggenstein-Leopoldshafen, Germany; (3) Rudjer Boskovic Institute, Bijenicka cesta 54, 10000 Zagreb, Croatia (4) Elettra-Sincrotrone Trieste, SS 14 km163.5, Basovizza 34149, Italy (5) Centro de Ciências e Tecnologias Nucleares, Instituto Superior Técnico, Universidade de Lisboa, EN10 (km 139,7), 2695-066 Bobadela LSR, Portugal (6) Associação Euratom/IST, Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Universidade de Lisboa, Av. Rovisco Pais, 1049-001, Lisboa, Portugal

18:30 **ARXPS study of vanadium surface oxidation under oxygen ion bombardment** **HP12 33**
Nikolai Alov
Moscow State University, Faculty of Chemistry

18:30 **CASTOR: a new grazing incidence x-ray fluorescence (GIXRF) setup at LNHB** **HP12 34**
Yves Ménesguen, Bruno Boyer & Marie-Christine Lépy
CEA, LIST, Laboratoire National Henri Becquerel (LNE-LNHB), F-91191 Gif-sur-Yvette, France

18:30 **Mapping nanoscale thermal transfer in a liquid environment -immersion scanning thermal microscopy (iSThM)** **HP12 35**
Peter D. Tovee and Oleg V. Kolosov
Physics Department, Lancaster University, Lancaster, LA1 4YB, UK

JOINT SESSION SYMPOSIUM H AND DD: Correlating nanostructure and function in advanced organic electronic devices : Fernando Araujo de Castro

08:30 **Imaging structure/function relationships in nanostructured solar cells** **H13 1**
David S. Ginger
University of Washington

09:00 **Modelling Photoconductive Atomic-Force Microscopy (Pc-AFM)** **H13 2**
James C Blakesley , Fernando Castro, Alina Zoladek-Lemanczyk, Stephen Giblin, Alan Turnbull
National Physical Laboratory, Teddington, TW11 0LW, United Kingdom

09:15 **Thermal degradation study of P3HT:PCBM solar cells using SPM techniques** **H13 3**
Ravi C Chintala, Jeffry G Tait, Pierre Eyben, Eszter voroshazi and Wilfried Vandervorst
IMEC, Kapeldreef 75, B-3001, Leuven , Belgium ; KU Leuven, Department of Physics and Astronomy (IKS), Celestijnenlaan 200D, 3001 Leuven, Belgium ; KU Leuven, ESAT, Kasteelpark Arenberg 10, B-3001, Leuven, Belgium

09:30 **Controlling bulk heterojunction photovoltaic morphology: The importance of solution phase aggregation** **H13 4**
Christopher J. Tassone, Kristin Schmidt, Jonathan Bartelt, Alan Yiu, Jeremy Niskala, Pierre Beaujuge, Jean M. Frechet, Michael McGehee, Michael F. Toney
Stanford Synchrotron Radiation Lightsource; Stanford Synchrotron Radiation Lightsource; Stanford University; UC Berkeley; UC Berkeley; King Abdullah University of Science and Technology; King Abdullah University of Science and Technology; Stanford University; Stanford Synchrotron Radiation Lightsource

09:45 **Investigation of polymer organization for organic electronic devices using Langmuir-Blodgett methods** **H13 5**
Mariane Ouattara, Josée Brisson, Mario Leclerc
Université Laval, 1045 avenue de la medecine G1V0A6, Quebec, Canada

10:00 **Coffee break**

Advances in scanning probe microscopy : Ludger Koenders and Miroslav Valtr

10:30 **Nanoscale interfacial interactions of graphene with polar and non-polar liquids** **H14 1**
Benjamin J. Robinson, Nicholas D. Kay, Oleg V. Kolosov
Physics Department, Lancaster University, Lancaster, LA1 4YB, UK

10:45 **Fragmentation and exfoliation of low-dimensional materials; a statistical approach.** **H14 2**
Konstantinos Kouroupis-Agalou1, Andrea Liscio1, Emanuele Treossi,1,2 Luca Ortolani3, Vittorio Morandi3, Nicola Maria Pugno4, Vincenzo Palermo1,2*
1 Istituto per la Sintesi Organica e la Fotoreattività-Consiglio Nazionale delle Ricerche (ISOF-CNR), via Gobetti 101, 40129 Bologna, Italy.; 2Laboratorio MIST.E-R Bologna, via Gobetti 101, 40129 Bologna (Italy); 3 Istituto per la Microelettronica e Microsistemi-Consiglio Nazionale delle Ricerche (IMM-CNR), via Gobetti 101, 40129 Bologna, Italy.; 4 Dipartimento di Ingegneria Civile, Ambientale e Meccanica, Università di Trento, via Mesiano, 77 I-38123 Trento (Italia);

11:00 **Conductive and Photoconductive Atomic Force Microscopy parametric investigation of organic electronic ultra-thin films** **H14 3**
Achilleas Sesis1, David Cheyns2, David. C. Cox1,3, Emmanuele Enrico4, Federico F. Lupi5, Luca Boarino4, Fernando A. de Castro*1
1. National Physical Laboratory, Hampton Rd,Teddington, Middlesex, TW11 0LW,U.K. 2. IMEC, Kapeldreef 75, B-3001, Leuven, Belgium 3 Advanced Technology Institute, University of Surrey, Guildford, Surrey, GU2 7XH, U.K. 4 Laboratorio MDM, IMM-CNR, Via C. Olivetti 2, 20846, Agrate Brianza (MB), Italy 5. NanoFacility Piemonte, Electromagnetism Division, Istituto Nazionale di Ricerca Metrologica, Strada delle Cacce 91 - 10135, Torino, Italy

11:15 **FDTD modeling of photoconductive AFM experiments** **H14 4**
Petr Klapetek, Miroslav Valtr
Czech Metrology Institute, Okuzni 31, 638 00 Brno, Czech Republic

11:30 **Mechanical properties of polystyrene nanoparticles** H14 5
Joergen Garnaes
DFM - Danish Fundamental Metrology, Matematiktorvet 307, DK-2800 Lyngby, Denmark

11:45 **Comparison of spherical nanoparticles size measurements by AFM and SEM** H14 6
Alexandra DELVALLEE, Nicolas FELTIN, S?bastien DUCOURTIEUX
Laboratoire National de m?trologie et d?Essais ? LNE, 29 avenue Roger Hennequin, 78197 Trappes Cedex

12:00 **Quantitative morphology characterization of PC-siloxane copolymer blends at nanometer scale** H14 7
Dr. Lanti Yang, Dr. Robert van de Grampel, Dr. Olivier Guise
SABIC Technology & Innovation (T&I)

12:15 **The cone embedded multi-ring grooves structure for Tip Enhanced Raman Spectroscopy** H14 8
Ruei Han Jiang, Ryan Chu,Ta-Jen Yen
National Tsing Hua University, Guangfu Rd.Sec.2 No. 101, Hsinchu, Taiwan

12:30 **Lunch break**

Traceability in Nano Metrology: Reference Samples and Calibration : Marie-Christine Lépy and Sabine Zakel

14:00 **Dimensional metrology at nanoscale for surface topography and analysis** H15 1
L. Koenders, U. Brand, I. Busch, T. Dziomba
Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

14:30 **Towards a standardised metrology for multi-scale characterisation of nanostructured durable hydrophobic coatings.** H15 2
Damaso M De Bono, Geraldine Durand, Alan Taylor
TWI Ltd., Cambridge, Great Abington, CB21 6AL, UK.

14:45 **Thin film reference samples for (sub-)ng quantification in XRF and TXRF analysis** H15 3
Markus Krämer1, Burkhard Beckhoff2, Reiner Dietsch1, Gerald Falkenberg3, Ursula Fittschen4, Thomas Holz1, Philipp Hönicke2, Matthias Müller2, Daniela Rogler1, Rolf Simon5, Danny Weißbach1
1 AXO DRESDEN GmbH, Winterbergstr. 28, 01277 Dresden, Germany (markus.kraemer@axo-dresden.de); 2 Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany; 3 HASYLAB at DESY, Notkestr. 85, 22603 Hamburg, Germany; 4 Institute for Applied Chemistry, Univ. of Hamburg, Martin-Luther-King-Platz 6, 20146 Hamburg, Germany; 5 Institute for Synchrotron Radiation, KIT, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein, Germany

15:00 **Selection and characterization of candidate reference materials for nanoparticle shape analysis** H15 4
Tsvetelina Gerganova a, Gert Roebben a, Vikram Kestens a, Yannic Ramaye a, Thomas Linsinger a, Andrea Held a, Eveline Veleysen b, Jan Mast b, Hendrik Emons a
a) European Commission, Joint Research Centre, Institute for Reference Materials and Measurements (IRMM), Retieseweg 111, 2440 Geel, Belgium b) Veterinary and Agrochemical Research Centre (CODA-CERVA), Service Electron Microscopy, Groeselenberg 99, 1180 Brussels, Belgium

15:15 **Measurement of fundamental parameters for characterization of nanomaterials** H15 5
Yves Ménesguen, Bruno Boyer & Marie-Christine Lépy
CEA, LIST, Laboratoire National Henri Becquerel (LNE-LNHB), F-91191 Gif-sur-Yvette, France

15:30 **Spectroelectrochemistry of plasmonic nanoparticles** H15 6
Christy F. Landes
Rice University Department of Chemistry, Houston TX 77005 USA

15:45 **Anti-site defects and self-doping in spinel oxide thin films: quantification by resonant X-ray diffraction and X-ray spectroscopy** H15 7
Yezhou Shi, Paul F. Ndione, Linda Y. Lim, Dimosthenis Sokaras, Tsu-Chien Weng, Arpun R. Nagaraja, Andreas G. Karydas, John D. Perkins, Thomas O. Mason, David S. Ginley, and Michael F. Toney
1. SLAC National Accelerator Laboratory, Menlo Park, CA 94025 (USA) 2. National Renewable Energy Laboratory, Golden, CO 80401 (USA) 3. Northwestern University, Evanston, IL 60208 (USA) 4. NCSR Demokritos, Institute of Nuclear Physics,GR-15310, Athens (Greece) 5. Nuclear Spectrometry and Applications Laboratory, IAEA Laboratories, Austria A-2444 Seibersdorf (Austria)

16:00 **PLENARY SESSION**

Characterization of Nano Materials with Advanced X-Ray Technologies 3 : Wolfgang Malzer and Emmanuel Nolot

09:00 **Influence of annealing conditions on the structural and photoluminescence properties of Ge quantum dot lattices in continuous Ge + Al2O3 films** H16 1
M. Buljan1, N. Radić1, I. Bogdanović-Radović1, Z. Siketić1, K. Salamon2, M. Jerčinović1, M. Ivanda1, G. Dražić3, S. Bernstorff4
1 Ruđer Bošković Institute, Bijenička c. 54, 10000 Zagreb, Croatia; 2 Institute of Physics, Bijenička cesta 46 ,10000 Zagreb, Croatia; 3 Jožef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia; 4 Elettra-Sincrotrone Trieste, 34149 Basovizza, Italy

09:15 **X-RAY Photoelectron Spectroscopy as a tool for investigating energy band alignment at semiconductor interfaces - applied TO Cu2O/ZnO AND Hg-Cd-Te structures** H16 2
I.J.T. Jensen, M.F. Sunding, E. Flage-Larsen, Ø. Prytz and S. Diplas
SINTEF Materials and chemistry; SINTEF Materials and chemistry; SINTEF Materials and chemistry, University of Oslo; University of Oslo; SINTEF Materials and chemistry, University of Oslo

09:30 **Characterization of luminescent multilayered nanoperiodical structures containing Si nanocrystals by means of synchrotron X-ray absorption technique** H16 3
D.A. Koyuda *, S.Yu. Turishchev *, V.A. Terekhov*, E.V. Parinova *, D.E. Spirin *, D.N. Nesterov*, A.V. Ershov **, D.A. Grachev **, A.I. Mashin **, E.P. Domashevskaya *
* - Voronezh State University, Universitetskaya pl.1, 394006, Voronezh, Russia.
** - Lobachevsky State University of Nizhni Novgorod, pr. Gagarina 23, 603950, Nizhni Novgorod, Russia.

09:45 **Coffee break**

Joint session with symposium A - Metrology in solar cells and Highlights of EMRP projects : Daniel Abou-Ras and Burkhard Beckhoff

10:15 **Diffusion of buffer-layer and substrate impurities in solar-grade CIGSe and epitaxial CISe layers** H17 1
N. Stolwijk1, J. Bastek1, R. Wuerz2, S. Sadewasser3
1Universitaet Muenster, Institut fuer Materialphysik, 48149 Muenster, 2Zentrum fuer Sonnenenergie- und Wasserstoff-Forschung Baden-Wuerttemberg, 70565 Stuttgart, 3International Iberian Nanotechnology Laboratory, 4715-330 Braga, Portugal

10:30 **The role of Ga content in CIGSe efficiency : an atom probe study** H17 2
Mohit Raghuwanshi, Emmanuel Cadel, Sébastien Duguay, Philippe Pareige, Nicolas Barreau
Groupe de Physique des Matériaux (GPM), University of Rouen; University of Nantes

10:45 **Strain measurements in CuInSe2 absorber layers by several diffraction techniques** H17 3
Norbert Schäfer1, Daniel Abou-Ras1, Manuela Klaus1, Christoph Genzel1, Julien Marquart1,2, Susan Schorr1,2, Thorsten Rissom1, Angus Wilkinson3, Tobias Schulli4
1. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany; 2. Freie Universitaet Berlin, Institute of Geological Sciences, Malteserstr. 74-100, 12249 Berlin, Germany; 3. Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, U.K.; 4. European Synchrotron Radiation Facility, BP 220, Grenoble Cedex, France

11:00 **EMRP - Thin Films - Project: Traceable Raman mappings on solar cell thin-film materials** H17 4
S. Zakel, S. Wundrack, B. Güttler, R. Stosch
Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

11:15 **EMRP - Thin Films - Project: Reference-free quantification of in-depth matrix gradients – the uncertainty dependencies of the effective solid angle of detection** H17 5
C. Streeck 1, C. Herzog 2, B. Kanngießer 2, B. Beckhoff 1
1 Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin 2 Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin

11:30 **5 minutes for transfer from symposium A lecture hall to symposium H lecture hall**

Highlights of European Metrology Research Programme (EMRP) Projects 2 : Andreas Hertwig and Beatrix Pollakowski

11:35 **EMRP - Thin Films - Project: Development of a facility for thermal conductivity measurement by modulated photothermal radiometry** H18 1
Bruno Hay, Nolwenn Fleurence, Guillaume Davée
Laboratoire national de métrologie et d'essais (LNE) Photonic-Energetics Division Centre for Scientific and Industrial Metrology 29, avenue Roger Hennequin 78197 Trappes cedex

11:50 **EMRP - Thin Films - Project: Optical characterization of non-ideal samples** H18 2
D.M. Rosu1, A. Hertwig1, P. Petrik2, U. Beck1
1BAM -Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12200 Berlin, Germany; 2Research Centre for Natural Sciences – Institute for Technical Physics and Materials Science, Konkoly Thege Rd. 29-33, 1121 Budapest, Hungary

12:05 **EMRP - Thin Films - Project: Polarization-encoded ellipsometry for large-area samples characterization** H18 3
Richard Koops, Petro Sonin, Omar El Gawhary
VSL, National Metrology Institute in the Netherlands Thijsseweg 11, 2629 JA Delft, the Netherlands

12:20 **EMRP - Thin Films - Project: Characterization of thin films for thickness non-uniformity** H18 4
F. Manoocheri, S. Pourjamal, H. Mäntynen, P. Jaanson, E. Ikonen
Metrology Research Institute, Aalto University, P.O. Box 13000, FI-00076 Aalto, Finland

12:35 **Lunch Break**

Highlights of European Metrology Research (EMRP) Programme Projects 3 : Fernando Araujo de Castro and Wolfgang Unger

14:05 **EMRP - Thin Films - Project: Chemical analysis of nano-scaled materials by x-ray spectrometry under grazing incidence condition** H19 1
R. Unterumsberger1, B. Pollakowski1, Christiane Becker2, Marcel Pagels3, Carolin Zachäus2 , Birgit Kanngießer3, B. Beckhoff1, Bernd Rech2
1 Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany 2 Helmholtz-Zentrum für Materialien und Energie, Institut Silizium Photovoltaik, Kekuléstr. 5, 12489 Berlin, Germany 3 Technische Universität Berlin, Institut für Optik und Atomare Physik, Analytische Röntgenphysik, Hardenbergstr. 36, 10623 Berlin, Germany

14:20 **EMRP - Thin Films - Project: Probing organic semiconductor microstructures by Raman Spectroscopy** H19 2
Dr Ji-Seon Kim
Department of Physics & Centre for Plastic Electronics, Imperial College London, UK

14:35 **EMRP - Thin Films - Project: Development of optical metrology for thin films** H19 3
P. Petrik1, B. Pollakowski2, S. Zakel4, A. Nutsch3, G. Roeder4, T. Gumprecht4, B. Fodor1,5, E. Agocs, G. Juhasz1, O. Polgar1, C. Major1, Z. Labadi1, Z. Baji1, M. P. M. Jank4, M. Schellenberger4, B. Beckhoff2, M. Fried1
1Institute for Technical Physics & Materials Science (MFA), Research Centre for Natural Sciences, Konkoly Thege u. 29-33, 1121 Budapest, Hungary 2Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany 3Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, D-38116 Braunschweig, Germany 4Fraunhofer Institute for Integrated Systems and Device Technology IISB, Schottkystrasse 10, 91058 Erlangen, Germany 5Faculty of Science, University of Pécs, 7624 Pécs, Ifjúság útja 6, Hungary

14:50 **EMRP - Thin Films - Project: Traceable water vapour measurements to underpin the development of barrier layer technology** **H19 4**
Valerio Ferracci, Paul Brewer
National Physical Laboratory

15:05 **EMRP - Q-AIMDS - Project: Development and characterization of model samples systems for improved surface chemical analysis of medical devices.** **H19 5**
B. J. Tyler, R. T. Steven, S. J. Spencer, A. Shard
National Physical Laboratory, UK

15:20 **EMRP - Q-AIMDS - Project: Reference samples for quantification of trace elements in biomaterials by solid state spectroscopy** **H19 6**
Jan Thieleke, Anja Dreyer, Carla Vogt
Leibniz University Hannover, Institute for Inorganic Chemistry, Callinstr. 9, 30167 Hannover, Germany, vogt@acc.uni-hannover.de

15:35 **EMRP - Q-AIMDS – Project: Characterization of advanced biomaterials for the medical device industry using Synchrotron Radiation based FTIR microspectroscopy** **H19 7**
Andrea Hornemann, Kelim Vano Herrera, Carla Vogt, Bonnie Tyler, Arne Hoehl, Peggy Emmer, Burkhard Beckhoff
Physikalisch Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany; Leibnitz University Hannover, Callinstr. 9, 30167 Hannover, Germany; Leibnitz University Hannover, Callinstr. 9, 30167 Hannover, Germany; National Physics Laboratory, Hampton Road, Teddington TW11 0LW, United Kingdom; Physikalisch Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany; Physikalisch Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany; Physikalisch Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany;

15:50 **Coffee Break**

Highlights of European Metrology Research Programme (EMRP) Projects 4 : Bonnie Tyler and Carla Vogt

16:20 **EMRP - Q-AIMDS - Project: Surface analysis of biomedical device materials by Raman Spectroscopy** **H20 1**
A.M. Giovannozzi*, C. Portesi**, A.L. Hook***, M.R. Alexander***, R.T. Steven****, B. Tyler****, S. Pascale***** and A.M. Rossi*
A.M. Giovannozzi*; A.M. Rossi* Thermodynamic Division, Istituto Nazionale di Ricerca Metrologica, Strada delle Cacce, 91 10135, Torino, Italy C. Portesi** Electromagnetism Division, Istituto Nazionale di Ricerca Metrologica, Strada delle Cacce, 91 10135, Torino, Italy A.L. Hook***; M.R. Alexander*** Laboratory of Biophysics and Surface Analysis University of Nottingham Nottingham, UK R. Stevens****; B. Tyler**** Surface & Nanoanalysis National Physical Laboratory, Teddington, Middlesex, TW11 0LW, UK S.Pascale***** Cardiac Surgery B.U. - Heart Valve Sorin Group Italia S.r.l. Strada per Crescentino,13040 SALUGGIA (VC), Italy

16:35 **EMRP - TReND - Project: Self-assembled diblock copolymers as reference model systems for metrology and surface analysis.** **H20 2**
L. Boarino 1, E. Enrico 1, N. De Leo 1, G. Aprile 1, M. Perego 2, F. Ferraresi Lupi 2, M. Laus 3, K. Sparnacci 3, I. Gilmore 4, R. Havelund 4, A. Sesis 4, and F. Castro 4
1 NanoFacility Piemonte, Electromagnetism Division, Istituto Nazionale di Ricerca Metrologica, Strada delle Cacce 91 - 10135 Torino (I); 2 Laboratorio MDM, IMM-CNR, Via C. Olivetti 2, 20846 Agrate Brianza (MB), (I); 3 DiSIT, Università del Piemonte Orientale, viale T. Michel 11, 15121 Alessandria (I); 4 Materials Division
National Physical Laboratory, Hampton Rd, Teddington, UK

16:50 **EMRP - TReND - Project: Comparison of lab-based and synchrotron-based quantification of Al in thin ALD Al2O3 films** **H20 3**
B. Detlefs ,E. Nolot , H. Fontaine, T. Lardin, A. B. Fadjie Djomkam, M. Mueller, P. Hoenicke, B. Beckhoff
CEA-LETI, 17 rue des Martyrs, 38054 Grenoble, France; Physikalisch-Technische Bundesanstalt, Abbestraße 2- 12, 10587 Berlin, Germany

EMRP Tutorials: Characterization of Nano Materials 1 : Blanka Detlefs and Andreas Nutsch

17:05 **EMRP - Nanostrain - Tutorial: Focused Ion Beam machining for site-specific nanocharacterization - advances and drawbacks** **H21 1**
Werner Österle, Nicole Wollschläger
BAM Federal Institute for Materials Research and Testing

17:45 **EMRP - Nanostrain - Tutorial: Advanced XRD methodologies** **H21 2**
Thomas Hase
University of Warwick

EMRP Tutorials: Characterization of Nano Materials 2 : Birgit Kanngießer and Petr Klapetek

08:30 **EMRP - Nanostrain - Tutorial: Characterization of Si-based nanostructures by near-field imaging and nano-FTIR spectroscopy** H22 1
Peter Hermann, Arne Hoehl, Bernd Kaestner, Gerhard Ulm, Burkhard Beckhoff
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany

09:00 **EMRP - Q-AIMDS - Tutorial: Ambient mass spectrometry for surface characterization of medical devices.** H22 2
B. J. Tyler, T.L. Salter, I.S. Gilmore
National Physical Laboratory, UK

09:30 **EMRP - Thin Films and Q-AIMDS - Tutorial: Quantitative X-ray fluorescence analysis under grazing incidence condition for stratified materials based on X-ray Standing Wave field calculations** H22 3
B. Pollakowski, J. Eilbracht, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany

10:00 **Coffee Break**

EMRP Tutorials: Characterization of Nano Materials 3 : Marie-Christine Lépy and Burkhard Beckhoff

10:30 **EMRP - Thin Films - Tutorial: Metrology for quantitative Raman mapping evaluation** H23 1
R. Stosch, C. Frank, B. Güttler, S. Pape, S. Wundrack, S. Zakel
Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

11:00 **EMRP - TReND - Tutorial: 3D secondary ion mass spectrometry imaging of organic materials** H23 2
R. Havelund
National Physical Laboratory, Teddington, Middlesex, TW11 0LW, UK

11:45 **EMRP - TReND - Tutorial: Synchrotron Radiation based X-Ray Spectrometry for nanoscaled materials** H23 3
Matthias Müller, Philipp Hönicke
Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587, Berlin, Germany

12:30 **Lunch Break**

E-MRS

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM I

Solution processing and properties of functional oxide thin films and nanostructures

Symposium Organizers:

Johan E. ten Elshof, University of Twente, Enschede, The Netherlands

Narcís Mestres, Institute of Materials Science Barcelona,

Bellaterra (Barcelona), Spain

An Hardy, Hasselt University, Diepenbeek, Belgium

Barbara Malic, Jožef Stefan Institute, Ljubljana, Slovenia

Geoffrey L. Brennecka, Sandia National Laboratories, Albuquerque, USA

Published in the Journal of Sol-Gel Science and Technology.

26 May 2014

Synthesis I : Barbara Malic

09:00 **Solution design for ReBCO CSD -MOD route.** **I.1. 1**
S.Ricart1, X.Palmer1, E.Solano1,2, M. Nasui3, C. Pop3, C.F. Sanchez1, P.Cayado1, L. Ciontea3, J.Ros2, R. Yañez2, P.Roura4, J.Farjas,4 A.Palau1, R.Guzman1, J. Albiol 1, M. Coll1, X.Obradors1, T.Puig1 .
1) Institut de Ciencia de Materials de Barcelona (CSIC), Campus UAB, 08193 Cerdanyola, Spain. 2)Departament de Química, Universitat Autonoma de Barcelona, Campus UAB, Cerdanyola, Spain. 3) University of Cluj-Napoca,15, Cluj-Napoca, Romania 4) Departament de Fisica, Universitat de Girona, Girona, Spain.

09:30 **Hydrophobic Nanoreactor Templating for Nanostructured Metal-Metal Oxide Nanocomposites Electrodes** **I.1. 2**
Amandine Guiet (1), Tobias Reier (1), Nina Heidary (1), Michael Lublow(1), Benjamin Johnson (2), Ulla Vainio (3), Matthias Driess (1), Peter Strasser (1), Holger Dau (4), Helmut Schlaad (5) Jörg Polte (6), Anna Fischer(1)
(1) TU Berlin, Germany (2) Fritz Haber Institute, Berlin, Germany (3) Helmholtz-Zentrum Geesthacht, Geesthacht,Germany (4) Humboldt University of Berlin, Germany (5) Max Planck Institute of Colloids and Interfaces, Golm-Potsdam, Germany (6) Free University Berlin, Germany

09:45 **Employing basic tools to gain fundamental insight into the chemical nature of Methyltriethoxysilane and Dimethyldiethoxysilane sol-gel systems** **I.1. 3**
V. Vuillet-A-Ciles1, K. Lionti2, A. Brioude1, B. Toury1
1 Lab. Multimatériaux et Interfaces, Université de Lyon, France ; 2 IBM Almaden Research Center, San Jose, USA

10:00 **Coffee & tea**

Nanowires & sensing : Reinhard Schwarz & Thierry Gacoin

10:30 **All-solution Synthesis of Entangled ZnO Nanorods for Sensing Applications** **I.2. 1**
A.Resmini, I.Tredici, U.Anselmi-Tamburini
Department of Chemistry University of Pavia, Italy

11:00 **Ultrathin urchin-like ZnO Nanowires** **I.2. 2**
A. Gokarna*, R. Parize, H. Kadiri, K. Nomenyo, G. Patriarche,1 P. Miska,2, G. Lerondel
LNIO, ICD, STMR (UMR 6279), CNRS - Université de Technologie de Troyes, 12 rue Marie-Curie BP2060, 10010 Troyes, FRANCE ; 1Laboratory of Photonics and Nanostructures, UPR-20, Site Alcatel de Marcoussis, Route de Nozay, 91460 Marcoussis, France ; 2 Institut Jean Lamour – CNRS UMR 7198 – Université de Lorraine, Faculté des Sciences et Technologies, BP 70239, F-54506 Vandoeuvre les Nancy, France.

11:15 **SiO2 nanowires-Au nanoparticles functional composites: physical fabrication and structural characterizations** **I.2. 3**
F. Ruffino, M. G. Grimaldi
F. Ruffino, M. G. Grimaldi Dipartimento di Fisica e Astronomia Università di Catania and MATIS-CNR, via S. Sofia 64, 95123 Catania, Italy

11:30 **ZnO:Ca nano-powders: sol-gel synthesis, characterization and sensing properties** **I.2. 4**
R. Dhahri1*, M. Hjiri1, L. El Mir1,2, G. Neri3
1 Laboratory of Physics of Materials and Nanomaterials Applied at Environment, Faculty of Sciences of Gabes, 6072 Gabes, Tunisia;2 Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Department of Physics, Riyadh 11623, Saudi Arabia;3 Department of Electronic Engineering, Chemistry and Materials Engineering, University of Messina, Messina 98166, Italy.

11:45 **In situ observation of the replacement of Indium in ZnO nanowires via atomic diffusion** **I.2. 5**
Shau-Chieh Wang 1, Ming-Yen Lu 2, Manekkathodi Afsal 1,3, Pei-Hsuan Liu 1, Hung-Chiao Lin 1, Wun-Shan Li 1, Te-Chien Hou 1, Shangjr Gwo 3, Lih-Juann Chen 1
1 Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan; 2 Graduate Institute of Opto-Mechatronics, National Chung Cheng University, Chiayi 62102, Taiwan; 3 Department of Physics, National Tsing Hua University, Hsinchu 30013, Taiwan.

12:00 **Confined Sol-Gel route to epitaxial Octahedral Molecular Sieve nanowires with tunable compositions on silicon** **I.2. 6**
Adrián Carretero-Genevrier1*, Judith Oró-Solé2, Jaume Gázquez2, Teresa Puig2, Xavier Obradors2, Clément Sanchez3, Narcís Mestres2, Etienne Ferain4,Juan Rodríguez-Carvajal5
1Institut des Nanotechnologies de Lyon (INL) CNRS- Ecole Centrale de Lyon, 36 avenue Guy de Collongue, 69134 Ecully, France. 2Institut de Ciència de Materials de Barcelona ICMAB, Consejo Superior de Investigaciones Científicas CSIC, Campus UAB 08193 Bellaterra, Catalonia, Spain 3Laboratoire Chimie de la Matière Condensée, UMR UPMC-Collège de France-CNRS 7574. Collège de France, 11 place Marcelin Berthelot, 75231 Paris, France. 4Institute of Condensed Matter and Nanosciences, Bio & Soft Matter (IMCN/BSMA), Université Catholique de Louvain, Croix du Sud 1,1348 Louvain-la-Neuve, Belgium, and it4ip s.a., rue J. Bordet (Z.I. C), 7180 Seneffe, Belgium 5Institut Laue-Langevin, 6 rue Jules Horowitz, BP 156, 38042 Grenoble Cedex 9, France

12:15 **TiO2 nanowires by microwave hydrothermal synthesis** **I.2. 7**
E.Arcadipane, L. Romano, M. Zimbone, R. Sanz, G. Impellizzeri, M. A. Buccheri, M. Cantarella, M.G. Grimaldi, V. Privitera
Dipartimento di Fisica e Astronomia, Università di Catania and IMM-CNR MATIS, via S. Sofia 64, 95123 Catania, Italy.

12:30 **Lunch break**

Optoelectronic materials I : Umberto Anselmi-Tamburini & Jesus Ricote

14:00 **Transparent Oxide Conductors and Semiconductors. New Science and Potential Technologies** **I.3. 1**
Tobin J. Marks
Department of Chemistry and the Materials Research Center, Northwestern University Evanston IL 60208 USA

14:30 **Transparent conducting electrodes with a periodic porous architecture** **I.3. 2**
Kristina Peters, Ksenia Fominykh, Peter Zehetmaier, Dina Fattakhova-Rohlfing*
Department of Chemistry and Center for NanoScience (CeNS), Ludwig-Maximilians-University (LMU), Butenandtstr. 5-13 (E), 81377 Munich, Germany (*email: dina.fattakhova@cup.uni-muenchen.de)

14:45 **Light Extraction Enhancement of Vertical LED by Growing ZnO Nano-rods on Tips of n-GaN Pyramids and Polarization Dependent Measurement of Nano-structure** **I.3. 3**
Yen-Ju Wu, Chin-Han Liao, Cheng-Yi Liu
Department of Chemical and Materials Engineering National Central University, Jhongli, Taiwan

15:00 **Luminescence Enhancement from Inverted Light-emitting Devices based on Zinc Oxide Nanorod Arrays** **I.3. 4**
Wei-Sheng Chen, Wei-Chi Chen, Sheng-Hsiung Yang*
Institute of Lighting and Energy Photonics, National Chiao Tung University

15:15 **ZnO nanostructured films with tailored properties prepared by simple wet chemical methods** **I.3. 5**
C. Florica, N. Preda, I. Zgura, M. Socol, M. Enculescu, A. Evanghelidis, I. Enculescu
National Institute of Materials Physics, Magurele-Bucharest, P.O. Box MG-7, R-77125, Romania

15:30 **Effect of Chemical Precursors On the Optical and Electrical Properties of p-Type Transparent Conducting Cr2O3:(Mg,N)** **I.3. 6**
Elisabetta Arca, Karsten Fleischer, Sergey Krasnikov, Igor Shvets
Trinity College Dublin, Dublin, Ireland.

15:45 **Direct Electrochemical Growth of Vertically-Oriented ZnO Nanorod Arrays on Transparent Al-Doped ZnO Electrodes** **I.3. 7**
Vlad-Andrei Antohe (a), Martin Mickan (a), Frédéric Henry (b) and Luc Piraux (a)
(a) Institute of Condensed Matter and Nanosciences (IMCN), Universite catholique de Louvain (UCL), Place Croix du Sud 1, B-1348 Louvain-la-Neuve, Belgium (b) Institute of Mechanics, Materials and Civil Engineering (IMMC), Universite catholique de Louvain (UCL), Place Sainte-Barbe 2, B-1348 Louvain-la-Neuve, Belgium

16:00 **Coffee & tea**

Optoelectronic materials II : Tobin Marks

16:30 **Highly birefringent thin Films by Shear-Oriented Assembly of Colloidal Nanorods** **I.4. 1**
JW Kim, K. Lahlil, JP Boilot, J. Peretti, T. Gacoin
Laboratoire de Physique de la Matière Condensée (PMC), CNRS – Ecole Polytechnique, UMR 7643, 91128 Palaiseau Cedex, France

17:00 **Photocapacitance and Photocurrent Spectroscopy in ZnO Nanowires** **I.4. 2**
P. Sanguino(a), R. Ayouchi(b), R. Schwarz(b), R. Igreja(c), and R. Franco(a)
(a) REQUIMTE, Departamento de Química, Faculdade de Ciências e Tecnologia Universidade Nova de Lisboa, 2829-516 Caparica, Portugal; (b) Departamento de Física and ICEMS, Instituto Superior Técnico, Lisbon, Portugal; (c) CENIMAT/I3N, Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa and CEMOP-UNINOVA, 2829-516 Caparica, Portugal.

17:15 **Tunning photolumencence wavelength by controlling the surface stoichiometry of ZnO Nanorods grown by microwave assisted and traditional water bath assisted aqueous solution synthesis** **I.4. 3**
Jie TANG1+, Chuan Beng TAY1, Jianwei CHAI2, Xuan Sang NGUYEN3, Soo-Jin CHUA3#
1Electronics and Communication Engineering, National University of Singapore, Singapore, 2Institute of Materials Research and Engineering, Agency for Science, Technology and Research (A*STAR), Singapore,3Singapore-MIT Alliance, National University of Singapore, Singapore

17:30 **Tunable Composition and Superlattice Structure of Single Crystalline In2-xGaxO3(ZnO)m Nanowires** **I.4. 4**
Yujie Guo1, Pieter L'hoëst1, Tom Van der Donck1, Vijay Shankar Rangasamy2, Savitha Thayumanasundaram2, Jean-Pierre Locquet2, Jin Won Seo1
1 Department of Materials Engineering, KU Leuven, 3001 Leuven, Belgium; 2 Laboratory of Solid State Physics and Magnetism, KU Leuven, 3001 Leuven, Belgium

17:45 **Energy transfer between Ce end Tb ions in sol-gel synthesized YSO crystals.** **I.4. 5**
Chiriu D., Ricci P.C., Carbonaro C.M., Corpino R., Stagi L.
Department of Physics, University of Cagliari

Poster session 1 : An Hardy

18:00 **Elaboration of ZrO2 nanoparticles in sol-gel reactor for biofuel synthesis** **I.P1. 1**
Sana Labidi, Fabien Volle, Mounir Ben Amar, Jean-Philippe Passarello, Andreï Kanaev
Laboratoire des Sciences des Procédés et des Matériaux, UPR 3407 CNRS, Institut Galilée, Université Paris13, Sorbonne Paris Cité, 93430 Villetaneuse, France

18:00 **Spray Langmuir-Blodgett deposition of oxide nanosheet films** **I.P1. 2**
Huiyu Yuan, Johan E. ten Elshof
MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, the Netherlands.

18:00 **Direct Access to Crystalline Mesoporous Transition Metal Oxides** **I.P1. 3**
Limin Guo, Shintaro Ida, Takashi Daio, Hidehisa Hagiwara, Tatsumi Ishihara
International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Department of Applied Chemistry and International Research Center for Hydrogen Energy, Kyushu University, 744 Motooka, Nishi-ku, Fukuoka 819-0395, Japan.

18:00 **Energy saving cool paints prepared with ceramic powder** **I.P1. 4**
Jee Hye Shin1,2, Hee Jung Kim1,3 and Jung Whan Yoo1*
1 Composite Materials Team, Korea Institute of Ceramic Engineering and Technology, Seoul, Korea ; 2 Department of chemical & biological engineering, Korea University, Korea ; 3 School of Advanced Materials Science & Engineering, Sungkyunkwan University, Korea

18:00 **Combination of metal oxalates coprecipitation and hydrothermal route for the synthesis of nanocrystalline metal oxides** **I.P1. 5**
Stefano Diodati [a,b], Silvia Gross [a,b]
[a] Istituto per l'Energetica e le Interfasi, IENI-CNR and INSTM, UdR, via Marzolo, 1, I-35131, Padova, Italy; [b] Dipartimento di Scienze Chimiche, Università degli Studi di Padova, via Marzolo, 1, I-35131, Padova, Italy

18:00 **Structural and magnetic study of La0.7Sr0.3MnO3 nanotubes grown from chemical solutions in confined geometries** **I.P1. 6**
Adrián Carretero-Genevrier1,2, C. Frontera2, A. Hassini2, Judith Oró-Solé2, C.Moreno2, Teresa Puig2, Xavier Obradors2, Narcís Mestres2
1 Institut des Nanotechnologies de Lyon (INL) CNRS- Ecole Centrale de Lyon, 36 avenue Guy de Collongue, 69134 Ecully, France; 2 Institut de Ciència de Materials de Barcelona ICMAB, Consejo Superior de Investigaciones Científicas CSIC, Campus UAB 08193 Bellaterra, Catalonia, Spain

18:00 **Sol-gel based hydrophobic antireflective coatings on organic substrates: a detailed investigation of Ammonia Vapor Treatment (AVT)** **I.P1. 7**
Mickael Boudot, Vincent Gaud, Mélanie Louarn, David Grosso
Mickael Boudot : Laboratoire Chimie de la Matière Condensée de Paris (LCMCP), UMR-7574 UPMC-CNRS, Collège de France, 11, place Marcelin Berthelot, 75231 Paris Cedex 05, France. Polyrise SAS, F-33607 Pessac, France. ; Vincent Gaud : Polyrise SAS, F-33607 Pessac, France. ; Mélanie Louarn : Polyrise SAS, F-33607 Pessac, France. ; David Grosso : Laboratoire Chimie de la Matière Condensée de Paris (LCMCP), UMR-7574 UPMC-CNRS, Collège de France, 11, place Marcelin Berthelot, 75231 Paris Cedex 05, France.

18:00 **Adhesion and Morphology Enhancement of SiO2 Aerogel Films Grown on Silicon Substrate Using SiO2 Buffer Layer** **I.P1. 8**
X.Y. Sun, C.G. Wu, W.B. Luo[* corresponding author: luowb@uestc.edu.cn]*, P. Li, X.Y. Chen, J. Meng, W. Y. Fu, X. Qing, Y. Shuai, W.L. Zhang
University of Electronic Science and Technology of China

18:00 **Ultrahigh Density Sub-10 nm TiO2 Nanosheet Arrays Using Si-Containing Block Copolymer Lithography and Atomic Layer Deposition** **I.P1. 9**
Chang-Hong Bak, Se Jin Ku, Gyeong Cheon Jo, Soo Young Choi, Jae Wook Ha and Jin-Baek Kim*
Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Yuseong-gu, Daejeon, 305-701, Korea

18:00 **Fabrication of Freestanding Titanium Oxide Nanotube Arrays Using Si-Containing Block Copolymer Lithography and Atomic Layer Deposition** **I.P1. 10**
Gyeong Cheon Jo*a, Se Jin Ku*a, Chang-Hong Bak*a, Su Min Kim*a, Yu Ri Shin*b, Kwang Ho Kim*b, Se Hun Kwon,*b and Jin-Baek Kim*a
*a; Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Yuseong-gu, Daejeon, 305-701, Korea *b; National Core Research Center for Hybrid Materials Solution, Pusan National University Busan, 609-735, Korea

18:00 **Fabrication of Dually Functionalized Surfaces on an Au Substrate Using a Si-Containing Negative Photoresist** **I.P1. 11**
Soo Young Choi, Seung A Woo, Se Jin Ku, Jae Wook Ha, Kyoung Ok Jung and Jin-Baek Kim*
Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Yuseong-gu, Daejeon, 305-701, Korea

18:00 **Fabrication of Functional Nanostructure Arrays Using Dual Responsive Nanoporous Templates** **I.P1. 12**
Kyoung Ok Jung, Chang Hong Bak, Gyeong Cheon Jo, Seung Min Shin and Jin-Baek Kim
Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Yuseong-gu, Daejeon, 305-701, Korea

18:00 **UV-curing hybrid resists for nanoimprint lithography using a diazoketo functionalized POSS** **I.P1. 13**
Seung Min Shin, Seung A Woo, Kyoung Ok Jung and Jin-Baek Kim*
Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Yuseong-gu, Daejeon, 305-701, Korea

18:00 **Kinetics and purity of ultraporous Al2O3 monoliths grown from poly- and mono-crystalline metallic aluminium** **I.P1. 14**
Hang Nga Nguyen*, Mohamed Amamra*, Andrei Kanaev* Alexei P. Shcherban, Vladimir D. Virich, Anatoly D. Solopichin, Gennnady P. Kovtun
*Laboratoire des Sciences des Procédés et des Matériaux (LSPM)-UPR 3407 CNRS 99, av. Jean-Baptiste Clément, Université Paris-Nord, 93430 Villetaneuse, France NSC «Kharkov Institute of Physics & Technology», Institute of Solid State Physics, Materials and Technology, 1 Academic str., 61108 Kharkov, Ukraine

18:00 **Atomic layer deposition of holmium titanium oxide thin films and nanolaminates** **I.P1. 15**
Kaupo Kukli (a,b), Marianna Kemell (a), Mukesh Chandra Dimri (c), Joosep Link (c), Jun Lu (d), Esa Puukilainen (a), Aile Tamm (b), Roland Hoxha (b), Raivo Stern (c), Lars Hultman (d), Mikko Ritala (a) Markku Leskelä (a)
(a) University of Helsinki, Department of Chemistry, Finland; (b) University of Tartu, Institute of Physics, Estonia; (c) National Institute of Chemical Physics and Biophysics, Tallinn, Estonia; (d) Linköping University, Department of Physics, Sweden

18:00 **Mechanism of low temperature, aqueous solution deposition of conductive Al-doped ZnO** **I.P1. 16**
P. Fuchs*, H. Hagendorfer, Y.E. Romanyuk, A.N. Tiwari
Laboratory for Thin Films and Photovoltaics, Empa, Swiss Federal Laboratories for Materials Science and Technology, 8600 Duebendorf, Switzerland

18:00 **Study of optical, morphological and electrical properties of TiO2 and TiNbO2 oxides obtained by thermal oxidation** **I.P1. 17**
L. Ion1, Sorina Iftimie1,2, A. Radu1, R. Mallet2, S. Antohe1, Mihaela Girtan2
1Faculty of Physics, University of Bucharest, Romania 2LPHIA Laboratory, LUNAM - Angers University, France

18:00 **Microjet: A New Tool in the Continuous Wet Chemical Production of Nanoparticles** **I.P1. 18**
Annika Betke, Guido Kickelbick
Saarland University, Inorganic Solid State Chemistry, Am Markt Zeile 3, 66125 Saarbrücken, Germany

18:00 **Liquid exfoliated 2D MoO3 nanostructures for biosensing** **I.P1. 19**
Sivacarendran Balendhran, Sumeet Walia, Jian Zhen Ou, Sharath Sriram, Madhu Bhaskaran, and Kourosh Kalantar-zadeh
Functional Materials and Microsystems Research Group, School of Electrical and Computer Engineering RMIT University, Melbourne, Australia.

18:00 **Effect of titanium on the formation of nanostructured oxide films in Ti-based metals by means of wet corrosion process** **I.P1. 20**
So Yoon Lee 1, Jean-Pierre Locquet 2, Jin Won Seo 1
1 Department of Metallurgy and Materials Engineering, School of Engineering, KU Leuven, Belgium; 2 Laboratory of Solid State Physics and Magnetism, KU Leuven, 3001 Heverlee, Belgium

18:00 **Elaboration and characterization of thin films by Spray Pyrolysis technique** **I.P1. 22**
L. Boudaoud1,2, N.Benramdane1, A. Bouzidi1, A. Nekerela1
1 LECM :Laboratoire D'élaboration et caractérisation des matériaux, Université Djillali Liabes Sidi Bel Abbes 2 Unité de Recherche en Energies Renouvelables au Milieu Saharien, Centre de Développement des Energies Renouvelables d'Alger, B.P 478, Route Reggane, Adrar

18:00 **New approach to solution deposition of nanocrystalline smooth thin films of Y2O3 and Al2O3** **I.P1. 23**
Martynova I., Tsymbarenko D., Kamenev A., Amelichev V., Vasiliev A., Molodyk A., Samoilenkov S., Kuzmina N., Kaul A.
Lomonosov Moscow State University, Leninskie Gory, 1/3, Moscow, Russia, 119991; Lomonosov Moscow State University, Leninskie Gory, 1/3, Moscow, Russia, 11999; SuperOx, Nauchnyi proezd, 20, bilding 2, Moscow, Russia, 117246; SuperOx, Nauchnyi proezd, 20, bilding 2, Moscow, Russia, 117246; National Research Centre «Kurchatov Institute», pl. Akad. Kurchatova, 1, Moscow, Russia, 123182; SuperOx, Nauchnyi proezd, 20, bilding 2, Moscow, Russia, 117246; SuperOx, Nauchnyi proezd, 20, bilding 2, Moscow, Russia, 117246; Lomonosov Moscow State University, Leninskie Gory, 1/3, Moscow, Russia, 119991;Lomonosov Moscow State University, Leninskie Gory, 1/3, Moscow, Russia, 119991

18:00 **One-pot synthesis of WO3 nanostructures at 95 oC using NaOH and HCl** **I.P1. 24**
K. Christou1, D. Louloudakis2,3*, D. Vernardou3, N. Katsarakis3,4,5, E. Koudoumas3,4
1 Mechanical Engineering Department, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece 2 Department of Physics, University of Crete, 710 03 Heraklion, Crete, Greece. 3 Center of Materials Technology and Photonics, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece 4 Electrical Engineering Department, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece 5 Institute of Electronic Structure and Laser, Foundation for Research & Technology-Hellas, P.O. Box 1527, Vassilika Vouton, 711 10 Heraklion, Crete, Greece *corresponding author, e-mail:dimitr17@yahoo.gr Tel: 30 2810 379774

18:00 **Syntheses of Zinc Oxide and Zinc Hydroxide Nanosheets and the Photoluminescent Properties of their Layered Materials** **I.P1. 25**
Özge Sağlam1, Takaaki Taniguchi2,3, Yasumichi Matsumoto2,3
1)Physik-Department, Technische Universität München, James-Franck-Str., D-85748 Garching, Germany; 2)Graduate School of Science and Technology, Kumamoto University, 2-39-1 Kurokami, Kumamoto 860-8555, Japan; 3)JST, CREST, 5 Sanbancho, Chiyoda-ku, Tokyo 102-0075, Japan

18:00 **Hydrothermal growth of bilayered rutile-phased TiO2 nanorods/micro-size TiO2 flowers in highly acidic solution** **I.P1. 26**
M. K Ahmad1, V.M Mohan2, and K. Murakami2
1Microelectronics and Nanotechnology-Shamsuddin Research Centre (MiNT-SRC) Universiti Tun Hussein Onn Malaysia 86400 Batu Pahat, Johor, Malaysia 2Research Institute of Electronics Shizuoka University 432-8011 Hamamatsu, Shizuoka, Japan

18:00 **Fabrication of nanocomposite cobalt oxide-silica thin films by sol-gel technique for gas sensing applications** **I.P1. 27**
Atif Mossad Ali 1,2
1 Department of Physics, Faculty of Science, King Khalid University, Abha, Saudi Arabia 2 Department of Physics, Faculty of Science, Assiut University, Assiut, Egypt

18:00 **Novel Materials and Processing for Printed Metal Oxide Devices** **I.P1. 28**
Jinwang Li [1,2,*], Phan Trong Tue [1,2], Yoshitaka Murakami [2,4], Tadaoki Mitani [1,2], Eisuke Tokumitsu [1,2,3,5] & Tatsuya Shimoda [1,2,3]
[1] Japan Science and Technology Agency (JST), ERATO, Shimoda Nano-Liquid Process Project, 2-5-3 Asahidai, Nomi, Ishikawa 923-1211, Japan; [2] Green Devices Research Center, Japan Advanced Institute of Science and Technology (JAIST), 2-13 Asahidai, Nomi, Ishikawa 923-1211, Japan; [3] School of Materials Science, Japan Advanced Institute of Science and Technology, 1-1 Asahidai, Nomi, Ishikawa 923-1292, Japan; [4] JSR Corporation, Yokkaichi Research Center, 100 Kawajiri-cho, Yokkaichi, Mie 510-8552, Japan; [5] Precision and Intelligence Laboratory, Tokyo Institute of Technology, 4259-R2-19 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan. * Email: lijw@jaist.ac.jp.

18:00 **Large-scaled Growth of High Sensitive and Non-enzymatic Glucose Sensing Cu2O Nanocubes** **I.P1. 29**
Yin-Jie Pan, I-Chung Chang, Hsin-Tien Chiu, Chi-Young Lee
National Tsing Hua University, National Tsing Hua University, National Chiao Tung University,

18:00 **Photochemical deposition of the plasmonic silver nanostructures** **I.P1. 30**
Zbigniew Starowicz(1),Katarzyna Berent(1), Robert P. Socha(2), Justyna Dziedzic(2), Marek Lipinski(1),
(1) Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 25 Reymonta St., 30-059 Cracow, Poland, phone + 48 12 2952808, fax: + 48 126372192, e-mail: zbigniew.starowicz@gmail.com (2) Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, 8 Niezapominajek St. 30-239 Cracow

18:00 **Simple synthesis of 0D and 2D single phase Fe3O4 nanoparticles by co-precipitation method** **I.P1. 31**
Andris Sutka, Santa Lagzdina, Mihael Maiorov, Rainer P?rna, Tanel K??mbre, Vambola Kisand
Institute of Silicate Materials, Riga Technical University, Azenes 14/24, Riga, LV-1048, Latvia; Institute of Physics, University of Latvia, Miera 32, Salaspils, LV-2169, Latvia; Institute of Physics, University of Tartu, Riia 142, 51014 Tartu, Estonia; Estonian Nanotechnology Competence Center, Riia 142, 51014 Tartu, Estonia;

18:00 **Synthesis of TiO2 thin film with embedded Au nanoparticles** **I.P1. 32**
V. Scuderi (a), G. Impellizzeri (a), L. Romano (a), M. Scuderi (b), MV. Brundo (c), K. Bergum (d), M. Zimbone (a), R. Sanz (a), MA. Buccheri (a), F. Simone (a), G. Nicotra (b), BG. Svensson (e), V. Privitera (a)
(a) CNR-IMM MATIS and Department of Physics and Astronomy, University of Catania, Via S. Sofia 64, I-95123 Catania, Italy; (b) CNR-IMM, Z.I. VIII Strada 5, 95121 Catania, Italy; (c) Department of Biological, Geological and Environmental Sciences, University of Catania, Via Androne 81, 95124, Catania, Italy; (d) Oslo University, Ctr Mat Sci & Nanotechnol, Dept Chem, N-0315 Oslo, Norway; (e) Oslo University, Department of Physics/Centre for Materials Science and Nanotechnology, N-0318 Oslo, Norway;

18:00 **Zirconia and zirconia-alumina coatings deposited by plasma enhanced aerosol-gel method** **I.P1. 33**
Sebastian Miszczak, Bozena Pietrzyk, Zbigniew Gawronski
Institute of Materials Science and Engineering Lodz University of Technology

18:00 **Investigation of electrical and sensing properties of ZnO:Al thin films prepared by PLD** **I.P1. 34**
R. Dhahri1*, M. Hjiri1, A. Alyamani2, L. El Mir1,3, D. Aloisio4, M. Latino4, N. Donato4, G. Neri4
1 Laboratory of Physics of Materials and Nanomaterials Applied at Environment, Faculty of Sciences of Gabes, 6072 Gabes, Tunisia;2 National Nanotechnology Research Centre, KACST, Riyadh 11623, Saudi Arabia;3 Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Department of Physics, Riyadh 11623, Saudi Arabia;4 Department of Electronic Engineering, Chemistry and Industrial Engineering, University of Messina, Messina 98166, Italy.

18:00 **Water stress corrosion in direct oxide bonding mechanism** **I.P1. 35**
Chloé MARTIN-COCHER, Frank FOURNEL, Céline BOUT, Anne ROULE, Vincent LARREY
CEA, LETI, Minatec Campus, 38054 GRENOBLE, France

18:00 **A novel approach to realize optoelectronic devices exploiting Block Copolymers self-assembly** **I.P1. 36**
Claudia Diletto (a), Pasquale Morvillo (b), Finizia Auriemma (a), Claudio De Rosa (a)
(a) Department of Chemical Sciences University of Napoli «Federico II» (b) ENEA-Italian National Agency for New Technologies, Energy and Sustainable Development-Portici Research Center

18:00 **Evaluation and control of adhesive and bulk properties of performing functional hybrid coatings on polycarbonate.** **I.P1. 37**
K. Lionti3, V. Vuillet-A-Ciles1, N. Lebail2, S. Benayoun2, W. Volksen3, G. Dubois3, B. Toury1
1 Lab. Multimatériaux et Interfaces, Université de Lyon, France 2 Lab. Tribologie et Dynamique des Systèmes, Ecole Centrale de Lyon, France 3 IBM Almaden Research Center, San Jose, USA

18:00 **Influence of unit cell design on the piezoelectric response of ZnO nanowire based sensors** **I.P1. 38**
Edgar León Pérez [1], Mireille Mouis [2], Sven Salomon [1], Gustavo Ardila [2], Emmanuelle Pauliac-Vaujour [1]
[1] CEA, Leti, Systems Department, F-38054 Grenoble, France. [2] IMEP-LAHC, Minatec, 3 Parvis Louis Néel, 38016 Grenoble, France.

18:00 **7 nm natural products functionalized iron oxide nanostructures thin films prepared by MAPLE for improved resistance to microbial colonization of medical surfaces** **I.P1. 39**
Valentina Grumezescu1,2, Ecaterina Andronescu2, Alina Maria Holban3, Laurentiu Mogoanta4, George Dan Mogosanu5, Alexandru Mihai Grumezescu2, Gabriel Socol1, Bogdan Stefan Vasile2, Anton Ficai2, Roxana Trusca6, Florin Iordache7
1Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania 2Department of Science and Engineering of Oxidic Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 3Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1–3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 4 Research Center for Microscopic Morphology and Immunology, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 5 Department of Pharmacognosy & Phytotherapy, Faculty of Pharmacy, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 6S.C. Metav-CD S.A., 31Rosetti Str., 020015 Bucharest, Romania 7Institute of Cellular Biology and Pathology of Romanian Academy, “Nicolae Simionescu”, Department of Fetal and Adult Stem Cell Therapy, 8, B.P. Hasdeu, Bucharest 050568, Romania

18:00 **Preparation, Structure, and Magnetic Properties of CuxNi1-xFe2O4 Nanoparticles for Biomedical Applications** **I.P1. 40**
Nurca Dogan Bingobali, Zerin Yesil, Ayhan Bingobali, Meltem Asilturk
Gebze Inst. of Tech., Science Faculty, Dep. of Physics, 41400 Gebze- Kocaeli, Turkey Akdeniz Uni., Faculty of Arts and Sciences, 07058, Antalya, Turkey Yıldız Teknik University, Depart. of Bioengineering, 34220,Esenler-Istanbul,Turkey Akdeniz Uni., Materials Science and Engineering, 07058, Antalya, Turkey

18:00 **Fabrication of Direct ZrO2 Nano to Micro Patterns for UV Roll-to-Roll Imprint Stamp** **I.P1. 41**
Soyoung Choo, Hak-Jong Choi, Ju-Hyeon Shin, Gyutae Kim, Bit-Na Go, Seok Hyun, Pil-Hoon Jung, Heon Lee*
Department of Materials Science and Engineering; Korea University

18:00 **Direct Printing of Spin on Glass(SOG)/ZrO2 Composite Materials on Cylindrical Substrate for Roll-to-Roll Process** **I.P1. 42**
Sang-Woo Ryu,Joong-Yeon Cho, Yang-Doo Kim,Sang-Jun Park,Ju-Hyuk Huh,Young-Hoon Seong, Heon Lee*
Department of Materials Science and Engineering; Korea University

18:00 **TiO2 oxide-based gas sensor on random PAN fibremesh** **I.P1. 43**
Kathriin Utt, Kati Kongi, Urmas Joost, Marko Eltermann, Sven Lange
Institute of Physics, University of Tartu, Riia 142, 51014, Tartu, Estonia

18:00 **High-angle annular dark field (HAADF) electron microscopy studies on mixed oxide nanoparticles** **I.P1. 44**
M. Albu 1); U. Brossmann 2); F. Hofer 1); R. Würschum 2)
1) Institute for Electron Microscopy and Nanoanalysis, Graz University of Technology, Steyrergasse 30, 8010 Graz, Austria; 2) Institute of Materials Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria

18:00 **Nanopatterning of a copper surface.** **I.P1. 45**
S.Nedilko, S.Rozouvan.
Taras Shevchenko National University of Kyiv, Physics Dept. pr. Acad. Glushkova 2, Kyiv, Ukraine

18:00 **Hydrothermal preparation of labyrinth shaped WO3 microcrystals** **I.P1. 46**
Éva Karácsonyi-1, Zsolt Pap-1,2,3 , Gábor Kovács-2,3, Lucian Baia-3, Virginia Danciu-2, András Dombi-1, Klára Hernádi-4
1-Research Group of Environmental Chemistry, Institute of Chemistry, University of Szeged, H-6720, Szeged, Tisza Lajos krt. 103, Hungary; 2-Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Arany János 11, RO-400028 Cluj-Napoca, Romania; 3-Faculty of Physics, Babes-Bolyai University, M. Kogălniceanu 1, RO-400084 Cluj-Napoca, Romania; 4-University of Szeged, Applied and Environmental Chemistry Department, H-6720 Szeged, Rerrich B. tér 1, Hungary;

18:00 **MAPLE fabricated magnetite@eugenol and poly lactic acid - chitosan coated surfaces with anti-staphylococcal properties** **I.P1. 47**
Alexandru Mihai Grumezescu1, Ecaterina Andronescu1, Alina Maria Holban2, Laurentiu Mogoanta3, George Dan Mogosanu4, Gabriel Socol5*, Valentina Grumezescu1,5, Bogdan Stefan Vasile1, Anton Ficai1, Roxana Trusca6, Florin Iordache7
1Department of Science and Engineering of Oxidic Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 2Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1–3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 3 Research Center for Microscopic Morphology and Immunology, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 4Department of Pharmacognosy & Phytotherapy, Faculty of Pharmacy, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 5Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania 6S.C. Metav-CD S.A., 31Rosetti Str., 020015 Bucharest, Romania 7Institute of Cellular Biology and Pathology of Romanian Academy, “Nicolae Simionescu”, Department of Fetal and Adult Stem Cell Therapy, 8, B.P. Hasdeu, Bucharest 050568, Romania

18:00 **Synthesis of ZnO/ZnS core shell structures from sulfurization of ZnO nanorod arrays for new superstrate solar cells architectures** **I.P1. 48**
J. López-García 1, W. Ohm 2, X. Fontané 1, V. Izquierdo-Roca 1, W. Riedel2, S. Gledhill 2, E. Saucedo 1, M. Ch. Lux-Steiner 2, A. Pérez-Rodriguez 1,3.
1 Catalonia Institute for Energy Research (IREC), C. Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs (Barcelona), Spain; 2 Fachbereich Physik, Freie Universität Berlin (FUB), Arnimallee 14, 14195 Berlin, Germany; 3 IN2UB, Department of Electronics, University of Barcelona, C. Martí i Franquès 1,08028 Barcelona ,Spain

18:00 **Poly(lactic-co-glycolic) acid/ chitosan microsphere thin films functionalized with stabilized Cinnamomi aetheroleum and magnetite nanoparticles for preventing the microbial colonization of medical surfaces** **I.P1. 49**
Valentina Grumezescu1,2, Ecaterina Andronescu2, Gabriel Socol1, Alina Maria Holban3, Laurentiu Mogoanta4, George Dan Mogosanu5, Alexandru Mihai Grumezescu2, Bogdan Stefan Vasile2, Anton Ficai2, Roxana Trusca6, Florin Iordache7
1Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania 2Department of Science and Engineering of Oxidic Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 3Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1–3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 4 Research Center for Microscopic Morphology and Immunology, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 5 Department of Pharmacognosy & Phytotherapy, Faculty of Pharmacy, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 6S.C. Metav-CD S.A., 31Rosetti Str., 020015 Bucharest, Romania 7Institute of Cellular Biology and Pathology of Romanian Academy, “Nicolae Simionescu”, Department of Fetal and Adult Stem Cell Therapy, 8, B.P. Hasdeu, Bucharest 050568, Romania

18:00 **Deposition of functional MgO films on ZrO2 microtubes** **I.P1. 50**
Marko Part, Aile Tamm, Jekaterina Kozlova, Hugo Mändar, Tõnis Arroval, Tanel Tätte, Kaupo Kukli
Institute of Physics, University of Tartu, Estonia

18:00 **Synthesis and Magnetic Studies on Sol-gel derived NaFe(WO4)2¬ Sub-micron Rods** **I.P1. 51**
A.Durairajan a, b, E. Venkata Ramana b, M.A. Valente b* and S. Moorthy Babu a
a) Crystal Growth Centre, Anna University, Chennai- 600025, India b)I3N-Aveiro, Department of Physics, University of Aveiro, Aveiro 3810 193, Portugal

18:00 **New easy two step process for iron oxides nanorods elaboration** **I.P1. 52**
N. Ballot A. Gaul F. Schoenstein S. Mercone Ph. Boullay N. Jouini
Laboratoire des Sciences des Procédés et des Matériaux, CNRS, LSPM – UPR 3407, Université Paris 13, PRES Sorbonne-Paris-Cité, 99 Avenue J.-B. Clément, 93430 Villetaneuse, France Laboratoire de Cristallographie et Sciences des Matériaux, CRISMAT - UMR6508 CNRS / ENSICAEN, 6 Bd du Maréchal JUIN 14050 Caen Cedex 4 - FRANCE

18:00 **Biomimetic synthesis and characterization of silica-coated ceria nanospheres** **I.P1. 53**
I.Kitsou, A. Tsetsekou, School of Mining and Metallurgical Engineering N.T.U.A, Iroon Polutexneiou 9, 157 80 Athens
I. Kitsou; A. Tsetsekou School of Mining and Metallurgical Engineering N.T.U.A, Iroon Polutexneiou 9, 157 80 Athens

18:00 **Polyimide Nanocomposite: Synthesis, properties and applications** **I.P1. 54**
A. A. Ebnalwaled
Electronics & Nano Devices Lab., Physics Department, Faculty of Science, South Valley University, Qena, 83523 Egypt Corresponding author: e-mail: kh_ebnalwaled@yahoo.com

18:00 **Growth of LaxSr(1-x)MnO3 thin films on insulating substrates by means of a sol-gel process** **I.P1. 55**
an Lettens, Pia Homm, Mariela Menghini, Vijay Shankar Rangasamy, Savitha Thayumanasundaram and Jean-Pierre Locquet
1Dept. of Physics and Astronomy, KU Leuven, Leuven, Belgium

18:00 **Synthesis and Characterization of TiO2: Pt thin films by Sol-Gel method** **I.P1. 56**
Erik R. Morales, Diaz-Flores L.L. , D.Martinez-Hernandez. , G.Perez-Hernandez, N.R Mathews,*, F. Paraguay-Delgado, Omar S.Martinez , J.Pantoja-Enriquez.
1 Universidad Juarez Autanoma de Tabasco, Avenida Universidad S/N, Col. Magisterial, Villahermosa, Tabasco 86040, Mexico. 2 Instituto de Energias Renovables, Universidad Nacional Autanoma de Mexico, 62580, Temixco, Morelos, Mexico: 3 CIMAV, Chihuahua, Mexico, 4 Centro del Cambio Global y la Sustentabilidad en el Sureste, Villahermosa Tabasco Mexico, 86080,5Centro de Investigacion y Desarrollo Tecnologico en Energias Renovables, UNICACH, Libramiento Norte No. 1150, Tuxtla Gutierrez, Chiapas 29039, Mexico

18:00 **Crystallization of titania sol-gel coatings on different substrates** **I.P1. 57**
Bozena Pietrzyk, Sebastian Miszczak
Institute of Materials Science and Engineering, Lodz University of Technology, Poland

Synthesis II: Low temperature synthesis : Narcis Mestres

08:30 **Very low temperature wet-chemistry colloidal routes for mono- and polymetallic nanosized crystalline inorganic compounds** — I.5. 1
Stefano Diodati[a,b], Paolo Dolcet[a], Maurizio Casarin[a], Silvia Gross[a,b]*
aDipartimento di Scienze Chimiche, Università degli Studi di Padova, via Marzolo, 1, I-35131, Padova, Italy bIstituto per l'Energetica e le Interfasi, IENI-CNR and INSTM, UdR, via Marzolo, 1, I-35131, Padova, Italy

09:00 **Low Temperature Deposition of NbOx/TiO2 Bi-Layer Films for Solar Cells Using Atmospheric Atomic Layer Deposition** — I.5. 2
Claire L. Armstrong (1), Kevin P. D. Musselman (2), David Munoz-Rojas (1,3), Judith L. MacManus-Driscoll (1)
(1) Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge, CB3 0HS, U.K.; (2) Department of Physics, University of Cambridge, JJ Thomson Avenue, Cambridge, CB3 0H3, U.K.; (3) Instituto de Ciencia de Materiales de Barcelona, ICMAB-CSIC, Campus de la UAB, Bellaterra, 08193, Spain

09:15 **Low temperature solution combustion deposition of crystalline n-type doped ZnO** — I.5. 3
H. Damm1,2, C. De Dobbelaere1, J. D'Haen3, A. Hardy1,2, M. K. Van Bael1,2
1 Hasselt University, Institute for Materials Research, Inorganic and Physical Chemistry, and Imec Division Imomec, Agoralaan building D, 3590 Diepenbeek, Belgium 2 SIM (Flemish Strategic Initiative on Materials), SoPPoM program 3 Materials Physics, Institute for Materials Research, Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium

09:30 **Low-Temperature Processed Ga- and Al-Doped ZnO Coatings from Colloidal Inks** — I.5. 4
Enrico Della Gaspera (1), Michela Cittadini (2), Alberto Salleo (3), Alessandro Martucci (2)
(1) CSIRO - Clayton - Australia; (2) Università di Padova - Italy; (3) Stanford University - USA

09:45 **Aqueous growth of ZnO thin films as a replacement for sputtered layers for inorganic photovoltaics** — I.5. 5
Enrico Della Gaspera, Joel van Embden, Jacek J. Jasieniak
CSIRO Materials Science and Engineering, Bayview Ave, Clayton, VIC 3168 Australia

10:00 **Coffee & tea**

Electronic materials : Silvia Gross & Barbara Malic

10:30 **Solution Processed Metal-Oxides for Organic Electronics** — I.6. 1
Thomas Riedl
Institute of Electronic Devices, University of Wuppertal, Rainer-Gruenter-Str. 21, 42119 Wuppertal, Germany

11:00 **Solution synthesis of metal oxide nanoparticles for ex-situ pinning in YBa2Cu3O7-x (YBCO) superconductors** — I.6. 2
Katrien De Keukeleere, Jonathan De Roo, Hannes Rijckaert, Jonas Feys, Isabel Van Driessche
Ghent University, Department of Inorganic and Physical Chemistry, Krijgslaan 281 S3, 9000 Ghent, Belgium

11:00 **Solution-processed TFTs with aqueous based Al2O3 gate dielectric obtained by auto-combustion synthesis** — I.6. 3
Rita Branquinho, Daniela Salgueiro, Pedro Barquinha, Luís Pereira, Rodrigo Martins, Elvira Fortunato
CENIMAT/I3N, Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia (FCT) Universidade Nova de Lisboa (UNL) and CEMOP/UNINOVA, Campus de Caparica, 2829-516 Caparica, Portugal

11:30 **Effect of Film Thickness on Microstructure and Dielectric Properties of Ba0.5Sr0.5TiO3 Thin Films Prepared by Chemical Solution Deposition** — I.6. 4
Tanja Pecnik1,2, Sebastjan Glinšek3, Brigita Kmet1,4, Barbara Malic1,2,4
1Electronic Ceramics Department, Jožef Stefan Institute, Ljubljana, Sloveni; 2Jožef Stefan International Postgraduate School, Ljubljana, Slovenia; 3School of Engineering, Brown University, Providence, USA; 4Centre of Excellence SPACE-SI, Ljubljana, Slovenia

11:45 **Structure and properties of solution processed hafnium oxide gate dielectrics for their applications in high mobility ZnO based thin film transistors** — I.6. 5
M. Esro, D. Afouxenidis, G. Vourlias and G. Adamopoulos*
M. Esro; D. Afouxenidis Lancaster University, Engineering Department, Lancaster LA1 4YR, United Kingdom. G. Vourlias; Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece G. Adamopoulos; Lancaster University, Engineering Department, Lancaster LA1 4YR, United Kingdom.

12:00 **Chemically improved high performance Solution processed indium gallium zinc oxide thin-film transistors** — I.6. 6
Mohammed Benwadih*, Jan Chroboczek, Gerard Ghibaudo, Romain Coppard, Dominique Vuillaume.
CEA GRENOBLE IEMN-CNRS IMEP-LAHC

12:15 **Effect of Si on the electrical performance of Zn-Sn-O solution processed thin film transistors** — I.6. 7
Jun Young Choi, SangSig Kim,Sang Yeol Lee
Microdevice Engineering, College of Engineering, Korea University, Seoul, 136-701 Republic of Korea

12:30 **Lunch break**

Ferroelectric materials : Thomasz Riedl & Masahiro Yoshimura

14:00 **SYNTHESIS STRATEGIES IN SOLUTION FOR THE LOW TEMPERATURE PROCESSING OF COMPLEX OXIDE FERROELECTRIC THIN FILMS. OPPORTUNITIES OF FERROELECTRICS IN FLEXIBLE ELECTRONICS** — I.7. 1
M.L.Calzada,* I.Bretos,* R.Jiménez,* J.Ricote,* D.Perez-Mezcua,* A.J.Perez-Rivero,* N.Salazar** and R.Sirera***
*Instituto de Ciencia de Materiales de Madrid (ICMM). Consejo Superior de Investigaciones Científicas (CSIC). Cantoblanco. E-28049 Madrid (Spain) **Nanotec Electrónica S.L., Tres Cantos, E-28760 Madrid (Spain) ***Departamento de Química y Edafología, Facultad de Ciencias, Universidad de Navarra, E-31008 Pamplona, Navarra (Spain)

14:30 **Structure and dielectric properties of solution derived lead-free K0.5Na0.5NbO3 - SrTiO3 thin films** — I.7. 2
Alja Kupec , Andreja Eršte, Vid Bobnar, Barbara Malič
Jožef Stefan Institute, Ljubljana, Slovenia

14:45 **The effect of porosity on the functional properties of lead titanate thin films** — I.7. 3
Paula Ferreira,1 Alichandra Castro,1 Brian Rodriguez,2 Paula M. Vilarinho1
1Department of Materials and Ceramic Engineering, Centre for Research in Ceramics and Composite Materials, CICECO, University of Aveiro, Aveiro, Portugal 2Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Dublin, Ireland

15:00 **Chemical solution deposition of true single phase, room temperature multiferroic oxides** — I.7. 4
Lynette Keeney1, Tuhin Maity1, Michael Schmidt1, Andreas Amann1 ,2, Nitin Deepak1, Nikolay Petkov1, Saibal Roy1, Martyn E. Pemble1,3 and Roger W. Whatmore1,3,4
1Tyndall National Institute, University College Cork, Cork, Ireland; 2School of Mathematical Sciences, University College Cork, Cork, Ireland; 3Department of Chemistry, University College Cork, Cork, Ireland; 4Department of Materials, Royal School of Mines, Imperial College London, South Kensington Campus, London SW7 2AZ

15:30 **Synthesis of ferromagnetic and ferroelectric thin films over large areas by Polymer Assisted Deposition** **I.7. 5**
José Manuel VILA-FUNGUEIRIÑO, Beatriz RIVAS-MURIAS, Francisco RIVA-DULLA
Centro de Investigación en Química Biolóxica e Materiais Moleculares (CIQUS), Campus Vida, Universidade de Santiago de Compostela, 15782, Santiago de Compostela, Galicia, Spain

15:45 **Ferroelectric multilayer composite films based on the solid solution (Bi1/2Na1/2)TiO3-BaTiO3** **I.7. 6**
A. Pérez-Rivero, R. Jiménez, I. Bretos, M. García-Hernández, M.L. Calzada, J. Ricote
Instituto de Ciencia de Materiales de Madrid, CSIC. Cantoblanco, 28049 Madrid, Spain

16:00 **Coffee & tea**

Synthesis III : Marlies Van Bael

16:30 **Soft Processing of Advanced Ceramic Materials for Various Applications** **I.8. 1**
Masahiro YOSHIMURA
Promotion Center for Global Materials Research, Dept of Mater.,Sci. and Eng., National Cheng Kung University, Tainan,Taiwan: yoshimur@mail.ncku.edu.tw Prof. Emeritus. Tokyo Institute of Technology, Japan :yoshimura@msl.titech.ac.jp

17:00 **A general strategy for the synthesis of micelle-templated mesoporous metal carbonates and metal oxides** **I.8. 2**
Bjoern Eckhardt1; Erik Ortel1; Denis Bernsmeier1; Peter Strasser1; Ulla Vainio2; Joerg Polte1; Franziska Emmerling3; Ralph Kraehnert1
1Technical University of Berlin, Berlin, Germany, 2 Deutsches Elektronen-Synchrotron DESY, Germany, 3 BAM Federal Institute of Materials Research and Testing, Germany

17:15 **Building mesoporous and nanocomposite thin films from metal oxide nanocrystals** **I.8. 3**
Delia J. Milliron(a,b), Natacha Krins(a), Raffaella Buonsanti(a), Brett A. Helms(a), Anna Llordes(a)
(a) Lawrence Berkeley National Laboratory, 1 Cyclotron Road, Berkeley, California 94720 (USA) (b) Department of Chemical Engineering, The University of Texas at Austin, 200 E. Dean Keeton Street, Austin, Texas 78712 (USA)

17:45 **Nanostructured transparent electrodes - advanced material design for controlled enzyme immobilization** **I.8. 4**
Nina Heidary1, Anabel Molero1, Amandine Guiet1, Stefano Frasca2, Khoa Ly1, Tillmann Utesch1, Maria Mroginski1, Ingo Zebger1, Inez Weidinger1, Ulla Wollenberger2, Anna Fischer1*
1) Technical University Berlin, Strasse des 17. Juni 135, 10623 Berlin, Germany 2) University Potsdam, Karl-Liebknecht-Str. 24-25,14476 Golm, Germany

Poster session 2 : An Hardy

18:00 **Indium Tin Oxide Grown by Aerosol Assisted CVD and Incorporation of Ligand Stabilised Silicon Nanocrystals** **I.P2. 1**
Shane O'Brien* a, Keith Linehan b, Hugh Doyle b, Andrew Kingsley c, Chris Ashfield c, Bettina Frank c, Ling Xie d, Klaus Liefer d, Philippe Thony e, Simon Perraud f , Martyn E. Pemble a and Ian M. Povey a
a Advanced Materials and Surfaces Group, Tyndall National Institute-University College Cork, Lee Maltings, Cork, Ireland; b Nanotechnology Group, Tyndall National Institute-University College Cork, Lee Maltings, Cork, Ireland; c SAFC Hitech, Power Road, Bromborough, Wirral CH62 3QF, UK; d Department of Engineering Sciences, Uppsala University, Box 534, 75121, Uppsala, Sweden; e INES R.D.I , Laboratoire des Composants Photovoltaïques (CEA) Savoie TechnoLac- bât. Alouette 3, F-73370 Le Bourget du Lac , France; f CEA, LITEN, 17 Rue des Martyrs, 38054 Grenoble Cedex 9, France.

18:00 **Effect of Pt doping on the microstructural and optoelectronic properties of SnO2** **I.P2. 2**
A. Hajjaji1,a, W. Dimassi1, M. Ben Rabha1, M.Amlouk3, My Ali El Khakani2, B. Bessais1 and M. Gaidi1
1Laboratoire de Photovoltaïque, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisia 2Institut National de la Recherche Scientifique, INRS-Énergie, Matériaux et Télécommunications, 1650, Blvd. Lionel-Boulet, Varennes, QC, Canada J3X-1S2 3Unité de Physique des Dispositifs à Semi-conducteurs, Faculté des Sciences de Tunis, Campus Universitaire 2092 Tunis, Tunisia

18:00 **Electrical properties of graphene oxide on flexible substrate** **I.P2. 3**
Te-Hua Fang*, Shao-Hui Kang,Tao-Hsing Chen
Department of Mechanical Engineering, National Kaohsiung University of Applied Sciences, Kaohsiung 807, Taiwan

18:00 **Numerical Investigation of nanoscale SiGe DG MOSFET performance against the interfacial defects** **I.P2. 4**
T. Bentrcia1, F. Djeffal2, M. Meguellati2 and D. Arar2
1) Department of Physics, University of Batna,Batna 05000, Algeria. 2)LEA, Department of Electronics, University of Batna, Batna 05000, Algeria. E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

18:00 **The formation titanium dioxide thin films on transparent substrates and the study of physicochemical properties.** **I.P2. 5**
Stepanov A.Yu, Sotnikova L.V., Vladimirov A.A., Larichev T.A., Titov F.V., Dyagilev D.V.
Kemerovo State University

18:00 **AC conductivity and Electric modulus studies in Sm-doped Pb free Glasses** **I.P2. 6**
Jong-Ho Park
Department of Science Ecuation Chiju National University of Education

18:00 **Bias stress under illumination in solution processed zinc tin oxide (ZTO) thin-film transistors** **I.P2. 7**
Li-Chih Liu1, Jen-Sue Chen*1, and Jiann-Shing Jeng2
1National Cheng Kung University, Tainan 701, Taiwan; 2Department of Materials Science, National Tainan University, Tainan 700, Taiwan

18:00 **Opto- electronic properties of Orthorhombic NdMnO3 perovskite via modified Becke- Johnson potential.** **I.P2. 8**
B. Bouadjemi *, 1, S. Bentata1, T. Lantri1, A. Abbad2, S. Benotmane3 and B.Bouhafs3.
1Laboratory of Technology and Solid Properties, 2Signals and Systems laboratory, LSS, Faculty of Sciences and Technology, BP227 Abdelhamid Ibn Badis University, Mostaganem (27000) Algeria, 3 Laboratoire de Modélisation et de Simulation des Matériaux Univesity of sidi Belabbes, (22000) Algeria *E-mail:bbouadjemi@yahoo.fr

18:00 **The electronic, structure properties of the TiO2: a first principles investigation within the modified Becke–Johnson exchange potential plus LDA and GGA** **I.P2. 9**
S.Benatmane*1, B.Bouhafs1, B. Bouadjemi 2 and S. Bentata 2
1Department of physics Faculty of sciences Djillali Liabes University of Sidi Bel-Abbes, 22000, Algeria 2Laboratory of Technology and Solid Properties,Faculty of Sciences and Technology, BP227 Abdelhamid Ibn Badis University, Mostaganem (27000) Algeria Email*1: b.saadia@live.fr

18:00 **Ferromagnetism, magnetotransport and magnetocaloric properties of iron substituted manganese Pr0.67Sr0.33FexMn1-xO3 manganites oxide elaborated by ball milling method.** **I.P2. 10**
W. CHERIF, M. ELLOUZE, F. HALOUANI, M. Ben AMAR.
professor

18:00 **Chemical Solution Deposition of LiMn2O4 as cathode material for Li-ion Batteries** **I.P2. 11**
G. Maino1, N. Peys1,2, H. Damm1, Jan D'Haen3, A. Hardy1,2 and M. K. Van Bael1,2
1Hasselt University, Institute for Materials Research, Inorganic and Physical Chemistry, Diepenbeek, Belgium / 2IMEC vzw, Division IMOMEC, Diepenbeek, Belgium / 3Hasselt University,, Institute for Materials Research, Electrical and Physical Characterisation, Diepenbeek, Belgium

18:00 **Performance of solution processed Si-Zn-Sn-O Thin Film Transistors depending on Annealing Conditions.** **I.P2. 12**
Sang Min Han, Jun Young Choi, Sang Yeol Lee
Department of Semiconductor Engineering, Cheongju University, Cheongju, Chungbuk 360-764, Republic of Korea; Department of Electrical Engineering, Korea University, Seoul 136-701, Republic of Korea; Department of Semiconductor Engineering, Cheongju University, Cheongju, Chungbuk 360-764, Republic of Korea

18:00 **Interplay between nanostructure and functional electro-optical properties of multifunctional oxides** **I.P2. 13**
Maria M. Giangregorio, Graziella Malandrino, Sergio O. Battiato, Maria R. Catalano, Giovanni Bruno and Maria Losurdo
Institute of Inorganic Methodologies and of Plasmas, IMIP-CNR, via Orabona 4, 70126 Bari, Italy; Dipartimento Scienze Chimiche, Università di Catania, INSTM, UdR Catania, Viale Andrea Doria 6, I-95125 Catania, Italy

18:00 **Upconversion luminescence from ZrO2:Er,Yb nanoparticles produced by pulsed laser ablation in water** **I.P2. 14**
M.R.N. Soares, T. Holz, M.J. Soares, T. Monteiro, F.M. Costa
Departamento de Física e I3N, Universidade de Aveiro, 3810-193 Aveiro, Portugal

18:00 **Topotactic Fluorination of SrFeO2.5 and SrCoO2.5 Thin Films by Using Polyvinylidene Fluoride** **I.P2. 15**
Tsukasa Katayama, Akira Chikamatsu, Yasushi Hirose, Tomoteru Fukumura, Tetsuya Hasegawa
Department of Chemistry, The University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan; Department of Chemistry, The University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan CREST, Japan Science and Technology Agency (JST), Bunkyo-ku, Tokyo 113-0033, Japan; Department of Chemistry, The University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan CREST, Japan Science and Technology Agency (JST), Bunkyo-ku, Tokyo 113-0033, Japan Kanagawa Academy of Science and Technology (KAST), Kawasaki, Kanagawa 213-0012, Japan; Department of Chemistry, The University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan CREST, Japan Science and Technology Agency (JST), Bunkyo-ku, Tokyo 113-0033, Japan; Department of Chemistry, The University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan CREST, Japan Science and Technology Agency (JST), Bunkyo-ku, Tokyo 113-0033, Japan Kanagawa Academy of Science and Technology (KAST), Kawasaki, Kanagawa 213-0012, Japan

18:00 **Formation of a dipole nitride film on InP: toward new MISFET.** **I.P2. 16**
C.Njel, D.Aureau, A-M Gonçalves*, A.Etcheberry
Institut Lavoisier de Versailles ILV - UMR- CNRS 8180 (http://www.ilv.uvsq.fr) UVSQ, 45, Avenue des Etats-Unis 78000 Versailles Cedex- France. *Fax/Tel: + 33 (0) 1 39 25 44 19/18 - E-mail: anne-marie.goncalves@uvsq.fr

18:00 **Influence of annealing condition on electrical property of copper electrode: Closes to improve conductivity** **I.P2. 17**
Dal Sung Kong 1, Gill Sang Han 2, Min Jeong Kim 3, Hyunjung Shin 1 and Hyun Suk Jung 2
1 Department of Energy Science, Sungkyunkwan University, 2066 Seobu-ro, Janan-gu, Suwon-si, Gyeongi-do 440-746, Korea;2 School of Advanced Materials Science and Engineering, Sungkyunkwan University, 2066 Seobu-ro, Janan-gu, Suwon-si, Gyeongi-do 440-746, Korea;3 Department of Materials Science and Engineering, Seoul National University, Gwanak-ro, Gwanak-gu, Seoul 151-742, Korea

18:00 **Fabrication and electrochemical properties of carbon-coated LiMnPO4 nanoparticles for lithium-ion battery** **I.P2. 18**
Shengnan Huang1, Zhaolong Li1, Shanshan Jiang1, Shan Lu1, Yue Yu1, Quanyao Zhu1,*, Galina S. Zakharova2
1 State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, School of Materials Science and Engineering, Wuhan University of Technology, Luoshi Road 122, Wuhan 430070, P. R. China; 2 Institute of Solid State Chemistry of the Ural Branch, Russian Academy of Science, Pervomaiskaya ul. 91, Yekaterinburg, 620219, Russia

18:00 **Effect of Nd substitution on the physical properties of multiferroic BiFeO3** **I.P2. 19**
T. Slimani Tlemçani1, M. Taibi2, T. El Bahraoui1, A. Belayachi1 and M. Abd-Lefdil1
1University of Mohammed V-Agdal, Materials Physics Laboratory, P. B. 1014, Rabat, Morocco; 2Laboratoire de Physico-Chimie des Matériaux Inorganiques et Organiques, Ecole Normale Supérieure Rabat-Morocco.

18:00 **Preparation Technique of Thorium Films by Electrochemical Deposition for Nuclear Optical Frequency Standard Based on Thorium-229** **I.P2. 20**
P.V. Borisyuk 2, Y.Y. Lebedinskii 1,2, V.I. Troyan 2
1-Moscow Institute of Physics and Technology (MIPT); 2-National Research Nuclear University (MEPhI)

18:00 **An insight into the epitaxial nanostructures of NiO and CeO2 thin film dielectrics for AlGaN/GaN heterostructures** **I.P2. 21**
Emanuela Schilirò1,2, Sergio Battiato2, Graziella Malandrino2, Patrick Fiorenza1, Fabrizio Roccaforte1, Raffaella Lo Nigro1
1Istituto per la Microelettronica e Microsistemi Consiglio Nazionale delle Ricerche - (CNR-IMM), Strada VIII 5, 95121 Catania, Italy 2Dipartimento di Scienze Chimiche, Università degli Studi di Catania, and INSTM udr Catania, viale Andrea Doria 6, 95125, Catania, Italy

18:00 **Growth of A2WO6 on SrTiO3 and LaAlO3 Substrates by Pulsed Laser Deposition: XRD, TEM, Raman and AFM Investigations** **I.P2. 22**
Thomas Carlier, Marie-Helene Chambrier, Sonia Estrade, Anthony Ferri, Jean-François Blach, Belkacem Meziane, Francesca Peiro, Desfeux Rachel
Universite Lille Nord de France, F-59000 Lille, France; CNRS, UMR 8181, F-59650 Villeneuve d'Ascq, France; Universite d'Artois, UCCS, F-62300 Lens, France; LENS,MIND-In2UB, Electronics Department, Universitat de Barcelona (UB),Marti i Franques 1, Barcelona 08028, Spain

18:00 **Surface Passivation Techniques of ZnO Nanorods for Enhanced Performance of Piezoelectric Energy Harvesters** **I.P2. 23**
Nimra Jalali, Joe Briscoe, Yan Zhi Tan, Peter Woolliams, Mark Stewart, Paul M. Weaver, Markys Cain and Steve Dunn.
Nimra Jalali; Joe Briscoe; Steve Dunn from Queen Mary University of London, United Kingdom. Yan Zhi Tan from Nanyang Polytechnic, Singapore. Peter Woolliams; Mark Stewart; Paul M. Weaver; Markys Cain from National Physical Laboratory, United Kingdom.

18:00 **Inkjet printing of Ta2O5-based dielectric patterns from solution** **I.P2. 24**
Aleksander Matavž, Raluca C. Frunză, Barbara Malič
Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia Jožef Stefan International Postgraduate School, Jamova cesta 39, 1000 Ljubljana, Slovenia; Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia Jožef Stefan International Postgraduate School, Jamova cesta 39, 1000 Ljubljana, Slovenia; Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia;

18:00 **Elaboration by sol-gel and characterizations of ferroelectric Ba0.85Sr0.15TiO3 thin films for sensor realization** **I.P2. 25**
Aymen SELMI1, Manuel MASCOT2, Fathi JOMNI1, Jean-Claude CARRU 2, Béchir YANGUI 1
1 Laboratory for Materials, Organization and Properties (LMOP), University of Tunis El Manar 2092 TUNIS, TUNISIA 2 Unité de Dynamique et Structure des Matériaux Moléculaires (UDSMM), Centre de la Mi-Voix, Université du Littoral-Côte d'Opale – 62228 - Calais, FRANCE.

18:00 **Synthesis and characterization of Na0.5Bi(0.5-x) CexTiO3powders: a lead-free piezoelectric material** **I.P2. 26**
S. Supriya, Antonio J. Dos santos-García, F. Fernández-Martinez and C. Colon
Industrial Chemistry and PolymersDepartment, ETSIDI, Polytechnic University of Madrid (UPM), Madrid-28012, Spain.

18:00 **SILICOPHOSPHATE FILMS DOPED WITH ORGANIC COMPOUNDS FOR NONLINEAR OPTICAL APPLICATIONS** **I.P2. 27**
I.C. Vasiliu1, I. Ionita2, A. Matei3 , M.Elisa1, R. Iordanescu1, I. Feraru1, A. Emandi1
1INOE 2000 - National Institute for Optoelectronics, 409 Atomistilor Str., Magurele RO-077125, Bucharest, Romania, icvasiliu@inoe.inoe.ro 2UB - University of Bucharest, 405 Atomistilor Str., Magurele RO-077125, Bucharest, Romania 3INFLPR - National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor Street, Magurele, RO-077125 Bucharest, Romania

18:00 **Spontaneous Electrochemical Deposition of Core-Shell Cu-Ni(OH)2 Nanobelts as High-Performance Electrodes for Pseudocapacitors** **I.P2. 28**
I-Chun Chang1,Ting-Ting Chen1, Yin-Jie Pan1, Yu-Shu Lin1, Hsin-Tien Chiu2 and Chi-Young Lee1*
1 Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan, R. O. C. 2 Department of Applied Chemistry, National Chiao Tung University, Hsinchu 30010, Taiwan, R.O.C.

18:00 **Solution-derived Ta2O5-based dielectric thin films for transparent electronic devices** **I.P2. 29**
Raluca C. Frunză, Pedro Barquinha, Elena Tchernychova, Luís Pereira, Elvira Fortunato, Rodrigo Martins, Barbara Malič
Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia Jožef Stefan International Postgraduate School, Jamova cesta 39, 1000 Ljubljana, Slovenia; CENIMAT-I3N, Departamento de Ciência dos Materials and CEMOP/UNINOVA, Faculdade de Ciências e Technologia, FCT, Universidade Novade Lisboa, Campus da Caparica, 2829-516 Caparica, Portugal; Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia; CENIMAT-I3N, Departamento de Ciência dos Materials and CEMOP/UNINOVA, Faculdade de Ciências e Technologia, FCT, Universidade Novade Lisboa, Campus da Caparica, 2829-516 Caparica, Portugal; CENIMAT-I3N, Departamento de Ciência dos Materials and CEMOP/UNINOVA, Faculdade de Ciências e Technologia, FCT, Universidade Novade Lisboa, Campus da Caparica, 2829-516 Caparica, Portugal; CENIMAT-I3N, Departamento de Ciência dos Materials and CEMOP/UNINOVA, Faculdade de Ciências e Technologia, FCT, Universidade Novade Lisboa, Campus da Caparica, 2829-516 Caparica, Portugal; Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia;

18:00 **Structural characterization and ferroelectric properties in metastable Ln2Ti2O7 (Ln=Sm, Eu, Gd) thin films** **I.P2. 30**
A. Bayart,1,2 S. Saitzek,1,2 A. Ferri,1,2 M. Huvé,1,3 P. Roussel,1,3 R. Desfeux,1,2
1 Univ Lille Nord de France, F-59000 Lille, France 2 UArtois, UCCS, F-62300 Lens, France CNRS, UMR 8181, F-59650 Villeneuve d'Ascq, France 3 ENSCL, UCCS, F-59652 Villeneuve d'Ascq, France CNRS, UMR 8181, F-59650 Villeneuve d'Ascq, France

18:00 **Transparent conducting oxides (TCOs) based on Nb-doped and V-doped TiO2 thin films** **I.P2. 31**
M. Stoica, M. Nicolescu, L. Predoana, S. Preda, M. Anastasescu, M. Duta, M. Gartner, M. Zaharescu
"Ilie Murgulescu" Institute of Physical Chemistry, Romanian Academy

18:00 **Investigations of the structural, electronic and magnetic properties of Fe2-xTixO3/Fe2O3 thin films grown on Al2O3 (0001)** **I.P2. 32**
Teresa Dennenwaldt1, Maike Lübbe2, Michael Winklhofer2, Alexander Müller1, Markus Döblinger1, Hasan Sadat Nabi2, Maria Gandman3, Tzipi Cohen-Hyams4, Wayne D. Kaplan4, Wolfgang Moritz2, Rossitza Pentcheva2 and Christina Scheu1
1Department of Chemistry and Center for NanoScience, Ludwig-Maximilians-Universität München, Butenandtstr. 5-13, 81377 Munich, Germany; 2Department of Earth and Environmental Sciences and Center for Nanoscience, Ludwig-Maximilians-Universität München, Theresienstr. 41, 80333 Munich, Germany; 3Department of Materials Science and Engineering, 210 Hearst Memorial Mining Building, University of California, Berkeley, USA; 4Department of Materials Science and Engineering, Technion – Israel Institute of Technology, Haifa 32000, Israel

18:00 **Enhanced holes mobility in AlO and pentacene-based OTFTs due to the passivation of the oxide surface using PVP** **I.P2. 33**
A. Sleiman, M. Kreyenborg-Nichols, T. Alshahrani*, D. Ashall, P. W. Sayers and M. F. Mabrook
Bangor University

18:00 **Temperature-dependent transfer characteristics of solution-processed indium gallium and indium yttrium mixed oxide thin-film transistors** **I.P2. 34**
Felix Jaehnike, Duy Vu Pham, Alexey Merkulov, Corinna Weber, Claudia Bock, Ulrich Kunze
Evonik Industries AG Electronic Solutions, D-45772 Marl; Ruhr-Universität Bochum, Werkstoffe und Nanoelektronik, D-44780 Bochum

18:00 **Hydrothermal synthesis of GIZO nanoparticles for solution-processed electrolyte-gated transistors** **I.P2. 35**
L. Santos, P. Barquinha, R. Branquinho, D. Salgueiro, L. Pereira, R. Martins, E. Fortunato
CENIMAT/I3N, Departamento de Ciência de Materiais, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa and CEMOP/UNINOVA, Campus da Caparica, 2829-516 Caparica - Portugal

18:00 **Post-growth annealing of GaAs/Ge layers studied by photoreflectance spectroscopy** **I.P2. 36**
S. Soltani, I. Zaied, Z. Chine, A. Rebey, B. El Jani
Unité de Recherche sur les Hétéroépitaxies et Applications, Faculté des Sciences de Monastir, 5019 Monastir, Tunisie

18:00 **Characterization of Conmensurated Grown of Au on single phase Fe3O4 thin layers** **I.P2. 37**
A. Munoz-Noval, J. Rubio-Zuazo, E. Salas, G.R. Castro
Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Cientificas (ICMM-CSIC), Madrid, Spain and Spanish CRG (SpLine), European Synchrotron Radiation Facility, Grenoble, France

18:00 **Fabrication and characterization of Spinel Li4Ti5O12 Thin-Films for Lithium-ion Micro-batteries** **I.P2. 38**
Nouha Labyedh(a,b), Brecht Put(a,c), Sven Gielis(d,e), Abdel-Aziz El Mel(a,f), Marlies Van Bael(d,e), An Hardy(d,e), Mekki Ksouri(b), Philippe M.Vereecken(a,f)
(a)imec, Kapeldreef 75, B-3001 Heverlee, Belgium; (b)Electrical Engineering department, ENIT, Tunis EL Manar University; (c)Department of Physics, KULeuven, B-3001 Leuven, Belgium; (d)Hasselt University, Institute for Materials Research, Inorganic and Physical Chemistry, Diepenbeek, Belgium; (e)IMEC vzw, Division IMOMEC, Diepenbeek, Belgium; (f)Center for Surface Chemistry and Catalysis, Katholieke Universiteit Leuven, Kasteelpark Arenberg 23, bus 2461, Leuven, B-3001, Belgium

18:00 **Nanostructured films of metal oxides for fast lithium insertion** **I.P2. 39**
Peter Zehetmaier, Ksenia Fominykh, Johann M. Feckl, Kristina Peters, Dina Fattakhova-Rohlfing
Department of Chemistry and Center for NanoScience (CeNS), Ludwig-Maximilians-University (LMU), Butenandtstr. 5-13 (E), 81377 Munich, Germany (*email: dina.fattakhova@cup.uni-muenchen.de)

18:00 **Structural and magnetic properties of MFe2O4 (M=Ni, Co) polycrystalline thin films grown via sol-gel processing** **I.P2. 40**
E.Venkata Ramana, M.P.F.Graça, M.A.Valente
I3N-Aveiro, Department of Physics, University of Aveiro, Aveiro 3810 193, Portugal

18:00 **Low cost synthesis of a single phase YAG:Dy phosphor for white emission** **I.P2. 41**
P. Forte, J. F. C. Carreira, M. R. N. Soares, F. M. Costa, T. Monteiro, L. Rino
Departamento de F?sica e i3N, Universidade de Aveiro, Aveiro, Portugal

18:00 **Passivation of defects related to the Atomic Layer Deposition of Al2O3 on III-V (110) surfaces** **I.P2. 42**
Tyler Kent, Mary Edmonds, Evgueni Chagarov, Ravi Droopad, Andrew C. Kummel
University of California San Diego; University of California San Diego; University of California San Diego; Texas State University; University of California San Diego

18:00 **Low sheet resistivity, high transparency SnOx-based transparent conductive oxides for their applications in OLEDs** **I.P2. 43**
D. Afouxenidis, M. Esro, G. Vourlias, W. P. Gillin and G. Adamopoulos*
M. Esro; D. Afouxenidis Lancaster University, Engineering Department, Lancaster LA1 4YR, United Kingdom. G. Vourlias; Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece W.P. Gillin; Physics Department, Queen Mary, University of London, Mile End Road, E1 4NS London, United Kingdom G. Adamopoulos; Lancaster University, Engineering Department, Lancaster LA1 4YR, United Kingdom.

18:00 **Half-metal magnetic nanopatricles coated with semiconductive materials** **I.P2. 44**
O. Pana, M. L. Soran, S. Gutoiu, M. Stefan, C. Leostean, S. Macavei
National Institute for Research and Development of Isotopic and Molecular Technologies, 65-103 Donath, St. PO Box 700, 400293 Cluj-Napoca, Romania

18:00 **Aqueous chemical solution deposition of (LixMg1-2xAlx)Al2O4 films as possible spinel electrolyte in solid-state Li-ion batteries** **I.P2. 45**
Sven Gielis 1, 2, Brecht Put 3, 4, Nick Peys 1, 2, Thomas Vranken 1, 2, Fabio Rosciano 5, Philippe M. Vereecken 3, 6, An Hardy 1, 2, Marlies K. Van Bael 1, 2
1 Hasselt University, Institute for Materials Research, Inorganic and Physical Chemistry, Diepenbeek, Belgium 2 imec, division imomec, Diepenbeek, Belgium 3 imec, Leuven, Belgium 4 Department of Physics, KU Leuven, Leuven, Belgium 5 Toyota Motor Europe, Advanced Technology 1, Zaventem, Belgium 6 KU Leuven, Centre for Surface Chemistry and Catalysis, Leuven, Belgium

18:00 **Optical properties of TiO2 Thin films prepared by Sol Gel method** **I.P2. 46**
Z.ESSALHI 1, B.HARTITI 1, A. LFAKIR 1, M. SIADAT 2 and P. THEVENIN 3
1 MAC& PM Laboratory, ANEPMAER Group, Department of Physics, FSTM, University Hassan II Mohammedia Casablanca ,Mohammedia, Morocco; 2 LCOMS Laboratory, Universit? of Lorraine; 3 LMOPS Laboratory, Universit? of Lorraine, Metz, France

18:00 **Solution processed aluminium titanate dielectrics for their applications in high mobility ZnO based thin film transistors** **I.P2. 47**
D. Afouxenidis, M. Esro, G. Vourlias and G. Adamopoulos*
D. Afouxenidis; M. Esro; Lancaster University, Engineering Department, Lancaster LA1 4YR, United Kingdom. G. Vourlias; Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece G. Adamopoulos; Lancaster University, Engineering Department, Lancaster LA1 4YR, United Kingdom

18:00 **Information support of the multiscale computational scheme of multilayer semiconductor nanostructures** **I.P2. 48**
Abgarian K. K.,Marasanov A.M., Sechenykh P. A.
Institution of Russian Academy of Sciences Dorodnicyn Computing Centre of RAS

18:00 **Physical properties of undoped and Li-doped NiO thin films prepared by sol–gel spin coating method** **I.P2. 49**
M. Jlassi 1,I. Sta 1, M. Hajji 12, M.F.Boujmil 1 , M. Kompitsas 3, H. Ezzaouia 1. Laboratoire de Photovoltaïque, Centre de Recherche et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisie. 2 Institut Supérieur d'Electronique et de Communication de Sfax, Université de Sfax, BP 868, 3018 Sfax, Tunisie. 3 National Hellenic Research Foundation, Theoretical and Physical Chemistry Institute, 48, Vasileos, Konstantinou Ave., 11635 Athens, Greece.

18:00 **Ferroelectric properties of Barium Titanate nanofibers** **I.P2. 50**
Pedro Sá (1), José Barbosa (1), Igor Bdikin (2), Bernardo Almeida (1), Anabela G. Rolo (1), Andrei Kholkin (1), Dmitry Isakov (1)
(1) University of Minho, Center of Physics, Campus de Gualtar, 4710-059 Braga, Portugal; (2) Department of Mechanical Engineering & TEMA, University of Aveiro, 3810-193 Aveiro, Portugal; (3) (3) University of Aveiro, Center for Research in Ceramic and Composite Materials (CICECO) & Department of Ceramics and Glass Engineering 3810-193 Aveiro, Portugal; bernardo@fisica.uminho.pt; dmitry@fisica.uminho.pt

18:00 **Development and investigation of thin film protective coatings for the beryllium windows and lenses used in X-Ray sources.** **I.P2. 51**
O.Yurkevich, K. Maksimova, A. Goikhman
Immanuel Kant Baltic Federal University, Kaliningrad, Russia

18:00 **Hybrid organic-inorganic nanocomposites for terahertz applications** **I.P2. 52**
D. Hourlier1, S. Venkatachalam1, J.C. Boyaval1, G. Ducournau1, Y. Blum2, J. F. Lampin1
1- Institut d'Electronique, de Micro et Nanotechnologies, CNRS-UMR8520, Avenue Henri Poincaré BP 60069, F-59652 Villeneuve d'Ascq Cedex, France 2- Chemical Science and Technology Laboratory, SRI International, Menlo Park, CA 94025, USA

18:00 **Investigations of the structural, electronic and magnetic properties of Fe2-xTixO3/Fe2O3 thin films grown on Al2O3 (0001)** **I.P2. 53**
Teresa Dennenwaldt(1), Maike Lübbe(2), Michael Winklhofer(2), Alexander Müller(1), Markus Döblinger(1), Hasan Sadat Nabi(2), Maria Gandman(3), Tzipi Cohen-Hyams(4), Wayne D. Kaplan(4), Wolfgang Moritz(2), Rossitza Pentcheva(2) and Christina Scheu(1)
(1) Department of Chemistry and Center for NanoScience, Ludwig-Maximilians-Universität München, Butenandtstr. 5-13, 81377 Munich, Germany (2) Department of Earth and Environmental Sciences and Center for Nanoscience, Ludwig-Maximilians-Universität München, Theresienstr. 41, 80333 Munich, Germany (3) Department of Materials Science and Engineering, 210 Hearst Memorial Mining Building, University of California, Berkeley, USA (4) Department of Materials Science and Engineering, Technion – Israel Institute of Technology, Haifa 32000, Israel

28 May 2014

Thin films : Johan ten Elshof

08:30 **Composition and nanostructure engineering of solution derived oxide thin films for electrochemical devices** — I.9. 1
Theodor Schneller
RWTH Aachen University, Institut für Werkstoffe der Elektrotechnik II

09:00 **Biotemplated porous titania scaffolds with incorporated pre-synthesized titania nanocrystals** — I.9. 2
Alesja Ivanova (1), Liana Movsesyan (2), Pirmin Ganter (1), Maria Fravventura (3), Jiri Rathousky (4), Dina Fattakhova-Rohlfing (1) and Thomas Bein (1)*
(1) Department of Chemistry and Center for NanoScience (CeNS), University of Munich (LMU); (2) Darmstadt University of Technology; (3) Delft University of Technology, (4) J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic; *email: bein@lmu.de

09:15 **Atomic Layer Deposition in comparison with solution processing – from differences to similarities and combinations** — I.9. 3
Mikko Ritala
Department of Chemistry, University of Helsinki, Finland

09:45 **Relationship between Nanocrystallite Size and IR Reflectivity** — I.9. 4
Tim Kemmitt, John Kennedy, Fang Fang, Campbell McNicoll
Callaghan Innovation, PO Box 31-310, Lower Hutt, New Zealand MacDiarmid Institute for Advanced Materials and Nanotechnology, PO Box 600, Wellington NZ GNS Science, PO Box 31-312, Lower Hutt, New Zealand University of Canterbury, Private Bag 4800, Christchurch 8140, New Zealand.

10:00 **Coffee & tea**

Energy materials : Mikko Ritala & Theodor Schneller

10:30 **From Molecules to Functional Nanostructures for Energy and Health Applications** — I.10. 1
Sanjay Mathur*, Thomas Fischer, Ralf Mueller, Raquel Fiz and Laura Wortmann
Institute of Inorganic Chemistry, Chair, Inorganic and Materials Chemistry, University of Cologne, Greinstrasse 6, D-50939 Cologne, Germany E-mail: sanjay.mathur@uni-koeln.de

11:00 **Hydrothermal - Electrochemical synthesis of metal oxides for energy applications** — I.10. 2
Ugur Unal
Koc University, Chemistry Department, Surface Science and Technology Center Rumelifeneri yolu Sariyer 34450 Istanbul Turkey

11:15 **Oxide ion and hole conductivity in Pr2NiO4 dispersed with Au nano particle** — I.10. 3
Tatsumi Ishihara, Junji Hyodo, and Shintaro Ida
International Instituet for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Fukuoka, Japan; Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Fukuoka, Japan

11:30 **Thin film synthesis of Li3xLa(2/3)-xTiO3 (LLT) solid electrolyte for all-solid-state lithium-ion batteries** — I.10. 4
E.J. van den Ham, N. Peys, C. De Dobbelaere, H. Damm, J. D'Haen*, F. Mattelaer**, C. Detavernier**, A. Hardy and M.K. Van Bael
Hasselt University, Institute for Materials Research, Inorganic and Physical Chemistry and imec, division imomec, Agoralaan building D, 3590 Diepenbeek, Belgium; **Hasselt University, Institute for Materials Research, Material Physics and imec, division imomec, Agoralaan building D, 3590 Diepenbeek, Belgium. **Ghent University, Department of Solid State Sciences, Krijgslaan 281, 9000 Ghent, Belgium.

11:45 **Mesoporous thin films by soft templating: direct synthesis of LiV2O5 vs. electrochemical lithium intercalation in V2O5** — I.10. 5
Sebastien Caes, Jose Carlos Arrebola, Natacha Krins, Benedicte Vertruyen
LCIS-Greenmat, Department of Chemistry B6, 3 Allée de la Chimie, University of Liège, B-4000 Liège, Belgium

12:00 **Electrodeposited Manganese dioxide for 3D Lithium-ion Battery Applications** — I.10. 6
Yafa Zargouni, Stella Deheryan, Aleksandar Radisic, A. Etman, D. J. Cott, Khaled Alouani, Cedric Huyghebaert, Philippe M. Vereecken
CENA, Riyadh, Saudi Arabia; imec, Kapeldreef 75, Leuven, Belgium; Chemistry Department, Tunis El-Manar University, Tunis, Tunisia; Centre for Surface Chemistry and Catalysis, Leuven University, Leuven, Belgium; Chemistry Department, Alexandria University, Alexandria, Egypt

12:15 **Solution-derived porous GeOx as high performance anodes for Li-ion batteries** — I.10. 7
Wei-Qiang Han*, Xiaoliang Wang, Huajun Tian, Feng-Xia Xin
Ningbo Institute of Materials Technology & Engineering (NIMTE), Chinese Academy of Sciences, Ningbo, 315201, P. R. China e-mail: hanweiqiang@nimte.ac.cn

12:30 **Lunch break**

Printing & patterning I : Sanjay Mathur

14:00 **Complex Oxide Nanoparticles and Thin Films by Chemical Solution Processing and Ink Jet Deposition** — I.11. 1
Isabel Van Driessche
Ghent University, Dep. Of Inorganic and Physical Chemistry, SCRiPTS, Krijgslaan 281, 9000 Gent, Belgium, Isabel.vandriessche@UGent.be

14:30 **Inkjet printing IGZO Thin-Film Transistors: toward annealing temperature decrease** — I.11. 2
Clément Talagrand1, Maxime Veilly1, Xavier Boddaert1 and Philippe Collot2
1 Ecole Mines de Saint-Etienne CMP-GC, Dept PS2 .Gardanne, 880 route de Mimet, France; 2 Ecole Nationale Supérieure d'Arts et Métiers ParisTech, Aix-En-Provence, 2 cours des Arts et Métiers, France

14:45 **Nano-Rheology Printing (nRP): A Direct Printing Technique for Well-Defined Metal Oxide Patterns and Devices** — I.11. 3
Tatsuya Shimoda [1,2,3,*], Toshihiko Kaneda [1], Daisuke Hirose [3], Takaaki Miyasako [1], Phan Trong Tue [1,2], Yoshitaka Murakami [2], Shinji Kohara [3,4], Jinwang Li [1,2], Tadaoki Mitani [1,2], Eisuke Tokumitsu [1,2,3] & Shogo Nobukawa [3]
[1] Japan Science and Technology Agency (JST), ERATO, Shimoda Nano-Liquid Process Project, 2-5-3 Asahidai, Nomi, Ishikawa 923-1211, Japan; [2] Green Devices Research Center, Japan Advanced Institute of Science and Technology (JAIST), 2-13 Asahidai, Nomi, Ishikawa 923-1211, Japan; [3] School of Materials Science, Japan Advanced Institute of Science and Technology, 1-1 Asahidai, Nomi, Ishikawa 923-1292, Japan; [4] SPring-8/Japan Synchrotron Radiation Research Institute (JASRI), 1-1-1 Kouto, Sayo-cho, Sayo-gun, Hyogo 679-5198, Japan. * Email: tshimoda@jaist.ac.jp

15:15 **Structural and Electrical Properties of Flexible Ink-jet Printed HfO2-Based MIM Capacitors after Plasma Treatment** — I.11. 4
G. Vescio, J. López-Vidrier, O. Casals, S. Hernández, J. D. Prades, B. Garrido, A. Cirera
MIND/IN2UB Electronics Department, Universitat de Barcelona, c/ Martí i Franquès 1, Planta 2, E–08028 Barcelona, Spain

15:30 **Coffee & tea**

29 May 2014

Nanoparticles : Johan ten Elshof

08:30 **Synthesis and applications of multifunctional nanomaterials** **I.12. 1**
Stanislaus S. Wong (1,2)
1. Department of Chemistry, State University of New York at Stony Brook, Stony Brook, NY 11794-3400; and 2. Condensed Matter Physics and Materials Sciences Department, Brookhaven National Laboratory, Building 480, Upton, NY 11973

09:00 **Shape-tailored metal nano-oxides for novel multifunctional photoelectrochemical devices** **I.12. 2**
Riccardo Scarfiello (a), Luisa De Marco (a), Michele Manca (a)*, Roberto Giannuzzi (a), Maria Belviso (b), Giuseppe Gigli (b) and Davide P. Cozzoli (b)
(a) Center for Biomolecular Nanotechnologies, Fondazione Istituto Italiano di Tecnologia - Energy Platform Via Barsanti, 73010 Arnesano (Lecce), Italy (b) National Nanotechnology Laboratory, CNR Istituto Nanoscienze, c/o Distretto Tecnologico, Via Arnesano km 5, 73100 Lecce, Italy

09:15 **Controlled Iron oxide nanoparticles size trough a non aqueous sol gel route and microwave energy towards highly sensitive T1 and T2 MRI contrast agent** **I.12. 3**
J. Bolley, M. Boucher; S. Meriaux;N. Pinna, L. Motte, Y. Lalatonne
a. CSPBAT (UMR7244), Universit? Paris 13 b. Neurospin, CEA c. Humboldt-Universit?, Berlin Institut de Chimie d. H?pital Avicenne, Service de M?decine Nucl?aire

09:30 **Monitoring the insertion of Co(II) ions into maghemite nanoparticles by XAFS and magnetization measurements** **I.12. 4**
C. Vichery, I. Maurin, O. Proux, I. Kieffer, J.-L. Hazemann, R. Cortes, J.-P. Boilot, T. Gacoin
C. Vichery : EMPA, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Mechanics of Materials and Nanostructures, Feuerwerkerstrasse 39, CH-3602, Thun, Switzerland ; C. Vichery, I. Maurin, R. Cortes, J.-P. Boilot and T. Gacoin : Physique de la Matiere Condensee, UMR7643, CNRS-Ecole Polytechnique, 91128 Palaiseau, France ; O. Proux, I. Kieffer and J.-L. Hazemann : BM30B/FAME beamline, European Radiation Synchrotron Facility, 38043 Grenoble cedex 9, France ; O. Proux and I. Kieffer : Observatoire des Sciences de l'Univers de Grenoble, UMS 832, CNRS-Universite Joseph Fourier, 38041 Grenoble cedex 9, France ; J.-L. Hazemann : Institut Neel, UPR 2940, CNRS-Universite Joseph Fourier, 25 avenue des Martyrs, BP 166, 38042 Grenoble cedex 9, France

09:45 **Self-Assembly of Organic-Inorganic Hybrid Nanocrystals in Highly Ordered Nanocrystalline Monolayer** **I.12. 5**
Daisuke Hojo, Takanari Togashi, Tadafumi Adschiri
Advanced Institute for Materials Research, Tohoku University; Department of Material and Biological Chemistry, Yamagata University; Advanced Institute for Materials Research, Tohoku University

10:00 **Coffee & tea**

Hybrids & nanosheets : Lynette Keeney & Lourdes Calzada

10:30 **Synthesis and Assembly of inorganic-nanocellulose hybrids** **I.13. 1**
Lennart Bergstrom
Department of materials and environmental chemistry Stockholm University, Sweden

11:00 **Switching wettability of cotton fabrics by combining deposition of diamond-like carbon films and ZnO nanorods** **I.13. 2**
Barbara Cortese, Daniela Caschera, Roberta G. Toro, Mariano Biasiucci, Gabriel M. Ingo, Giuseppe Gigli
B. Cortese National Nanotechnology Laboratory-Institute Nanoscience-CNR (NNL-CNR NANO) via Arnesano73100 Lecce Italy c/oDepartment of Physics La Sapienza University P. le A. Moro 2 00185 Rome Italy D. Caschera, R.G. Toro, G. M. Ingo Istituto per lo Studio dei Materiali Nanostrutturati Consiglio Nazionale delle Ricerche Via Salaria km.29.300, 00015 Monterotondo Stazione Rome Italy M. Biasiucci Center for Life Nano Science@Sapienza Istituto Italiano di Tecnologia Viale Regina Elena 291 00161 Rome Italy c/o Department of Physics La Sapienza University P. le A. Moro 2 00185 Rome Italy G. Gigli National Nanotechnology Laboratory-Institute Nanoscience-CNR (NNL-CNR NANO) via Arnesano, 73100 Lecce Italy c/o Department of Mathematics and Physics University of Salento Lecce Italy c/o Center for Biomolecular Nanotechnologies (CNB) Italian Institute of Technology (IIT) Lecce Italy

11:15 **Functional nanostructures and nanofilms based on layered transition metal hydroxides** **I.13. 3**
Renzhi Ma, Takayoshi Sasaki
International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS) 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan

11:45 **New positively-charged oxide nanosheets from exfoliation of 14-H Ba7Co6BrO17 and 18R-Ba6Co5BrO14 oxybromides in various solvents.** **I.13. 4**
Blázquez Alcover I., Huvé M., Mentré O., Daviero-Minaud S.
Univ. Lille Nord de France F–59000 Lille, CNRS UMR 8181–Unité de Catalyse et de Chimie du Solide – UCCS

12:00 **Patterning the Orientation of Perovskite Thin Films by Epitaxy on Nanosheets** **I.13. 5**
M. Nijland, S. Thomas*, N. Banerjee, D.H.A. Blank, G. Rijnders, J. Xia*, G. Koster, and J.E. ten Elshof
MESA+ Institute for Nanotechnology, P.O. Box 217, 7500 AE, Enschede, the Netherlands; * University of California, 4129 Frederick Reines Hall, Irvine, CA 92697-4575

12:15 **Size dependent emission of ZnO nanosheets** **I.13. 6**
T. V. Torchynska1* and B. El Filali2,
1ESFM-National Polytechnic Institute, Mexico D.F. 07738, Mexico. 2UPIITA-National Polytechnic Institute, Mexico D.F.07738, Mexico.

12:30 **Lunch break**

Japan in motion : Stanislaus Wong & Narcis Mestres

14:00 **Low temperature reactions of functional solids** **I.14. 1**
Hiroshi Kageyama
iCeMS and Graduate School of Engineering, Kyoto University

14:30 **Solution-based 2D Nanoarchitectonics with Oxide Nanosheets and Function Design** **I.14. 2**
Takayoshi Sasaki; Yasuo Ebina; Minoru Osada; Renzhi Ma; Tadashi C. Ozawa
International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan

15:00 **Preparation of nanosheet pn-junction and their photocatalytic activity** **I.14. 3**
Shintaro Ida
Kyushu University

15:30 **Science and Technology of Dealloyed Nanoporous Metals** **I.14. 4**
Mingwei Chen
WPI-AIMR, Tohoku University, Sendai 980-8577, Japan

16:00 **Coffee & tea**

Printing & patterning II : Isabel Van Driessche

16:30 **Polymer-templated large-pore mesoporous metal oxide thin films for application in energy storage and nanomagnetics** — I.15. 1
Christian Reitz, Christian Suchomski, Torsten Brezesinski
Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany.

17:00 **Understanding the surface chemistry of metal oxide nanocrystals as pinning centers in ink-jet printed YBa2Cu3O7-x thin films** — I.15. 2
Jonathan De Roo, Freya Van den Broeck, Katrien De Keukeleere, Jonas Feys, Hannes Rijckaert, Jose C Martins, Isabel Van Driessche, Zeger Hens
Ghent University, Department of Inorganic and Physical Chemistry, Ghent University, Department of Organic Chemistry, Ghent University, Department of Inorganic and Physical Chemistry, Ghent University, Department of Inorganic and Physical Chemistry, Ghent University, Department of Inorganic and Physical Chemistry, Ghent University, Department of Organic Chemistry, Ghent University, Department of Inorganic and Physical Chemistry, Ghent University, Department of Inorganic and Physical Chemistry

17:15 **Metal Oxide Nanoparticle Engineering for Printed Electrochemical Applications** — I.15. 3
P.J. Wojcik, L. Santos, L. Pereira, R. Martins, E. Fortunato
Departamento de Ciencia dos Materiais, FCT-UNL, Cenimat – I3N and Cemop-Uninova, Campus de Caparica, 2829-516 Caparica, Portugal

17:45 **Inkjet-printed high conductivity, low temperature reduced graphene oxide film** — I.15. 4
Pei He, Brian Derby
School of Materials, University of Manchester, Manchester, United Kingdom

Poster session 3 : An Hardy

18:00 **Sol gel derived nanocrystalline ZnO-TFT: Fabrication and transistor parameters** — I.P3. 1
Yasemin Caglar, Saliha Ilican, Mujdat Caglar, Seval Aksoy, Fahrettin Yakuphanoglu
Department of Physics Anadolu University Eskisehir 26470 Turkey,Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Firat University Elazig 23169 Turkey

18:00 **Investigation of the effects of spin speed on XRD and SEM characterization of sol gel derived nanocrystalline ZnO films** — I.P3. 2
Mujdat Caglar, Yasemin Caglar, Saliha Ilican, Seval Aksoy, Fahrettin Yakuphanoglu
Department of Physics Anadolu University Eskisehir 26470 Turkey,Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Anadolu University Eskisehir 26470 Turkey,Department of Physics Firat University Elazig 23169 Turkey

18:00 **Sol gel derived nanocrystalline ZnO Films: The role of pH value on the XRD and SEM studies** — I.P3. 3
Saliha Ilican, Mujdat Caglar, Yasemin Caglar, Seval Aksoy, Fahrettin Yakuphanoglu
Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Anadolu University Eskisehir 26470 Turkey, Department of Physics Firat University Elazig 23169 Turkey

18:00 **Photo-crosslinkable polymer gate dielectrics for hysteresis-free OTFT with high solvent resistance** — I.P3. 4
Eun Kyung Lee a, Joo Young Kim a, Jong Won Chung a, Bang-Lin Lee a, Jeong Il Park a, Ji Young Jung a, Hye Yeon Yang a, Y Jeong Choi a and Youngjong Kang*b a Material R&D center, SAIT, Samsung Electronics, San 14, Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do, 446-712, Korea. E-mail: youngjkang@hanyang.ac.kr b Department of Chemistry, Research Institute for Natural Sciences, Institute of Nano Science and Technology, Hanyang University, 222 Wangsimni-Ro, Seongdong-Gu, Seoul, 133-791, Korea

18:00 **Photocatalytic properties of carbon nanotubes/titania nanoparticles composite layers deposited by electrophoresis** — I.P3. 5
S. Scalese(1), V. Scuderi (2), D. D'Angelo (1), M. M. G. Buscema (1), S. Libertino (1), R. A. Puglisi (1), M. Miritello (2), V. Privitera (2)
(1) CNR-IMM, Ottava Strada n.5, Zona Industriale, 95121 Catania (Italy), (2) CNR-IMM, via S. Sofia 64, 95123 Catania (Italy)

18:00 **Structural and optical properties of ZnO:V and SiO2/Zn2SiO4:V nanocomposites synthesized by sol-gel method** — I.P3. 6
J. El Ghoul (a,b)* and L. El Mir (a,b)
a Laboratoire de Physique des Matériaux et des Nanomatériaux Appliquée à l'Environnement, Faculté des Sciences de Gabès, Cité Erriadh Manara Zrig 6072 Gabès, Tunisie. b Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Departement of Physics, Riyadh 11623, Saudi Arabia.

18:00 **Sol-gel synthesis, optical and magnetic properties of vanadium doped ZnO nanoparticles** — I.P3. 7
J. El Ghoul (1,2)* and L. El Mir (1,2)
1 Laboratoire de Physique des Mat?riaux et des Nanomat?riaux Appliqu?e ? l?Environnement, Facult? des Sciences de Gab?s, Cit? Erriadh Manara Zrig 6072 Gab?s, Tunisia. 2 Al Imam Mohammad Ibn Saud University (IMSIU), College of Sciences, Department of Physics, Riyadh 11623, Saudi Arabia.

18:00 **The structural and optical properties of N-doped MgZnO thin film prepared by sol–gel** — I.P3. 8
Tien-Chai Lin, Wen-Chang Huang
Department of Electro-Optical Engineering, Kun Shan University

18:00 **Poly(N-vinyl pyrrolidone)/BaMgAl10O17:Eu2+: Development of a blue luminescent nanocomposite suitable for eco-energetic lighting devices (LEDs)** — I.P3. 9
Nathalie Pradal (a,b), Geneviève Chadeyron (a,b), Sandrine Therias (b,c), Rachid Mahiou (b,c)
(a) Clermont Université, ENSCCF, Institut de Chimie de Clermont-Ferrand, BP 10448, F-63000 CLERMONT-FERRAND; (b) Clermont Université, Université Blaise Pascal, Institut de Chimie de Clermont-Ferrand, BP 10448, F-63000 CLERMONT-FERRAND; (c) CNRS, UMR 6296, ICCF, BP 80026, F-63171 AUBIERE

18:00 **Light emitting TiO2: Eu thin films produced by matrix assisted pulsed laser evaporation from colloidal sols** — I.P3. 10
I. Camps,(1) L. Duta,(2) C. Nita,(2) E. György,(2,3) M. Borlaf,(4) R. Serna,(1) C. Logofatu,(5) M. T. Colomer,(4) R. Moreno (4)
(1)Laser Processing Group, Instituto de Óptica, CSIC, C/Serrano 121, 28006 Madrid, Spain; (2) National Institute for Lasers, Plasma and Radiation Physics, PO Box MG 36, 76900 Bucharest V, Romania; (3) Instituto de Ciencia de Materiales de Barcelona, Consejo Superior de Investigaciones Científicas (ICMAB-CSIC), Campus UAB, 08193 Bellaterra, Spain; (4)Instituto de Cerámica y Vidrio CSIC, Kelsen 5, 28049, Madrid, Spain; (5) National Institute for Materials Physics, PO Box MG. 7, 77125 Bucharest, Romania

18:00 **Photon Management in All Metal Oxide Solar Cells** — I.P3. 11
Natalia Yantara (1,2), Thu Trang Thi Pham (1,2), Nripan Mathews (3), Subodh Mhaisalkar (1,2)
(1. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore.) (2. Energy Research Institute @NTU (ERI@N), Nanyang Technological University, Singapore, Singapore.) (3. Singapore-Berkeley Research Initiative for Sustainable Energy, Singapore-Berkeley Research Initiative for Sustainable Energy, Singapore, Singapore.)

18:00 **Nano- and Microstructured Optical Coatings by Phase Separation in Sol-Gel Solutions** — I.P3. 12
Triin Kangur, Martin Timusk, Martin Järvekülg
Institute of Physics, University of Tartu, Estonia; Estonian Nanotechnology Competence Centre

18:00 **Post-annealing effect on the enhancement of 1.54μm emission from Er3+ and SnO2 nanoparticles co-doped silica films** — I.P3. 13
Xiaowei Zhang, Tao Lin, Pei Zhang, Shaobing Lin, Ling Xu, and Jun Xu*
National Laboratory of Solid State Microstructures and Jiangsu Provincial Key Laboratory of Advanced Photonic and Electronic Materials, School of Electronic Science and Engineering, Nanjing University, Nanjing 210093, China

18:00 **Tunable photoelectric properties by magnetic fields in Pr0.7Sr0.3MnO3/ZnO heterojunctions** **I.P3. 14**
W.Y. Huang, J.F. Wang, C.C. Ling* and J. Gao*
University of Hong Kong

18:00 **Plasmonic TiO2 films with gold nanoparticles by chemical spray pyrolysis** **I.P3. 15**
I. Oja Acik1, G. N. Oyekoya1, A. Mere1, M. Krunks1, V. Mikli2, L. Dolgov3, I. Sildos3
1 Tallinn University of Technology, Department of Materials Science, Laboratory of Thin Film Chemical Technologies, 19086 Tallinn, Estonia; 2 Tallinn University of Technology, Department of Materials Science, Chair of Semiconductor Materials Technology, 19086 Tallinn, Estonia; 3 University of Tartu, Institute of Physics, 51014 Tartu, Estonia;

18:00 **Broadband anti-reflective sol-gel coatings with easy-to-clean performance for concentrating photovoltaics** **I.P3. 16**
Cecilia Agustín, José Ángel Sánchez-García, Maider Machado, Jiri Nohava, Marta Brizuela, Naiara Yurrita, Oihana Zubillaga
TECNALIA R&I;TECNALIA R&I;TECNALIA R&I;CSM Instruments;TECNALIA R&I;TECNALIA R&I;TECNALIA R&I

18:00 **Structural, electrical and optical properties of sprayed Nd-F codoped ZnO thin films** **I.P3. 17**
A. Elfakir1, A. Belayachi1 , T. S. Tlemçani1 and M. Abd-Lefdil1, G. Schmerber2, M. Balestreiri2, S. Colis2 and A. Dinia2 K. Bouras3 and A. Slaoui3 E. G-Berasategui4
1University of Mohammed V-Agdal, Materials Physics Laboratory, P. B. 1014, Rabat, Morocco; 2 IPCMS , 23 rue du Loess, F-67037 Strasbourg cedex 2, France; 3 Laboratoire ICube, MaCEPV, 23 rue du Loess, F-67037 Strasbourg cedex 2, France; 4IK4-Tekniker Research Centre, c/ Iñaki Goenaga, 5, 20600 Eibar, Guipuzcoa, Spain

18:00 **Influence of preparation conditions on the properties of electrospun ZnO fibers** **I.P3. 18**
C. Busuioc, A. Evanghelidis, C. Florica, A. Costas, I. Enculescu
National Institute of Materials Physics, RO-077125, Bucharest-Magurele, Romania

18:00 **Increasing the surface area of nanocrystalline TiO2 for dye-sensitized solar cells with a novel wet processing-based method** **I.P3. 19**
Giuseppina Palma [1], Luca Cozzarini [1], Alessandro Fraleoni Morgera [1,2]*
[1] Organic OptoElectronics Laboratory, Sincrotrone Trieste SCpA – SS 14.5, km 163.5 – 34149 Basovizza (TS), Italy; [2] Flextronics Laboratory, Dept. of Engineering and Architecture – Univ. of Trieste. V. Valerio 10, 34100 Trieste (TS), Italy - Email: * afraleoni@units.it

18:00 **Effects of the chemical precursors on the growth of ZnO nanowires by chemical bath deposition** **I.P3. 20**
R. Parize*, J. Garnier, S. Guillemin, E. Appert, V. Consonni*
R.Parize, LMGP, Grenoble INP-CNRS, CS 50257 Grenoble and SiMAP, Grenoble INP-CNRS, F-38402 St Martin d'Heres; J.Garnier, LMGP, Grenoble INP-CNRS, CS 50257 Grenoble; S.Guillemin, LMGP, Grenoble INP-CNRS, CS 50257 Grenoble and INL, CNRS, UMR5270 Lyon; E.Appert, LMGP, Grenoble INP-CNRS, CS 50257 Grenoble and SiMAP, Grenoble INP-CNRS, F-38402 St Martin d'Heres; V.Consonni, LMGP, Grenoble INP-CNRS, CS 50257 Grenoble

18:00 **Highly branched RuO2 Nanorods on Electrospun TiO2 Nanofibers toward Electrochemical Catalysts** **I.P3. 21**
Yukyung Cho1, Su-Jin Kim1, Nam-Suk Lee2, Myung Hwa Kim1*, Youngmi Lee1
1 Dept. of Chemistry and Nano Science, Ewha Womans University, Seoul 120-750, Korea; 2 National Center for Nanomaterials Technology (NCNT), Pohang University of Science and Technology (POSTECH), Pohang 790-784, Korea

18:00 **Ultra-fast microwave assisted synthesis of Tb3+: GdOOH hierarchical structures, thermal conversion to oxide structures and photoluminiscent studies** **I.P3. 22**
Shafquat Majeed and S.A. Shivashankar
Materials Research Centre Centre for Nanoscience and Engineering Indian Institute of Science Bangalore-560012 INDIA

18:00 **Highly Efficient Electrocatalysts of RuO2-Co3O4 Composite Nanofibers** **I.P3. 23**
HYESU JANG, YEJIN YANG, CHONGMOK LEE, MYUNG HWA KIM
Department of Chemistry and Nano Science Ewha Womans University, Seoul, 120-750, Korea

18:00 **Erbium-Implanted Vanadium Dioxide Thin Films** **I.P3. 24**
Jeffrey C. McCallum 1, Herianto Lim 1, Nikolas Stavrias 1, Brett C. Johnson 1, Robert E. Marvel 2 and Richard F. Haglund 2
1 School of Physics, University of Melbourne, Melbourne, Victoria, 3010, Australia. 2 Department of Physics and Astronomy, Vanderbilt University, Nashville, Tennessee, 37240, USA.

18:00 **Studies on structural and optical properties of Ga-doped ZnO thin films deposited by spin coating technique** **I.P3. 25**
Sharul Ashikin Kamaruddin1, Mohd Zainizan Sahdan1, Kah-Yoong Chan2, Nafarizal Nayan1, Hashim Saim1
1 Microelectronic and Nanotechnology-Shamsuddin Research Centre, UniversitiTun Hussein Onn Malaysia, 86400 BatuPahat, Johor, Malaysia. 2 Faculty of Engineering, Multimedia University, 63100 Cyberjaya, Selangor, Malaysia.

18:00 **Zinc oxide electrodeposition using metallic/polymer nanofiber webs as electrodes** **I.P3. 26**
Alexandru Evanghelidis, Cristina Busuioc, Elena Matei, Ionut Enculescu
National Institute of Materials Physics, Magurele, Romania

18:00 **Printable InTiO films for printable optoelectronic devices** **I.P3. 27**
Jin-A Jeong and Han-Ki Kim
Kyung Hee University; Kyung Hee University

18:00 **Incorporation of gold nanoparticles in a TiO2 matrix for surface plasmonic properties** **I.P3. 28**
L. Avril, J. Boudon, P. Simon, L. Imhoff
Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université de Bourgogne, 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex, France

18:00 **Synthesis of ZnO Nanorods and Nanotubes with Hydrothermal Process For Improving Surface to Volume Ratio** **I.P3. 29**
S. OZTURK1*, A. KOSEMEN1,2, N. KILINC1, Z. Z. OZTURK1,3
1Gebze Institute of Technology, Faculty of Science, Department of Physics, 41400 Gebze-Kocaeli, Turkey 2 Mus Alparslan University, Department of Physics, 49100 Mus, Turkey 3 TUBITAK Marmara Research Center, Materials Institute, P.O. Box 21, 41470 Gebze Kocaeli, Turkey

18:00 **ZnO nanostructures by chemical spray as building blocks for next generation solar cells** **I.P3. 30**
M. Krunks1, T. Dedova1, I. Oja Acik1, V. Mikli2, E. Kärber1, A. Katerski1, A. Mere1
1 Tallinn University of Technology, Department of Materials Science, Laboratory of Thin Film Chemical Technologies, 19086 Tallinn, Estonia 2 Tallinn University of Technology, Department of Materials Science, Chair of Semiconductor Materials Technology, 19086 Tallinn, Estonia

18:00 **CdSe/ZnS-doped silicate and silicophosphate films prepared by sol-gel method** **I.P3. 31**
M. Elisa1, I. C. Vasiliu1, I. Feraru1, R. Iordanescu1, R. D. Trusca2, E. Vasile3
1Optospintronics Department, National Institute of R & D for Optoelectronics INOE 2000, 409 Atomistilor Str., Magurele 077125, Romania 2METAV-CD, 31 C.A. Rossetti, Bucharest, Romania 3University Politehnica of Bucharest, 313 Spl. Independentei, Bucharest, Romania

18:00 **Formation of Si1-xGex nanocrystals and the composition shifting of the direct and indirect bandgaps** **I.P3. 32**
N. N. Ha1, 3*, N. T. Giang1, N. T. Thuy1, N. N. Trung2, S. Saeed3, and T. Gregorkiewicz
1 International Training Insitute for Materials Science, Hanoi University of Science and Technology, No.1 Dai Co Viet, Hanoi, Vietnam; 2 Institute of Engineering Physics, Hanoi University of Science and Technology, No.1 Dai Co Viet, Hanoi, Vietnam; 3 Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098XH Amsterdam, The Netherlands;

18:00 **GAS SENSING APPLICATION OF ZNO-BASED MATERIALS PREPARED BY SOL-GEL** **I.P3. 33**
M. Hjiri1*, R. Dhahri1, L. El Mir1,2, S. G. Leonardi3, N. Donato3, G. Neri3
1 Laboratory of Physics of Materials and Nanomaterials Applied at Environment, Faculty of Sciences of Gabes, 6072 Gabes, Tunisia;2 Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Department of Physics, Riyadh 11623, Saudi Arabia;3 Department of Electronic Engineering, Chemistry and Materials Engineering, University of Messina, Messina 98166, Italy.

18:00 **STRUCTURAL AND OPTICAL PROPERTIES OF ZnO/PS NANOCOMPOSITES** **I.P3. 34**
M.-B Bouzourâa(1), A. Moadhen(1), A. Chaillou(3), M.-A Zaïbi(1&2), M. Guendouz(3), M.-L. Haji(3), M. Oueslati(1)
(1) Université de Tunis El Manar, Faculté des Sciences de Tunis, Unité de nanomatériaux et photonique, 2092 El Manar - Tunis – Tunisie. (2) Ecole Nationale Supérieure d'Ingénieurs de Tunis, Université de Tunis, 5 Avenue Taha Hussein, 1008 Tunis - Tunisia. (3) Université Européenne de Bretagne, CNRS FOTON-UMR 6082, 6 rue de Kérampont, BP 80518, 22305 Lannion, Cedex, France.

18:00 **Nano and macro porous membranes ? la carte** **I.P3. 35**
Petra Goering, Monika Lelonek
SmartMembranes GmbH

18:00 **Flower-like TiO2 / Nanorod RuO2 Hierarchical Structure and Its Application in Photoelectrochemical Water Splitting** **I.P3. 36**
Wei-Hsiang Lina,b, Po-Chin Chena, Jen Chun Choua, Jon-Yiew Gana, Hsin-Tien Chiub, Chi-Young Leea
aDepartment of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan;bDepartment of Applied Chemistry, National Chiao Tung University, Hsinchu 30010, Taiwan

18:00 **Surface structure of ZnO(0001) nanoplates grown by a microwave assisted aqueous solution method: An AFM and STM study** **I.P3. 37**
L K E Ericsson, K O Magnusson, H M Zhang
Department of Engineering and Physics, Karlstad University, S-651 88 Karlstad, Sweden

18:00 **Functional Nanocomposite materials prepared by alkali solution treatment as environmentally friendly and efficient phototocatalysts** **I.P3. 38**
Binas V.1,3, Zachopoulos A.,1 and G.Kiriakidis1,2
1Institute of Electronic Structure and Laser (IESL), FORTH, P.O. Box 1527, Vasilika Vouton, 711 10 Heraklion, Crete, Greece 2University of Crete, Physics Department 710 03 Heraklion, Crete, Greece 3 Quantum Complexity & Nanotechnology Center (QCN), Department of Physics, University of Crete, GR – 71003, Heraklion, Greece

18:00 **Soft chemical route to band gap control of layered perovskite via electron beam irradiation** **I.P3. 39**
Won-Jae Lee, Seung-Min Paek
Department of Chemistry, Kyungpook National University, Taegu 702-701, Korea.

18:00 **Large-area ZnO nanogenerator fabricated by Sol-gel method** **I.P3. 40**
Gao Zhi Qiang, Wang Rui , Li Taoa Qin Wei Wei, Hu Xue Feng Xu Meigui, Huang Shengming, Liang Qi, and Wei Zhang,*
a State Key Laboratory of Material-oriented Chemical Engineering and School of Chemical Engineering, Nanjing Tech University, Nanjing, Jiangsu 210009, PR China b School of Physical Science, Hefei University of Technology, Hefei, Anhui 230009, PR China

18:00 **Solution Approach in Textured Oxide Films Manufacturing for 2G HTSC Tapes** **I.P3. 41**
Kharchenko A., Kuimov A., Grigoriev A.
Lomonosov Moscow State University

18:00 **Growth of ZnO Films by Atmospheric Spray Pyrolysis** **I.P3. 42**
Kenji Yoshino1, *, Akiko Ide1, Akiko Mochihara1, Yujin Takemoto2, Minoru Oshima2, Kouji Toyota2, Koichiro Inaba2, Ken-ichi Haga2 , Toshio Naka2
1Department of Electrical and Electric Engineering, University of Miyazaki, Miyazakii 889-2192, Japan 2Reserach and Development Division, Tosoh Finechem Corporation, Shunan, Yamaguchi 746-0006, Japan

18:00 **Cathodoluminescence study of Al-doped ZnO nanofilms at 80 K and RT.** **I.P3. 43**
A.I. Popov (1,2), V. Savchyn (3) , J. Purans (1), A. Dabrowska(4) , A. Huczko(4), Birendra Pathak (5) and D. P. Subedi (5)
(1) Institute of Solid State Physics, University of Latvia, Kengaraga 8, 1063 Riga, Latvia; (2) Institute Laue-Langevin, F-38042 Grenoble, France; (3) Dept. Electronics, Ivan Franko National University of Lviv, 79017 Lviv, Ukraine; (4) Department of Chemistry, Warsaw University, 1 Pasteur str., 02-093 Warsaw, Poland; (5) Department of Natural Sciences, School of Science, Kathmandu University, Dhulikhel, Nepal

18:00 **Structural and optical properties of manganese doped zinc oxide thin films synthesized by sol-gel method** **I.P3. 44**
A.I. Savchuk, P.M. Tkachuk, G.I. Kleto, I.D. Stolyarchuk, S.A. Savchuk, O.A. Shporta, V.V. Makoviy
Department of Physics of Semiconductors and Nanostructures, Chernivtsi National University, 2 Kotsubynsky Str., 58012 Chernivtsi, Ukraine

18:00 **Solution Synthesis of High Density ZnO Hierarchical Nanostructures** **I.P3. 45**
A.Resmini, I.Tredici, U.Anselmi-Tamburini
Department of Chemistry University of Pavia, Italy

18:00 **Fabrication of Titania Nanofibers by Solution Blow Spinning** **I.P3. 46**
F.R. de Paula, T. C. Gimenes, E. A. Pereira, M. A. Montanhera1, L. Zadorosny, Edna R. Spada
Universidade Estadual Paulista, Departamento de Física e Química, Ilha Solteira, SP, Brazil; Instituto de Física de São Carlos – Universidade de São Paulo – USP, Brazil

18:00 **Characteristics of ZnO nanorods grown by simple chemical method** **I.P3. 47**
N. Roy & A. Roy
Department of Physics, NIT Silchar Assam, India

18:00 **The influence of Pt/Au nanoparticles' shape on activity of commercial TiO2 photocatalysts** **I.P3. 48**
Szilvia FODOR & Zsejke Réka TÓTH-1, Zsolt PAP-1,2,3, Lucian BAIA-2,4, Virginia DANCIU-1, Adriana VULPOI-2,4, Klára MAGYARI-2,4, András DOMBI-3, Klára HERNÁDI-3, Gábor KOVÁCS-1,2
1 Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University, Arany János 11, RO-400028 Cluj-Napoca, Romania; 2 Faculty of Physics, Babeş-Bolyai University, M. Kogălniceanu 1, RO-400084 Cluj-Napoca, Romania; 3 Research Group of Environmental Chemistry, Institute of Chemistry, University of Szeged, Tisza Lajos krt. 103, HU-6720 Szeged, Hungary; 4 Institute for Interdisciplinary Research on Bio-Nano-Sciences, Treboniu Laurian 42, RO-400271 Cluj-Napoca, Romania

18:00 **Plasma treatment of hydrothermally grown ZnO nanocolumns** **I.P3. 49**
Neda Neykova* (1) (2),Jakub Holovsky (1), Karel Hruska (1), Zdenek Remes (1), Milan Vanecek (1)
(1) Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnicka 10, 16200 Prague 6, Czech Republic;(2) Czech Technical University in Prague, Faculty of Nuclear Sciences and Physical Engineering Trojanova 13,120 00 Prague 2, Czech Republic

18:00 **TITANIUM DIOXIDE THIN FILMS FOR PHOTOVOLTAIC APPLICATION** **I.P3. 50**
T. Potlog1, V. Botnariuc1, P. Dumitriu1, L. Dmitroglo1, M. Dobromir2 and D. Luca2
1Physics Department and Enginerring, Moldova State University, Chisinau, Republic of Moldova, E-mail: tpotlog@gmail.com 2 Faculty of Physics, Al. I. Cuza" University, Iasi, Romania

18:00 **Shaping of TiO2 and WO3 nanocrystals for achieving high photocatalytic activity** **I.P3. 51**
Kata Saszet-1 & István Székely-1 & Zsolt Kedves-1, Zsolt Pap-1,2,3, Gábor Kovács-1,2, Klára Magyari-2,4, Teodora Radu-2,4, Adriana Vulpoi-2,4, Virginia Danciu-1, András Dombi-3, Klára Hernádi-3, Lucian Baia-2,4
1 Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Arany János 11, RO-400028 Cluj-Napoca, Romania; 2 Faculty of Physics, Babes-Bolyai University, M. Kogălniceanu 1, RO-400084 Cluj-Napoca, Romania; 3 Research Group of Environmental Chemistry, Institute of Chemistry, University of Szeged, H-6720, Szeged, Tisza Lajos krt. 103, Hungary; 4 Institute for Interdisciplinary Research on Bio-Nano-Sciences, Treboniu Laurian 42, RO-400271 Cluj-Napoca, Romania;

18:00 **Structural and optical properties of TiO2 thin films prepared by spin-coating technique** **I.P3. 52**
I. Sta*1, M. Jlassi1, M. Hajji1,2, M.F.Boujmil1 , M. Kompitsas3, H. Ezzaouia1
1 Laboratoire de Photovoltaïque, Centre de Recherche et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisie. 2 Institut Supérieur d'Electronique et de Communication de Sfax, Université de Sfax, BP 868, 3018 Sfax, Tunisie. 3 National Hellenic Research Foundation, Theoretical and Physical Chemistry Institute, 48, Vasileos, Konstantinou Ave., 11635 Athens, Greece.

18:00 **Nano-patterning of index-matched indium tin oxide sol-gel in light-emitting diodes for eliminating total internal reflection** **I.P3. 53**
Sungjoo Kim and Jong-Lam Lee
POSTECH

18:00 **Polymer-Ceramic Nanocomposites for High Energy Density Applications** **I.P3. 54**
S. Adireddy, V.S. Puli, B. Riggs, and D.B. Chirsey
S. Adireddy, Tulane University; V.S. Puli Tulane University; B. Riggs Tulane University; and XD.B. Chirsey

18:00 **Passivating TiO2 Nanotube Anti-Reflection Layers for silicon solar cells** **I.P3. 55**
P Prathap1, D Praveen Kumar2, G. Sumana1, M V Shankar2
b CSIR-National Physical Laboratory, Dr. K.S. Krishnan Marg, New Delhi-110012, India a Nanocatalysis Research Lab, Department of Materials Science & Nanotechnology, Yogi Vemana University, Kadapa ? 516 003, India

18:00 **Photoluminescence enhancement in self-assembled CdTe/CdS core/shell quantum dots thin films incorporation with Au nanoparticles** **I.P3. 56**
Hongyu Wang, Ling Xu*, Jing Chen, Rengqi Zhang, Rui Li, Jun Xu, Yao Yu, Weining Su, Zhongyuan Ma, and Kunji Chen
National Laboratory of Solid State Microstructure and School of Electronic Science and Engineering, Nanjing University, Nanjing 210093, People's Republic of China

30 May 2014

Processing and scale-up : An Hardy

08:30 **Nanostructured sol-gel films, from amorphous silica to low quartz** **I.16. 1**
David Grosso
Laboratoire Chimie de la Matière Condensée de Paris, Group SIMPLE, UMR UPMC-CNRS 7574, Université Pierre et Marie Curie (Paris 6), Collège de France, 11, place Marcelin Berthelot, 75231 Paris.

09:00 **Stabilization of aqueous nanoalumina suspensions** **I.16. 2**
F. Petrakli (1), D. Sioulas (2), A. Tsetsekou (1) 1. School of Mining and Metallurgical Engineering N.T.U.A, Iroon Polutexneiou 9, 157 80 Athens 2. Department of Materials Science and Engineering, University of Ioannina, 451 10 Ioannina
F. Petrakli (1)? D. Sioulas (2)? A. Tsetsekou (1) 1. School of Mining and Metallurgical Engineering N.T.U.A, Iroon Polutexneiou 9, 157 80 Athens 2. Department of Materials Science and Engineering, University of Ioannina, 451 10 Ioannina

09:15 **Electrospinning of Ceramics: a Facile Route to Produce Advanced Ceramic Nanofibers** **I.16. 3**
G. Cadafalch Gazquez, B. A. Boukamp, L. Moroni, J. E. ten Elshof
Inorganic Material Science Group, MESA + Institute for Nanotechnology, University of Twente, Enschede, The Netherlands; Inorganic Material Science Group, MESA + Institute for Nanotechnology, University of Twente, Enschede, The Netherlands; Tissue Regeneration, MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, Enschede, The Netherlands; Inorganic Material Science Group, MESA + Institute for Nanotechnology, University of Twente, Enschede, The Netherlands

09:30 **Large volume continuous synthesis of IZO nanoparticles and processing into semiconducting thin films** **I.16. 4**
Susanne Oertel *, Michael P. M. Jank *, Sean Butterworth **, Callum Crawshaw **, Peter N. Gooden **
* Fraunhofer Institute for Integrated Systems and Device Technology IISB, Schottkystr. 10, 91058 Erlangen, Germany; ** Promethean Particles Ltd, 6 Faraday Building, Nottingham Science Park, University Boulevard, Nottingham, NG7 2QP, UK

09:45 **Best poster award Symposium I**

10:00 **Coffee & tea**

Photovoltaic materials : Renzhi Ma & David Grosso

10:30 **Low temperature, aqueous solution deposition of high performance ZnO:Al TCO thin films on polymer and temperature sensitive substrates** **I.17. 1**
H. Hagendorfer1, P. Fuchs1, A. Paracchino2, S. Nishiwaki1, Y. E. Romanyuk1, and A. N. Tiwari1
1 Laboratory for Thin Films and Photovoltaics, Empa, Swiss Federal Laboratories for Materials Science and Technology, 8600 Duebendorf, Switzerland; 2 Laboratory for Functional Polymers, Empa, Swiss Federal Laboratories for Materials Science and Technology, 8600 Duebendorf, Switzerland;

11:00 **Development of EBL Perovskite Layer for ZnO Nanorod Solid State Dye-Sensitised Solar Cell** **I.17. 2**
L Loh, J Briscoe, S Dunn
Nanotechnology, Nanyang Polytechnic, Singapore; School of Engineering and Materials Science, Queen Mary University of London

11:15 **High efficiency inverted polymer solar cells with solution-processed ZnO buffer layer** **I.17. 3**
P. Morvillo, R. Diana, R. Ricciardi, E. Bobeico, C. Minarini
ENEA - P.le E. Fermi, 1 - 80055 Portici (NA) - Italy

11:30 **An analysis of new architectures using ZnO nano-rod arrays in chalcopyrite thin film solar cells** **I.17. 4**
Sophie Gledhill, Wiebke Ohm, Wiebke Riedel, Ümit Askünger, Martha Lux-Steiner, Thomas Goislard, Helga Szambolics
Free University of Berlin-Helmholtz Zentrum Berlin-NEXCIS-CEA Liten

11:45 **Solution processing towards titania buffer layers for dye sensitized solar cells: Electrochemical characterization** **I.17. 5**
Ladislav Kavan
J. Heyrovsky Institute of Physical Chemsitry, Dolejskova 3, CZ-18223 Prague 8, Czech Republic

12:00 **Colloidal solution of Transition Metal Oxides as charge harvesting layers in photovoltaics** **I.17. 6**
Mireille Richard-Plouet, Luc Brohan, Hélène Terrisse, Vincent Jouenne, Jean-Luc Duvail, Moustafa El Kass, Solenn Berson*, Noëlla Lemaitre*
Institut des Matériaux Jean Rouxel, Université de Nantes CNRS, 2, rue de la Houssinière, BP 32229, 44322 Nantes Cedex 03, France *CEA, LITEN, Laboratoire des Modules Photovoltaïques Organiques, INES 50 avenue du Lac Léman, 73375 Le Bourget du lac, France

12:15 **Impact of photonic light-trapping on photoelectrochemical water splitting in hematite coated mWO3 microspheroids** **I.17. 7**
Florent Boudoire, Rita Toth, Jakob Heier, Artur Braun, and Edwin C. Constable
Laboratory for High Performance Ceramics Empa, Swiss Federal Laboratories for Materials Science and Technology Überlandstr. 129, CH-8600, Dübendorf, Switzerland. Laboratory for Functional Polymers Empa, Swiss Federal Laboratories for Materials Science and Technology Überlandstr. 129, CH-8600, Dübendorf, Switzerland. Department of Chemistry University of Basel Spitalstr. 51, CH-4056 Basel, Switzerland.

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM J

Laser interaction with advanced materials: fundamentals and applications

Symposium Organizers:

Chantal Boulmer-Leborgne, University of Orleans, France

Rosalia Serna, Instituto de Optica, CSIC, Madrid, Spain

Maria Pervolaraki, Univ. of Cyprus, Nicosia, Cyprus

Florenta Costache, Fraunhofer Institute for Photonic Micro-systems, Dresden, Germany

Nadezhda Bulgakova, Institute of Thermophysics SB RAS, Novosibirsk, Russia

Published in Applied Surface Science (APSUSC) - Elsevier

Fundamentals of laser-mater interaction (I) : Ch. Boulmer-Leborgne

09:00 **Large-scale atomistic simulations of the structural transformations and microstructure development in short pulse laser processing of metals (Invited)** J.I 1
Leonid V. Zhigilei, Chengping Wu, Eaman T. Karim, Maxim Shugaev
University of Virginia, Department of Materials Science and Engineering

09:30 **Modelling and probing femtosecond laser pulse interaction with materials: melting of gold nanofilms** J.I 2
S. L. Daraszewicz 2, Y. Giret 1,2, N. Naruse 1, Y. Murooka 2, J. Yang 1, D. M. Duffy 2, A. L. Shluger 2, and K. Tanimura 1
1 The Institute of Scientific and Industrial Research (ISIR), Osaka University, 8-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan, 2 London Centre for Nanotechnology, Department of Physics and Astronomy, University College London (UCL), Gower Street, WC1E 6BT, London, UK

09:45 **Generation of femtosecond second-harmonic pulses from Archimedean nanospirals** J.I 3
Roderick Davidson, Jed Ziegler, Sergey Avanesyan and Richard Haglund
Vanderbilt University, Nashville, TN 37235 USA

10:00 **Control of local energy deposition inside dielectrics and semiconductors using long-wavelength femtosecond lasers** J.I 4
A. Mouskeftaras (1), S. Leyder (1), R. Clady (1), P. Delaporte (1), W. Marine (2), A. Rode (3), M. Sentis (1), O. Utéza (1), D. Grojo (1)
(1) Aix-Marseille University, CNRS, LP3 UMR 7341, F-13288, Marseille, France ; (2) Aix-Marseille University, CNRS, CINAM UMR7325, F-13288 Marseille, France ; (3) Laser Physics Centre, The Australian National University, Canberra, ACT 0200, Australia

10:15 **Coffee Break**

Fundamentals of laser-mater interaction (II) : F. Costache

10:45 **Experimental investigation of femtosecond laser induced modification of dielectric materials (Invited)** J.II 1
Stéphane Guizard
Laboratoire des Solides Irradiés, CEA-CNRS, Ecole Polytechique, 91128 Palaiseau

11:15 **Ablation of metals by extreme-ultraviolet pulsed laser** J.II 2
J. Lancok, P. Pira, T. Burian, L. Juha, L. Vyšín, Z. Zelinger, J. Wild
Institute of Physics of the Academy of Sciences of the Czech Republic,v.v.i., Na Slovance 2, 182 21 Praha 8, Czech Republic; Faculty of Mathematics and Physics, Charles University, V Holesovickach 2, 180 00 Praha 8, Czech Republic; J. Heyrovský Institute of Physical Chemistry of the Academy of Sciences of the Czech Republic, v. v. i., Dolejškova 2155/3, 182 23 Praha 8, Czech Republic

11:30 **Study of dynamic strength properties of polycrystalline and single crystal synthetic diamond under the action of picosecond laser pulses** J.II 3
K. V. Khishchenko,[1] S. A. Abrosimov,[2] A. P. Bazhulin,[2] A. P. Bolshakov,[2] V. E. Fortov,[1] A. A. Khomich,[2] V. I. Konov,[2] I. K. Krasyuk,[2] P. P. Pashinin,[2] V. G. Ralchenko,[2] A. Yu. Semenov,[2] D. N. Sovyk,[2] I. A. Stuchebryukhov[2]
[1]Joint Institute for High Temperatures RAS; [2]General Physics Institute RAS, Moscow, Russia

11:45 **Observation of ultrafast electro-optic effect and transient Newton rings at the surface of LiNbO3 irradiated with fs laser pulses** J.II 4
Mario Garcia-Lechuga, Javier Hernandez-Rueda, Jan Siegel, Javier Solis
Laser Processing Group, Instituto de Óptica, CSIC, Serrano 121, 28006 Madrid, Spain

12:00 **Lunch**

Laser-induced nanoparticle generation : N. Bulgakova

14:00 **Understanding Nanoparticle and Nanostructure Generation by Laser (Invited)** J.III 1
Tatiana E. Itina
Hubert Curien Laboratory, Bât. F, 18 rue Benoît Lauras, 42000 Saint-Etienne, France

14:30 **Femtosecond laser fragmentation for controllable synthesis of nanomaterials** J.III 2
Ksenia Maximova, Andrei Kabashin
Aix Marseille Université, CNRS, LP3 UMR 7341, 13288, Marseille, France

14:45 **Nanoparticle plume dynamics in femtosecond laser ablation of metals** J.III 3
G. O'Connell, T. Donnelly, J. G. Lunney
School of Physics and CRANN, Trinity College Dublin, Dublin, Ireland

15:00 **Spatio-temporal characterization of laser plasma plume: applications of nanoparticles formation in the ambient air** J.III 4
Marie Girault, Jean-Marie Jouvard, Luc Lavisse (1), Hamadi Farida (2), François-Xavier Ouf (3)
1-Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université de Bourgogne, 1 Allée des Granges Forestier F-71100 Chalon-sur-Saône, France ; 2- Laboratoire d'Interaction Laser-Matière, Centre de Développement des Technologies Avancées, Houch-Oukil, B.P. 17, Baba Hassen, Alger, Algérie ; 3-Institut de Radioprotection et de Sûreté Nucléaire (IRSN), Saclay, BP 68, F-91192 Gif-sur-Yvette cedex, France

15:15 **Ultrashort laser ablation of fullerite in liquid media** J.III 5
A. De Bonis1, M. Curcio1, A. Galasso1, J.V. Rau2 , A. Santagata3, R. Teghil1
1 Dipartimento di Scienze, Università della Basilicata, Viale dell'ateneo Lucano, 10 – 85100 Potenza, Italy; 2 CNR - ISM, Via del Fosso del Cavaliere, 100 – 00133 Roma, Italy; 3 CNR – ISM UOS Tito, C.da Santa Lojia, Zona Industriale Tito Scalo - 85010 Tito (PZ) – Italy

15:30 **Coffee Break**

Laser-induced nanoparticle formation and manipulation : T. Itina

16:00 **Plasmonic Ag nanoparticles by visible laser annealing for applications in flexible, organic electronic devices** J.IV 1
S. Kassavetis1, S. Kaziannis2, M. Beliatis3, D. Kutsarov3, N. Pliatsikas1,4, C. Kosmidis2, S.R.P. Silva3, S. Logothetidis4, E. Lidorikis1, P. Patsalas4
1. University of Ioannina, Department of Materials Science and Engineering, GR-45110 Ioannina, Greece; 2. University of Ioannina, Department of Physics, GR-45110 Ioannina, Greece; 3. University of Surrey, Advanced Technology Institute, Nanoelectronics Center, Guildford GU2 7XH, Surrey, United Kingdom; 4. Aristotle University of Thessaloniki, Department of Physics, GR-54124 Thessaloniki, Greece

16:15 **Formation of plasmonic colloidal silver for flexible and printed electronics using laser ablation** J.IV 2
S. Kassavetis1, S. Kaziannis2, N. Pliatsikas1,3, A. Karanastasis1, A. Avgeropoulos1, N. Zafeiropoulos1, C. Kosmidis2, E. Lidorikis1, and P. Patsalas3
1University of Ioannina, Department of Materials Science and Engineering, 45110 Ioannina, Greece; 2University of Ioannina, Department of Physics, 45110 Ioannina, Greece; 3Aristotle University of Thessaloniki, Department of Physics, 54124 Thessaloniki, Greece

16:30 **Laser-induced agglomeration of gold nanoparticles dispersed in a liquid** J.IV 3
P.G. Kuzmin, G.A Shafeev, A.A. Serkov, N.A. Kirichenko, M.E. Scherbina
Wave Research Center of A.M. Prokhorov General Physics Institute of the Russian Academy of Sciences, 38, Vavilov street, 119991, Moscow, Russian Federation

16:45 **Controlling size and distribution of noble metal nanoparticles embedded in Al2O3** J.IV 4
M. Lambert (1), C. Kaan Akkan (2), A. May (1), N. Agarwal (1), C. Aktas (1)
(1) Leibniz Institute for New Materials, CVD/Biosurfaces, Saarbrucken, Germany
(2) Institute of Biomedical Engineering, Boğazi?i University, Istanbul, Turkey

17:00 **Laser processing of ceramic substrates modified by deposition of metals and oxides** **J.IV 5**
V. Rico-Gavira,1J. Gil-Rostra, 1 F. Yubero,1 J.P. Espinós,1 A.R. González-Elipe,1 R. Lahoz,2 F. Rey-García,2 G. F. de la Fuente2
1.- Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla). Avda. Américo Vespucio 49. 41092 Sevilla. Spain. 2.- Instituto de Ciencia de Materiales de Aragón (CSIC-Univ. Zaragoza). María de Luna, 3. 50018 Zaragoza. Spain

17:15 **Nanosecond (ns) laser manipulation of glass containing silver ions: influence of the wavelength, the energy deposited and the silver ion concentrations** **J.IV 6**
Mohamed Cherif Sow, Jean Philippe Blondeau
Laboratoire CEMHTI, UPR 3079 CNRS, Orleans, France

17:30 **Low-order harmonic generation from atoms and nanoaggregates in ZnS laser ablation plasmas** **J.IV 7**
Mohamed Oujja, Antonio Benítez-Cañete, Ignacio Lopez-Quintas, Margarita Martín, R. de Nalda, Marta Castillejo*
Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain

27 May 2014

Advanced materials prepared by PLD, MAPLE and LIFT (I) : M. Pervolaraki

08:30 **MICROBIAL COLONIZATION OF BIOPOLYMERIC THIN FILMS CONTAINING NATURAL COMPOUNDS AND ANTIBIOTICS FABRICATED BY MAPLE (Invited)** **J.V 1**
R. Cristescu1, G. Dorcioman1, C. Popescu1, C. Nita1, A. Visan1, G. Socol1, I.N. Mihailescu1, D. Mihaiescu2, A. Grumezescu2, M. Enculescu3, C. Chifiriuc4, R. J. Narayan5, and D. B. Chrisey6
1National Institute for Lasers, Plasma & Radiation Physics, Lasers Department, P.O. Box MG-36, Bucharest-Magurele, Romania 2Faculty of Applied Chemistry and Materials Science, “Politehnica” University of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 3National Institute of Materials Physics, P.O. Box MG-7, Bucharest-Magurele, Romania 4Faculty of Biology, University of Bucharest, Microbiology Immunology Department, 77206-Bucharest, Romania 5Biomedical Engineering, University of North Carolina, Chapel Hill, NC, USA 6Department of Physics and Engineering Physics, Tulane University, New Orleans, LA, USA

09:00 **Towards paper-based point-of-care diagnostics fabricated by Laser Induced Forward Transfer** **J.V 2**
Ioannis N. Katis (a), Judith A. Holloway (b), Jens Madsen (b), Saul N. Faust (b), Spiros D. Garbis (c), Peter J.S. Smith (d), David Voegeli (e), Dan L. Bader (e), Robert W. Eason (a), Collin L. Sones (a)
a Optoelectronics Research Centre, University of Southampton, Highfield, Southampton, U.K. SO17 1BJ.; b Clinical and Experimental Science, Faculty of Medicine and Institute for Life Sciences, University of Southampton and NIHR Wellcome Trust Clinical Research Facility and Respiratory Biomedical Research Unit, University Hospital Southampton NHS Foundation Trust, Southampton UK; c Institute for Life Sciences, Centre for Proteomic Research, and Cancer Sciences & Clinical and Experimental Medicine, University of Southampton, Highfield Campus, Southampton, UK.; d Institute for Life Sciences and Centre for Biological Sciences ; e Faculty of Health Sciences, University of Southampton, Highfield, Southampton SO17 1BJ, UK ;

09:15 **Ag conductive ink printing through LIFT technique** **J.V 3**
C. Florian, F. Caballero-Lucas, J.M. Fernández-Pradas, J.L. Morenza, P. Serra
Departament de Física Aplicada i Òptica, Universitat de Barcelona, Barcelona, Spain Martí i Franquès 1, E-08028.

09:30 **Towards controlled growth of nanostructured Zn1-xCoxS via double-pulse fs-Pulsed Laser Deposition** **J.V 4**
Ignacio Lopez-Quintas 1, Vincen Loriot 1 2, David Ávila-Brande 3, Jesús G. Izquierdo 4, Esther Rebollar 1, Luis Bañares 4, Marta Castillejo 1, Rebeca de Nalda 1, Margarita Martín 1
1 Instituto de Química Física Rocasolano, CSIC Madrid, Spain; 2 Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Villeurbanne, France (present address); 3 Departamento de Química Inorgánica I, Facultad de Ciencias Químicas, UCM, Madrid, Spain; 4 CLUR-Departamento de Química Física I, Facultad de Ciencias Químicas, UCM, Madrid Spain

09:45 **PLD of metallic coatings via a dynamic prism configuration** **J.V 5**
F. Cambronero(1), F. Rey-García(1), C. Bao-Varela(1), L. C. Estepa(2), R. Lahoz(2), L. A. Angurel(2), G. F. de la Fuente(2)
1. Micro-optics & GRIN Optics UA (USC-CSIC), University of Santiago de Compostela, Spain; 2. ICMA (CSIC-Univ. Zaragoza), Spain.

10:00 **Cofee Break**

Advanced materials prepared by PLD, MAPLE and LIFT (II) : R.Serna

10:30 **Large enhancement in photoluminescence of ZnO grown on strain relaxed nanoporous GaN template by pulsed laser deposition** **J.VI 1**
Jie Tang, 1,2 Liyuan Deng, 1 I P Seetoh,1,4 K K Ansah-Antwi, 1 T. Venkatesan,1,2 Soo Jin Chua1,2,3,4
1. Electrical and Computer Engineering, National University of Singapore, Singapore 117576 2. NUSNNI-Nanocore, National University of Singapore, Singapore 117576 3. Institute of Materials and Research Engineering, Agency for Science, Technology and Research, 3 Research Link, Singapore 117602 4. Singapore-MIT Alliance, National University of Singapore, 4 Engineering Drive 3, Singapore 117576, Singapore

10:45 **Pure and Rare-Earth Doped Gallium Lanthanum Sulphide Amorphous Thin Films Grown by Pulsed Laser Deposition in Various Temporal Regimes** **J.VI 2**
G. Dascalu1, O. G. Pompilian2, I. Mihaila1, S. Gurlui1, P. Hawlova3, P. Nemec3, V. Nazabal4, C. Focsa2
1) Faculty of Physics, University "Alexandru Ioan Cuza", 700506 Iasi, Romania 2) Laboratoire de Physique des Lasers, Atomes et Molécules, Université Lille 1, 59655 Villeneuve d'Ascq cedex, France 3) Faculty of Chemical Technology, University of Pardubice, Studentska 573, 53210 Pardubice, Czech Republic 4) Institut des Sciences Chimiques de Rennes, Université de Rennes 1, Campus de Beaulieu, 35042 Rennes cedex, France

11:00 **Growth of tailored oxide heterostructures by pulsed laser deposition and studies of their electronic structure and electrical transport characteristics** **J.VI 3**
Pramod Kumar, P.P.S. Bhadauria, Anurag Gupta, Prabir Pal, Ajay Shukla, Anjana Dogra and R. C. Budhani
CSIR, National Physical Laboratory, Dr. K.S. Krishnan Marg, New Delhi-100012

11:15 **Pulsed laser deposition of novel CBN (CaxBa1-xNb2O6) thin films for high performance electro-optic devices** **J.VI 4**
S. Vigne, N. Hossain, F. Fesharaki, K. Wu, J. Margot, M. Chaker
INRS-EMT, 1650 Boulevard Lionel Boulet, Varennes, QC J3X 1S2, Canada ; INRS-EMT, 1650 Boulevard Lionel Boulet, Varennes, QC J3X 1S2, Canada ; Poly-Grames Research Center, Ecole Polytechnique de Montreal, QC H3T 1J4, Canada ; Departement de Physique, Universite de Montreal, C.P.6128, Succ. Centre-ville, QC H3C 3J7, Canada ; INRS-EMT, 1650 Boulevard Lionel Boulet, Varennes, QC J3X 1S2, Canada

11:30 **Potassium niobates thin films synthesized by pulsed laser deposition: relationships between deposition conditions, morphologies and structure** **J.VI 5**
A. Waroquet, V. Demange, S. Députier, M. Guilloux-Viry
Institut des Sciences Chimiques de Rennes – UMR 6226 Campus scientifique de Beaulieu 263, Avenue du Général Leclerc 35042 Rennes Cedex, France

11:45 **Synthesis of lead –free (Ba1–xCax)(ZryTi1–y)O3 thin films by laser ablation and their functional properties** **J.VI 6**
N. D. Scarisoreanu1, A. Andrei1, V. Ion1, R. Birjega1, L.Nedelcu2, A. Moldovan2, F. Craciun3 and M. Dinescu1
1. NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania, 2 .NIMP-National Institute of Materials Physics, 077125 Bucharest-Magurele, Romania, 3. CNR-Istituto dei Sistemi Complessi, Area della Ricerca Roma-Tor Vergata, Via del Fosso del Cavaliere 100, I-00133, Rome, Italy

12:00 **Lunch**

Pulsed laser depositon: materials and processes : C. Focsa

14:00 **Ag and Sb doped thin films of thermoelectric PbTe material deposited by multi-target ArF PLD** **J.VII 1**
E. Cappelli1*, A. Bellucci1, L. Medici2, A. Mezzi3 , S. Kaciulis3 and D.M. Trucchi1
1CNR-IMIP, Montelibretti, via Salaria Km 29.3, P.O.B. 10, 00016 Rome, Italy. 2CNR-IMAA, 85050 Tito Scalo, Potenza, Italy. 3CNR-ISMN, Montelibretti, via Salaria Km 29.3, P.O.B. 10, 00016 Rome

14:15 **Pulsed Laser Deposition of monocristalline copper films on MgO (111) substrates.** **J.VII 2**
F. Aweke (1), J. Hulik (1), F. le Normand (1), F. Antoni (1), C. Speisser (1), D. Muller (1), G. Morvan (2)
(1) ICube-Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, Université de Strasbourg-CNRS, 23, rue du Loess, 67037 STRASBOURG Cedex, France (2) LHyGeS-Laboratoire d'Hydrologie et de Géochimie de Strasbourg, UMR7517 CNRS/EOST/UdS, 1, rueBlessig 67084 STRASBOURG Cedex, France. (*) Presenting author

14:30 **Laser synthesis of nanometric iron oxide films for thermo sensors and thermo converters** **J.VII 3**
1 S.A.Mulenko, 1 E.V.Moroz, 2 N.T.Gorbachuk, 3 N.Stefan, I.N.Mihailesku
1 Institute for Metal Physics NAS of Ukraine, 36, Academician Vernadsky Blvd, UA-03142, Kiev-142, Ukraine 2 Kiev State University of Technology and Design, UA-03011, Kiev-11, Ukraine 3 National Institute for Laser, Plasma and Radiation Physics, PO Box MG-54, RO-77125, Magurele, Romania

14:45 **PLD growth of KNN nanorods** **J.VII 4**
R. Ayouchi1, M. Leal1, A. Kholkin2, R. Schwarz1
1 Department of Physics and ICEMS, Instituto Superior Técnico, P-1049-001 Lisbon, Portugal 2 DECV & CICECO, University of Aveiro, P-3810-193 Aveiro, Portugal

15:00 **Pulsed Laser Deposition of Ge-Sb-Se glasses: A plasma plume dynamics study** **J.VII 5**
R. Boidin, S. Gurlui, G. Dascalu, P. Nemec, V. Nazabal, C. Focsa
Department of Graphic Arts and Photophysics, Faculty of Chemical Technology, University of Pardubice, Studenská 573, 53210 Pardubice, Czech Republic; Alexandru Ioan Cuza» University, Faculty of Physics, 700506 Iasi, Romania; Alexandru Ioan Cuza» University, Faculty of Physics, 700506 Iasi, Romania; Department of Graphic Arts and Photophysics, Faculty of Chemical Technology, University of Pardubice, Studenská 573, 53210 Pardubice, Czech Republic; Institut des sciences chimiques de Rennes, UMR CNRS 6226, Equipe Verres et Céramiques, Université de Rennes1, 35042 Rennes, France; Laboratoire de Physique des Lasers, Atomes et Molécules (UMR CNRS 8523), Université Lille 1 Sciences & Technologies, 59655 Villeneuve d'Ascq, France

15:15 **Angular distribution of species in pulsed laser deposition of LaxCa1-xMnO3** **J.VII 6**
A. Ojeda, C. W. Schneider, M. Döbeli, T. Lippert, A. Wokaun
Paul Scherrer Institute: A. Ojeda, C. W. Schneider, T. Lippert, A. Wokaun; Laboratory of Ion Beam Physics, ETH Zürich: M. Döbeli;

15:30 **Coffee Break**

Poster Sesion J: Fundamentals of laser-mater interaction. Ultrafast phenomena. Biological applications : R. Cristescu, S. Guizard, I. Zergioti & F. Costache

16:00 **Structural phenomena in multicomponent silicate glasses after femtosecond laser pulse irradiation** **JP.VIII 2**
Thomas Seuthe1, Moritz Grehn2, Alexandre Mermillod-Blondin3, Jörn Bonse4 and Markus Eberstein1
1 Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Winterbergstraße 28, 01277 Dresden, Germany; 2 Technische Universität Berlin, Department of Optics and Atomic Physics, Straße des 17. Juni 135, 10623 Berlin, Germany; 3 Max-Born-Institute for Nonlinear Optics and Short Pulse Spectroscopy, Max-Born-Straße 2a, 12489 Berlin, Germany; 4 BAM Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12205 Berlin, Germany

16:00 **Al-doped ZnO thin films grown by pulsed laser using a series of high quality ceramic targets** **JP.VIII 3**
Adel Taabouche1, 2,*, Abderrahmane Bouabellou1, Fouad Kermiche1, Faouzi Hanini1, Yacine Bouachiba1 and Azzeddine Grid2, Chawki Benazzouz3
1 Thin Films and Interfaces Laboratory, University of Constantine1, Constantine, Algeria 2 Welding and NDT Research Centre (CSC). BP 64 CHERAGA – ALGERTA 3 Center CRNA, 2 Bd Franz Fanon, Algiers, Algeria

16:00 **Fabrication of biodegradable polycaprolactone -polyethylene glycol composite coatings by Matrix Assisted Pulsed Laser Evaporation and Dip Coatings** **JP.VIII 4**
A. Visan1, M. Miroiu1, N. Stefan1, C. Nita1, G. Dorcioman1, I. Zgura2, O.L. Rasoaga2, C.S. Breazu2, A. Stanculescu2, R. Cristescu1, G. Socol1, I.N. Mihailescu1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2 National Institute of Materials Physics, Magurele, Ilfov, Romania

16:00 **Matrix Assisted Pulsed Laser Evaporation synthesis of biomimetic nanocrystalline apatite coatings for biomedical applications** **JP.VIII 5**
A. Visan1, D. Grossin2, N. Stefan1, L. Duta1, F.M. Miroiu1, G.E. Stan3, M. Sopronyi1, C. Luculescu1, M. Freche2, O. Marsan2, C. Charvilat2, S. Ciuca4, I.N. Mihailescu1
1National Institute for Lasers, Plasma, and Radiation Physics, RO-77125, Magurele-Ilfov, Romania 2CIRIMAT - Carnot Institute, University of Toulouse, ENSIACET, 4 allée Emile Monso, 31030 Toulouse Cedex 4, France 3Politehnica University of Bucharest, Faculty of Materials Science and Engineering, Bucharest, Romania

16:00 **Ultra-short pulsed laser ablation and deposition of magnesium diboride thin films** **JP.VIII 6**
A. De Bonis1, A. Santagata2, M. Sansone1, A. Galasso1, R. Teghil1
1 Dipartimento di Scienze, Università della Basilicata, Viale dell'Ateneo Lucano 10, 85100 Potenza, Italy 2 CNR-ISM UOS Tito, C.da S. Loja, Zona Industriale, 85050 Tito Scalo (PZ), Italy

16:00 **Nanosecond and femtosecond laser irradiation for graphene related nanomaterials production** **JP.VIII 7**
Paola Russo1, Simon Federico Span?1, Anming Hu2, Giuseppe Compagnini1
1Chemistry Department, University of Catania, Catania, Italy; 2Department of Mechanical, Aerospace and Biomedical Engineering, University of Tennessee, Knoxville, 509 Doughty Engineering Building, 1512 Middle Drive, Knoxville, TN 37996, USA

16:00 **Comparative study on the deposition of polymeric coatings based on PCL/PLGA blends** **JP.VIII 8**
G. Popescu-Pelin1, E. Axente1, F. Sima1, I. Iordache1, C. Nita1, A. Visan1, I. Zgura2, O.L. Rasoaga2, C.S. Breazu2, A. Stanculescu2, G. Socol1, I.N. Mihailescu1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2 National Institute of Materials Physics, Magurele, Ilfov, Romania

16:00 **Deposition and characterization of polyethylene glycol/poly(3-hydroxybutyrate-co-3-hydroxyvalerate) blends** **JP.VIII 9**
M. Sopronyi1, C. Nita1, V. Grumezescu1, O.L. Rasoga2, N. Stefan1, C.S. Breazu2, M. Socol4, I. Zgura2, A. Visan1, G. Popescu-Pelin1, A. Stanculescu2, I.N. Mihailescu1, G. Socol1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2 National Institute of Materials Physics, Magurele, Ilfov, Romania

16:00 **Modeling of laser annealing SiOx films** **JP.VIII 10**
Gavrylyuk O.O., Semchuk O.Yu
Phd student; Dr.Sci

16:00 **A study on the crystallization of thick a-Si layer as hard mask using pulsed laser annealing** **JP.VIII 11**
Seonkyeng Sim, Jinho Oh, and Hyunchul Sohn
Department of Materials Science & Engineering, Yonsei University, Seoul 120-749, Korea

16:00 **Nonlinear refractive index in Ge-Sb-Se glasses: Comparison between experiment and simulations at telecom wavelength** **JP.VIII 12**
R. Boidin, J.C. Tchahame, P. Němec, M. Chauvet, G. Renversez, E. Baudet, V. Nazabal
Department of Graphic Arts and Photophysics, Faculty of Chemical Technology, University of Pardubice, Studenská 573, 53210 Pardubice, Czech Republic; FEMTO-ST, UMR 6174, Université de Franche Comté, 16, route de Gray, 25000 Besançon, France; Department of Graphic Arts and Photophysics, Faculty of Chemical Technology, University of Pardubice, Studenská 573, 53210 Pardubice, Czech Republic; FEMTO-ST, UMR 6174, Université de Franche Comté, 16, route de Gray, 25000 Besançon, France; Institut Fresnel, CNRS UMR 7249, Université d'Aix Marseille, Campus de Saint Jérôme, 13013 Marseille, France; Institut des sciences chimiques de Rennes, UMR CNRS 6226, Equipe Verres et Céramiques, Université de Rennes1, 35042 Rennes, France; Institut des sciences chimiques de Rennes, UMR CNRS 6226, Equipe Verres et Céramiques, Université de Rennes1, 35042 Rennes, France

16:00 **Ultrafast direct laser writing of buried waveguides in the 0.8CaSiO3-0.2Ca3(PO4)2 eutectic glass doped with Nd3+ ions** **JP.VIII 13**
D. Sola1, J. Martínez de Mendibil2, J.R. Vázquez de Aldana3, G. Lifante2, A.H. de Aza4, P. Pena4, J.I. Peña1
1Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC Departamento de Ciencia y Tecnología de Materiales y Fluidos C/ María de Luna, 3 50.018 Zaragoza, Spain 2 Departamento de Física de Materiales, C-04, Facultad de Ciencias Universidad Autónoma de Madrid 28.049 Madrid, Spain 3 Grupo de Optica. Facultad de Ciencias Universidad de Salamanca 37.008 Salamanca, Spain 4 Instituto de Cerámica y Vidrio-CSIC C/ Kelsen 5 28.049 Madrid, Spain

16:00 **Femtosecond laser pulse influence on binary mixed Be, W and C layers** **JP.VIII 14**
C. P. Lungu1, C. Porosnicu1, I. Jepu1, C. Ticos1, P. Chiru1, O. Pompilian1, M. Lungu1, P. P. Dinca1, A. Marcu1, C. Luculescu1, R. Banici1, G. Cojocaru1, G. R. Ungureanu1, D. Ursescu1, C. E. A. Grigorescu2, A. Marin3, P. Osiceanu3
1National Institute for Laser, Plasma and Radiation Physics, 077125 Bucharest, Romania; 2National Institute R&D for Optoelectronics INOE 2000, 077125 Bucharest, Romania; 3Institute of Physical Chemistry Ilie Murgulescu, 060021, Bucharest, Romania

16:00 **Emitter formation using laser doping technique on n- and p-type c-Si substrates** **JP.VIII 15**
Gema López*, Pablo R. Ortega, Cristóbal Voz, Isidro Martín, Mónica Colina, Anna B. Morales, Albert Orpella, Ramón Alcubilla
MIcro and Nano Technologies Group, Universitat Politecnica de Catalunya

16:00 **Optical limiting effect in laser irradiated graphene oxide nanomaterials** **JP.VIII 16**
Giuseppe Isgr?1, Simon Federico Span?1, Luisa D?Urso1, Giuseppe Compagnini1, Enza Fazio2, Fortunato Neri2
1 Dipartimento di Scienze Chimiche, Universit? di Catania, Viale Andrea Doria 6, 95125 Catania, Italy 2 Dipartimento di Fisica e di Scienze della Terra, Universit? di Messina, Viale F. Stagno d?Alcontres, 31, 98166 Messina

16:00 **Laser-induced forward transfer of a bis-pyrene compound for o-TFTs** **JP.VIII 17**
C. Constantinescu, A.K. Diallo*, A. D'Aleo*, F. Fages*, C. Videlot-Ackermann*, P. Delaporte, P. Alloncle
Aix-Marseille University, CNRS, LP3 UMR 7341, F-13288, Marseille, France; *Aix-Marseille University, CNRS, CINaM UMR 7325, F-13288, Marseille, France

16:00 **Synthesis and characterization of carbon-coated molybdenum disulfide from solid precursor by laser pyrolysis** **JP.VIII 18**
L. Gavrila-Florescu, E. Popovici, A. Ilie, I. Morjan
National Institute for Lasers, Plasma and Radiation Physics, P.O. Box MG-36, Bucharest, Romania

16:00 **Investigation of the rapid fabrication of multiple nanofoam materials via femtosecond laser irradiation** **JP.VIII 19**
J A Grant-Jacob*, B Mills and R W Eason
Optoelectronics Research Centre, University of Southampton, Southampton, UK

16:00 **Morphological, structural and biological characteristics of ultra-high molecular weight polyethylene acetabular cups functionalized with bioactive glass coatings by pulsed laser deposition** **JP.VIII 20**
L. Duta1, G.E. Stan2, A.C Popescu1, A.C. Popa2,3,4, F. Miculescu5, I.N. Mihailescu1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele-Ilfov, Romania 2National Institute of Materials Physics, Magurele-Ilfov, Romania 3Army Centre for Medical Research, Bucharest, Romania 4Department of Cellular and Molecular Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania 5Politehnica University of Bucharest, Faculty of Materials Science and Engineering, Bucharest, Romania

16:00 **Synthesis of biological hydroxyapatite thin films by pulsed laser deposition** **JP.VIII 21**
L. Duta1, G.E. Stan2, N. Serban1, F.N. Oktar3,4,5, I.N. Mihailescu1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele-Ilfov, Romania 2National Institute of Materials Physics, Magurele-Ilfov, Romania 3Department of Bioengineering, Faculty of Engineering, Marmara University, Istanbul, Turkey 4Department of Medical Imaging Techniques, School of Health Related Professions, Marmara University, Istanbul, Turkey 5Nanotechnology and Biomaterials Application & Research Centre, Marmara University, Istanbul, Turkey

16:00 **Laser printed thin films of organometallic and azo-derivative compounds for non-linear optical applications** **JP.VIII 22**
Andreea Matei (1), Valentin Ion (1), Catalin Constantinescu (1), Bogdana Mitu (1), Iulian Ionita (2), Maria Dinescu (1), Ana Emandi (3)
(1) INFLPR – National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor St, RO-077125, Magurele, Romania; (2) UB – University of Bucharest, Faculty of Physics, 405 Atomistilor St, RO-077125, Magurele, Romania; (3) UB – University of Bucharest, Faculty of Chemistry, 90-92 Panduri St., RO-050663, Bucharest, Romania;

16:00 **Bi2O3 thin films surface responses under KrF excimer laser treatment** **JP.VIII 23**
O. Van Overschelde (a), S. Konstantinidis (a), M. Buffière (c;d) , R. Snyders (a;b)
a) Chimie des interactions Plasma-Surface, Université de Mons, 20 place du parc, 7000 Mons, Belgium b) Materia Nova research center, 1 Avenue Nicolas Copernic, 7000 Mons, Belgium c) Department of Electrical Engineering, KU Leuven, Kasteelpark Arenberg 10, B-3001 Heverlee, Belgium d) Imec, Kapeldreef 75, B-3001 Heverlee, Belgium

16:00 **Improved surface coverage and conductivity of Cu complex ink-coated films by laser sintering** **JP.VIII 24**
(a) Jeonghyeon Lee, (b) HeungYeol Lee
(a) Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea; (b) Surface Engineering R&D Group, Korea Institute of Industrial Technology, Incheon 406-840, Korea

16:00 **Micro- and nanoparticles of CdMnTe generated by pulsed laser ablation in liquids** **JP.VIII 25**
A.I. Savchuk, F. Gontad, A. Perrone, I.D. Stolyarchuk, O.A. Savchuk, O.A. Shporta, V.I. Garasym
Department of Physics of Semiconductors and Nanostructures, Chernivtsi National University, 2 Kotsubynsky Str., 58012 Chernivtsi, Ukraine ; University of Salento, Department of Mathematics and Physics "E. De Giorgi" and National Institute of Nuclear Physics, 73100 Lecce, Italy

16:00 **Photo-fragmentation of selenium powder by excimer laser ablation in water** **JP.VIII 26**
O. Van Overschelde (1), G. Guisbiers (1,2)
(1) Chimie des Interactions Plasma-Surface, CIRMAP, Research Institute for Science and Material Engineering, University of Mons, Place du Parc n°23, 7000 Mons (Belgium) (2) Materia Nova, R & D center, Avenue Nicolas Copernic n°1, 7000 Mons (Belgium)

16:00 **Laser nanopatterning of glass and glass covered by aluminum thin film** **JP.VIII 27**
O. Krylov, S. Nedilko, S. Rozouvan
Taras Shevchenko National University of Kyiv, Physics Dept. . Acad.Glushkova 4b, Kyiv, Ukraine

16:00 **New kind of micro-system based on pure or doped amorphous-carbon films designed by pulsed laser for detection of toxic metals, emerging pollutants and pathogens** **JP.VIII 28**
C.Maddi a, T. Tite a, N. Zehani c, P. Fortang c, A.-S. Loir a, V. Barnier b, K. Wolski b, T.C. Rojas d, J.C. Sanchez-Lopez d, C. Donnet a, F. Garrelie a, C. Chaix c, P. Namour c, N. Jaffrezic-Renault c
a Université de Lyon, F-69003, Lyon, France, Université de Saint-Étienne, Laboratoire Hubert Curien (UMR 5516 CNRS), 42000 Saint Étienne, France ; b Laboratoire Georges Friedel, Ecole Nationale Supérieure des Mines de Saint Etienne, France ; c Université de Lyon, F-69003, Lyon, France, Université Claude Bernard Lyon 1, Institut des Sciences Analytiques (UMR 5280 CNRS), 69622 Villeurbanne, France ; d Instituto de Ciencia de Materiales de Sevilla (CSIC-US), Avenida Americo Vespucio 49, 41092 Sevilla, Spain

16:00 **MAPLE deposition of biodegradable silk fibroin/poly(sebacic acid) diacetoxy terminated composite coatings** **JP.VIII 29**
N. Stefan1, F.M. Miroiu1, A. Visan1, O.L. Rasoga2, I. Zgura2, C.Nita1, A. Stanculescu2, G. Socol1
1National Institute for Lasers, Plasma, and Radiation Physics, 409 Atomistilor 077125, Magurele - Bucharest, Romania; 2 National Institute for Materials Physics, 105 Atomistilor 077125, Magurele - Bucharest, Romania

16:00 **Structure and valence properties of ceria films synthesised by laser ablation under reducing atmosphere** **JP.VIII 30**
A Pereira1, M Blouin2, A Pillonnet1, D Guay2
1 Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne cedex, France ; 2 INRS-EMT, 1650 Boulevard Lionel-Boulet, C.P. 1020, Varennes, Québec J3X1S2, Canada

16:00 **Improved retention in Ar+ ion irradiated BiFeO3 thin films** **JP.VIII 31**
L. Jin,1 Y. Shuai,1 T. You,2 N. Du,2 D. Bürger,2 I. Skorupa,2 W. Luo,1 C. Wu,1 W. Zhang,1 X. Ou,3 S. Zhou,3 Oliver G. Schmidt,2,4 and H. Schmidt2
1. State Key Laboratory of Electronic Thin Films and Integrated Devices, UESTC, 610054 Chengdu, China; 2. Technische Universität Chemnitz, Department of Materials for Nanoelectronics, Faculty of Electrical Engineering and Information Technology, Chemnitz 09126, Germany; 3. Helmholtz-Zentrum Dresden-Rossendorf, 01314 Dresden, Germany; 4. Institute for Integrative Nanosciences, IFW Dresden, Helmholtzstraße 20, Dresden 01069, Germany

16:00 **Metallic tin-based nanoparticles synthesis by laser pyrolysis: parametric studies focused on the decreasing of the crystallite size** **JP.VIII 32**
E. Dutu1, F. Dumitrache1, C. T. Fleaca1, I. Morjan1, L. Gavrila-Florescu1, I. Sandu, M. Scarisoreanu1, I. P. Morjan1, C. Luculescu1 , A. M. Niculescu1 , E. Vasile2
1 National Institute for Lasers, Plasma and Radiation Physics, Lasers Dept, Bucharest - Magurele, 409, Atomistilor Street, 077125, Romania; 2 METAV SA, Res & Dev., 31, C. A. Rosetti Street, 020011, Bucharest, Romania

16:00 **Hydroxyapatite thin films obtained by PLD and MAPLE: comparative study of physical, chemical and biological properties** **JP.VIII 33**
G. Popescu-Pelin1, F. Sima1, G. Socol1, L. Sima2, C. Ristoscu1, I. N. Mihailescu1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2 Institute of Biochemistry of the Romanian Academy, Bucharest, Romania

16:00 **Processing of the precursors in SiC synthesis by laser pyrolysis** **JP.VIII 34**
L. Gavrila-Florescu, E. Popovici, I. Morjan
National Institute for Lasers, Plasma and Radiation Physics, P.O. Box MG-36, Bucharest, Romania

16:00 **Real-time laser diagnostic of CNTs growth : In-situ Raman spectroscopy** **JP.VIII 35**
Thibault Labbaye(1), Mireille Gaillard(1), Eva Kovacevic(1), Thomas Lecas(1), Nadjib Semmar(1), Chantal Boulmer-Leborgne(1), Mohamed-Ramzi Ammar(2), Nicole Raimboux(2), Patrick Simon(2) and Aurélien Canizarès(2)
(1) GREMI, Université-CNRS, BP6744, 45067 Orléans cedex 2, France (2) CEMHTI, CNRS, 45071 Orléans cedex 2, France

16:00 **LASER annealing process for solution processed ITO films** **JP.VIII 36**
Han-Ki Kim, Jin-A Jeong, Chang-Hyun Cho, and Kwon-Bum Chung
Kyung Hee University; Kyung Hee University; Kyung Hee University; and Dankook University

16:00 **Comparative study on the deposition of biodegradable PCL/PLA blend coatings** **JP.VIII 37**
C.Nita1,2, E. Axente1, F. Sima1, I. Iordache1, R. Cristescu1, A. Visan1, I. Zgura3, O.L. Rasoaga3, C.S. Breazu3, A. Stanculescu3, G. Socol1
1Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, Magurele, Ilfov RO-77125, Romania 2Faculty of Physics, University of Bucharest, 405 Atomistilor Street, Magurele, Ilfov RO-77125, Romania 3 National Institute of Materials Physics, 105 Atomistilor Street, Magurele, Ilfov RO-77125, Romania

16:00 **High magnetic Fe2O3 nanoparticles synthesized by laser pyrolysis used for biological and heat transfer applications** **JP.VIII 38**
F. Dumitrache, I. Morjan, C. Fleaca, C. Luculescu, A. Niculescu, A. Badoi, L. Vegas, O. Marinica, G. Manda, S. Pop, G. Huminic, A. Huminic
1. NILPRP 409 Atomistilor st., Magurele, Romania 2. Romanian Academy Timisoara branch, Timisoara, Romania 3. «Victor Babes» National Institute of Research-Development in the Pathology Domain and Biomedical Sciences Splaiul Independenţei nr. 99 - 101, sector 5, 050096 Bucureşti 4. Trasilvania University , Brasov, Romania

16:00 **The effects induced in transition metal nitrides thin films by heavy ions irradiation** **JP.VIII 39**
G. Dorcioman1, G. Socol1, D. Craciun1, N. Stefan1, Dominique Gosset2, David Simeone2, V. Craciun1
1Laser Department, National Institute for Laser, Plasma, and Radiation Physics, Bucharest-Magurele, Romania; 2 DMN/SRMA-LA2M, LRC CARMEN CEA Saclay, France

16:00 **Deposition and characterization of calcium phosphates/poly(3-hydroxybutyrate-co-3-hydroxyvalerate) biocomposite coatings** **JP.VIII 40**
G. Socoll*, V. Grumezescu1, C. Nita1, G. Dorcioman1, N. Stefan1, M. Miroiu1, I. Zgura2, M. Socol2, A. Visan1, G. Popescu-Pelin1, R. Cristescu1, O. Rasoga2, C.S. Breazu2, A. Stanculescu2
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2 National Institute of Materials Physics, Magurele, Ilfov, Romania

16:00 **MAPLE deposition of organic structures on IZO flexible substrates** **JP.VIII 41**
M. Socol1, N. Preda1, O. Rasoga1, A. Stanculescu1,C. Breazu1, F. Stanculescu2, G. Socol3
1 National Institute of Material Physics,105 bis Atomistilor Street, PO Box MG-7, 077125, Bucharest-Magurele, Romania 2 University of Bucharest, Faculty of Physics, 405 Atomistilor Street, PO Box MG-11, 077125, Bucharest-Magurele, Romania 3National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-36, 077125, Bucharest-Magurele, Romania

16:00 **Synthesis of Nickel silicides by excimer laser irradiation for photovoltaic application** **JP.VIII 42**
T. Schutz-Kuchly1, N. Zimmermann1, J. Bartringer1, D. Muller1, A. Slaoui1, D. Aureau2, R. Cabal 3
1 Laboratoire ICUBE, Universit? de Strasbourg and CNRS, 23 rue du Loess, 67037 Strasbourg, France 2 Institut Lavoisier de Versailles, Universit? de Versailles-St-Quentin en Yvelines, 45 avenue des Etats Unis, 78000 Versailles, France 3 CEA-INES 50 avenue du Lac L?man, 73375 Le Bourget du Lac, FRANCE

16:00 **Fabrication of cardiovascular drug delivery systems by matrix-assisted pulsed laser evaporation** **JP.VIII 43**
Alexandra Palla Papavlu, Valentina Dinca, Maria Dinescu
National Institute for Lasers, Plasma, and Radiation Physics, Bucharest-Magurele, MG 16, ZIP 077125, Romania

16:00 **Silver nanoparticle-oligothiophene nanocomposites and related time-resolved spectroscopy studies and structural properties** **JP.VIII 44**
A. Guarnaccio (1,2), P. A. Loukakos (3), D. Anglos (3), A. Santagata (1), M. D'Auria (2), R. Racioppi (2), R. Teghil (1,2), A. De Bonis (1,2)
(1) CNR-ISM U.O.S. Potenza, Zona Ind. – 85050 Tito Scalo (PZ) – Italy; (2) Department of Science, University of Basilicata, Via dell'Ateneo Lucano 10 – 85100 Potenza – Italy; (3) Institute of Electronic Structure and Laser -IESL, Foundation for Research and Technology Hellas – FORTH, 71110 Heraklion, Greece

16:00 **Synthesis, coordination chemistry, and photophysical properties of the 2-chloroethoxy-iron(III)(ethylthio) porphyrazine** **JP.VIII 45**
D. Pietrangeli (a), A. Santagata (a), P. A. Loukakos (b)
(a) CNR-ISM U.S.O. Potenza, Zona Ind. 85050 Tito Scalo (Pz) Italy; (b) Institute of Electronic Structure and Laser - IESL, Foundation for Research and Technology Hellas - FORTH, 711 10 Heraklion, Greece

16:00 **Precise surface modification of polymethyl-methacrylate with near-infrared femtosecond laser** **JP.VIII 46**
F. Caballero-Lucas, C. Florian, J.M. Fernández-Pradas, J.L. Morenza, P. Serra
Departament de Física Aplicada i Òptica, Universitat de Barcelona, Martí i Franquès 1, E-08028 Barcelona, Spain

16:00 **Laser assisted nitriding and surface characterization of titanium alloy Ti6Al4V for dental applications** **JP.VIII 47**
A. May (1), N. Agarwal (1), M. Lambert (1), C. Kaan Akkan (2), F. Nothdurft (3), C. Aktas (1)
(1) Leibniz Institute for New Materials, CVD/Biosurfaces, Saarbrücken, Germany (2) Institute of Biomedical Engineering, Boğaziçi University, Istanbul, Turkey (3) Department of Prosthetic Dentistry and Dental Materials Science, Saarland University, Homburg/Saar, Germany

16:00 **Bi0.5Sb1.5Te3 thin films for thermoelectric cooling applications** **JP.VIII 48**
E. Symeou, M. Pervolaraki, C. N. Mihailescu, G. I. Athanasopoulos, Ch. Papageorgiou, Th. Kyratsi, and J. Giapintzakis
Nanotechnology Research Center and Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus

16:00 **Fabrication and characterization of functionalized surfaces with silicon polymer films for anti-infective therapy applications** **JP.VIII 49**
Alexandru Mihai Grumezescu1, Alina Maria Holban3, Gabriel Socol2, Bogdan Stefan Vasile1, Rodica Cristescu2, Valentina Grumezescu1,2, Denisa Ficai4, Anton Ficai1, Roxana Twrusca5, Elena Grosu6, Florin Iordache7
1Department of Science and Engineering of Oxidic Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 2Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania 3Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1–3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 4Department of Inorganic Chemistry, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 5S.C. Metav-CD S.A., 31Rosetti Str., 020015 Bucharest, Romania 6CPE-Bistrita SA, Parcului street no7, 420035 Bistrita, Romania 7Institute of Cellular Biology and Pathology of Romanian Academy, "Nicolae Simionescu", Department of Fetal and Adult Stem Cell Therapy, 8, B.P. Hasdeu, Bucharest 050568, Romania

16:00 **Transfer by pulsed laser deposition of biological hydroxyapatite thin films doped with MgF2, MgO and Ti** **JP.VIII 50**
N. Mihailescu1, G. E. Stan2, L. Duta1, F. N. Oktar3-5, M. Sopronyi1, C. Luculescu1, M. C. Chifiriuc6, C. Ristoscu1, I. N. Mihailescu1
1National Institute for Lasers, Plasma and Radiation Physics, Lasers Department, 409 Atomistilor Street, Magurele, Romania 2National Institute of Materials Physics, 105 bis Atomistilor Street, Magurele, Romania 3Department of Bioengineering, Faculty of Engineering, Marmara University, Goztepe, Istanbul 34722, Turkey 4Department of Medical Imaging Technics, Vocational School of Health Services, Marmara University, Uskudar, Istanbul 34668, Turkey 5Nanotechnology and Biomaterials Application & Research Centre, Marmara University, Istanbul, Turkey 6Department of Microbiology, Faculty of Biology, University of Bucharest, 1-3 Portocalelor Street, Bucharest, Romania

16:00 **Comparison between femtosecond and nanosecond laser processing of PDMS polymer: Raman spectroscopy investigation** **JP.VIII 51**
N.E. Stankova, P.A. Atanasov, T.R. Stoyanchov, K.N. Kolev, E. Valova, J. Georgieva, St. Armyanov
Institute of Electronics, Bulgarian Academy of Sciences; Institute of Physical Chemistry, Bulgarian Academy of Sciences

16:00 **AN INEXPENSIVE ALTERNATIVE TECHNIQUE FOR LASER-INDUCED SURFACE MODIFICATION IN BISMUTH THIN FILMS** **JP.VIII 52**
Adela Reyes Contreras, Alejandro Esparza García, Oscar Olea Mejía, Mathieu Hautefeuille, Marco Antonio Camacho-López
Facultad de Ciencias - Universidad Autónoma del Estado de México, Departamento de Tecnociencias - Centro de Ciencias Aplicadas y DEsarrollo Tecnológico - Universidad Nacional Autónoma de México, Centro Conjunto de Investigación en Química Sustentable - UNAM-UAEM, Facultad de Ciencias - Universidad Autónoma del Estado de México, Facultad de Química - Universidad Autónoma del Estado de México

16:00 **In-process measurement of the impact of laser irradiation on the electrical properties of thin-film samples** **JP.VIII 53**
Klaus Zimmer1, Xi Wang1, Pierre Lorenz1, Martin Ehrhardt1, Christian Scheit2, Alexander Braun2
1 Leibniz-Institut für Oberflächenmodifizierung e. V., Permoserstraße 15, 04318 Leipzig, Germany; 2 Solarion AG, Ostende 5, 04288 Leipzig, Germany

16:00 **Femtosecond laser-induced refractive index change in dielectrics: Newton ring formation** **JP.VIII 54**
J. Hernandez-Rueda,M. Garcia-Lechuga, J. Siegel, J. Solis
Laser Processing Group, Instituto de Óptica, CSIC, Serrano 121, 28006 Madrid, Spain

16:00 **Spatiotemporal dynamics of ultrashort pulse laser excitation of transparent dielectrics: Modeling based on Maxwell?s equations** **JP.VIII 55**
Vladimir V. Zhukov, Nadezhda M. Bulgakova
V.P. Zhukov: (1) Institute of Computational Technologies SB RAS, 6 Lavrentyev Ave., 630090 Novosibirsk, Russia; (2) Novosibirsk State Technical University, 20 Karl Marx ave., 630073, Novosibirsk, Russia; N.M. Bulgakova: (1) HiLASE Project, Institute of Physics ASCR, Na Slovance 2, 18221 Prague, Czech Republic; (2) Institute of Thermophysics SB RAS, 1 Lavrentyev Ave., 630090 Novosibirsk, Russia

16:00 **Femtosecond Laser Ablation of Molybdenum** **JP.VIII 56**
PINAKI DAS GUPTA, GERARD O'CONNOR
National University of Ireland, Galway, Ireland

16:00 **Physical-chemical transformations of organic compounds under intense laser influences** **JP.VIII 57**
K. V. Khishchenko
Joint Institute for High Temperatures RAS, Moscow, Russia

16:00 **Matrix Assisted Pulsed Laser Evaporation of Biological Thin Films: Lipase** **JP.VIII 58**
A.Aronne (a), F. Bloisi (b), R. Calabria (c), V. Califano (c), L. E. Depero (d), E. Fanelli (a), S. Federici (d), P. Massoli (c), L. Vicari (b)
(a) Department of Material and production engineering, University of Naples Federico II (b) CNR-SPIN and Department of Physics, University of Naples Federico II (c) Istituto Motori-CNR (d) DIMI, University of Brescia

16:05 **Fs-Laser Processing of Polydimethyl Siloxane** **JP.VIII 59**
P.A. Atanasov, N.N. Nedyalkov, E.I. Valova, J.S. Georgieva, St.A. Armyanov, K.N. Kolev, S. Amoruso, X. Wang, R. Bruseze, M. Sawczak, G. Śliwiński
P.A. Atanasov, N.N. Nedyalkov; Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko shose, Sofia 1784, Bulgaria E.I. Valova, J.S. Georgieva, St.A. Armyanov, K.N. Kolev; Rostislaw Kaischew Institute of Physical Chemistry, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., block 11, Sofia 1113 S. Amoruso, X. Wang, R. Bruseze; CNR-SPIN, Dipartimento di Scienze Fisiche, Universita degli Studi di Napoli Federico II, Complesso Universitario di Monte S. Angelo, Via Cintia, I-80126 Napoli, Italia M. Sawczak, G. Śliwiński; Photophysics Department, The Szewalski Institute, Polish Academy of Sciences, 14 Fiszera St, 80-231 Gdańsk, Poland

16:05 **Laser transfer and reduction of graphene oxide and chemical sensing applications** **JP.VIII 60**
S. Papazoglou1, V. Tsouti2, Y. S. Raptis1, S. Chatzandroulis2, I. Zergioti1
1National Technical University of Athens, Physics Department, Iroon Polytehneiou 9, 15780 Zografou, Athens, Greece 2Institute of Microelectronics, NCSR Demokritos, Athens, Greece

16:05 **Dimension analysis of the refractive index change in borosilicate glass induced by femtosecond laser irradiation** **JP.VIII 62**
A. Dias 1 2, M. Gómez-Aranzadi 1 2, A. Pan 1 2, A. Rodriguez 2, S. M. Olaizola 1 2
1 CEIT-IK4 and Tecnun (University of Navarra), Manuel Lardizabal 15, 20018 San Sebastián 2 CIC microGUNE, Goiru Kalea 9 Polo Innovación Garaia, 20500 Arrasate-Mondragón, Spain.

Laser Processing: Laser writing and applications : N. Semmar

08:30 **Direct Laser Writing: Principles and Applications in Photonics, Metamaterials and Biomedicine (Invited)** J.VIII 1
Maria Farsari
N. Plastira 100, Vassilika Vouton, 71300, Heraklion, Crete, Greece.

09:00 **Photo-inscription of surface relief gratings in sol-gel materials** J.VIII 2
N. Desboeufs, AD. Vu K. Lahlil, L. Martinelli, J. Peretti, Y. Lassailly, JP. Boilot, T. Gacoin
Laboratoire de Physique de la Matière Condensée, UMR 7643-CNRS, Ecole Polytechnique, 91128 Palaiseau Cedex, France

09:15 **Two-photon lithographic fabricated plasmonic nanowires for anti-counterfeiting application** J.VIII 3
Xing Yi LIng
Nanyang Technological University, Singapore

09:30 **Laser scribing of thin film solar cells** J.VIII 4
Michele Sozzi, Daniele Menossi, Alessio Bosio, Annamaria Cucinotta, Nicola Romeo, Stefano Selleri
Dept. of Information Engineering, University of Parma, Parma, Italy; Dept. of Physics and Earth Sciences, University of Parma, Parma, Italy; Dept. of Information Engineering, University of Parma, Parma, Italy; Dept. of Physics and Earth Sciences, University of Parma, Parma, Italy; Dept. of Information Engineering, University of Parma, Parma, Italy

09:45 **Femtosecond ablation using an intensity spatial light modulator: What is the minimum machinable feature size?** J.VIII 5
B. Mills*, D. J. Heath, J. A. Grant-Jacob, M. Feinaugle and R. W. Eason
Optoelectronics Research Centre, University of Southampton, Southampton, UK.

10:00 **Cofee Break**

Laser processing: Modification of material properties : L. Zhigilei

10:30 **New Material Phases through Fs-Laser Induced Confined Microexplosion (Invited)** J.IX 1
L. Rapp (1), B. Haberl (2), C. J. Pickard (3), J. E. Bradby (2), J. S. Williams (2), E. G. Gamaly (1), A. V. Rode (1)
(1) Laser Physics Centre and (2) Electronic Materials Engineering, Research School of Physics and Engineering, The Australian National University, Canberra ACT 0200 Australia (3) Department of Physics and Astronomy, University College London, London WC1E 6BT, UK

11:00 **Shifting the VO2 phase transition: A chromium doping solution** J.IX 2
R. Zaabi, JC Orlianges, F.Dumas Bouchiat ,C.Champeaux
SPCTS UMR 7315 CNRS / Université de Limoges Centre Européen de la Céramique - 12 rue Atlantis, 87068 Limoges, France

11:15 **Femtosecond Laser Magnetic Patterning of Fe-V Thin-Film Alloys Based on Ultrafast Diffusive Transformations** J.IX 3
N. I. Polushkin^1,2, V. Oliveira^1,3, O. Conde^2, R. Vilar^1,
^1University of Lisbon, Instituto Superior Tecnico and ICEMS, 1049-001 Lisbon, Portugal; ^2University of Lisbon, Faculty of Sciences and ICEMS , 1749-016 Lisbon, Portugal; ^3Instituto Superior de Engenharia de Lisboa and ICEMS, 1959-007 Lisbon, Portugal

11:30 **Nanosecond-laser-induced graphitization and amorphization of thin nanocrystalline graphite films** J.IX 4
Loïc Loisel,Bérengère Lebental,Majid Kabiri Samani,Chong Wei Tan,Costel Sorin Cojocaru,Dominique Baillargeat,Beng Kang Tay
CINTRA CNRS/NTU/THALES, UMI 3288, Research Techno Plaza, 50 Nanyang Drive, Border X Block, Level 6, Singapore 637553, School of Electrical and Electronic Engineering, Nanyang Technological University, 50 Nanyang Avenue, SINGAPORE 639798, Laboratoire de Physique des Interfaces et Couches Minces (LPICM), UMR 7647, Ecole Polytechnique-CNRS, Palaiseau, France; Laboratoire de Physique des Interfaces et Couches Minces (LPICM), UMR 7647, Ecole Polytechnique-CNRS, Palaiseau, France, Université Paris-Est, IFSTTAR, Cosys, 14 - 20 Bd Newton, Champs-Sur-Marne, F-77447, Marne-la-Vallée, France; School of Electrical and Electronic Engineering, Nanyang Technological University, 50 Nanyang Avenue, SINGAPORE 639798; School of Electrical and Electronic Engineering, Nanyang Technological University, 50 Nanyang Avenue, SINGAPORE 639798; Laboratoire de Physique des Interfaces et Couches Minces (LPICM), UMR 7647, Ecole Polytechnique-CNRS, Palaiseau, France; XLIM Laboratory, Unité Mixte de Recherche, CNRS 6172, University of Limoges, 87060 Limoges, France; CINTRA CNRS/NTU/THALES, UMI 3288, Research Techno Plaza, 50 Nanyang Drive, Border X Block, Level 6, Singapore 637553, School of Electrical and Electronic Engineering, Nanyang Technological University, 50 Nanyang Avenue, SINGAPORE 639798

11:45 **Ultrafast laser-induced Faraday rotation in ferromagnetic EuO films** J.IX 5
Takayuki Makino
University of Fukui, Japan; CEMS, RIKEN, Japan

12:00 **Lunch until 13:30**

Poster Sesion J: Laser-assisted deposition & processing methods for the development of advanced materials : M. Castillejo, M. Farsari, F. Garrelie & N. Bulgakova __NOTE Early Start: 13h30

13:30 **Random lasing correlated with structural properties of ZnO thin films grown by pulsed-laser deposition** JP.XI 1
C. Cachoncinlle (1), C. Hebert (2,3), J. Perriere (2,3), W. Seiler (4), E. Millon (1)
1) GREMI, UMR 7344 CNRS-Université Orléans, 45067 Orléans Cedex 2, France; 2) Sorbonne Universités, UPMC Univ Paris VI, UMR 7588, INSP, 75005, Paris, France 3) CNRS, UMR 7588, INSP, 75005, Paris, France 4) PIMM, UMR 8006 CNRS-ENSAM, 75013 Paris, France

13:30 **Growth and properties of Zn-Fe oxide thin films** JP.XI 2
C. Hebert1,2, N. Jedrecy1,2, J. Perrière1,2, E. Millon3, M. Nistor4, W. Seiler5,
1-Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, INSP, F-75005, Paris, France 2-CNRS, UMR 7588, INSP, F-75005, Paris, France 3-GREMI, UMR 7344 CNRS-Université d'Orléans, 45067 Orléans Cedex 2, France 4-National Institute for Lasers, Plasma and Radiation Physics (NILPRP), L22 P.O. Box. MG-36, 77125 Bucharest-Magurele, Romania 5-PIMM, UMR CNRS 8006 Arts et Métiers ParisTech, 151 Boulevard de l'Hopital, 75013 Paris, France

13:30 **NANOPARTICLE-DECORATED CERAMIC AS SUBSTRATE IN SURFACE ENHANCED RAMAN SPECTROSCOPY** JP.XI 3
N.Nedyalkov, Ru. Nikov, M. Koleva, P.A. Atanasov
Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko shousse 72, Sofia 1784, Bulgaria

13:30 **Pulsed Laser Ablation of Cu2ZnSn multi-metallic target: Composition and Morphology Studies** JP.XI 4
Stela Canulescu(1), Andrea Cazzaniga(1), Rebecca B. Ettlinger(1), Jørgen Schou(1) and Nini Pryds(2)
(1)DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark
(2)DTU Energy Conversion, Technical University of Denmark, DK-4000 Roskilde, Denmark

13:30 **Current-carrying abilities of high-temperature superconductor (YBa2Cu3O7-x) PLD thin films with a different nanostructure** JP.XI 5
V.I.Matsuy, V.S.Flis, V.O.Moskalyuk, A.L.Kasatkin, N.A.Skoryk, V.L.Svechnikov
Institute of Metal Physics, NASU, 03142 Kiev, 36 Vernadsky st., Ukraine

13:30 **Sum-frequency mixing in laser ablation plasmas of boron carbide** **JP.XI 6**
Mohamed Oujja, Antonio Benítez-Cañete, Mikel Sanz, Ignacio Lopez-Quintas, Rebeca de Nalda, Marta Castillejo*
Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain

13:30 **Combine free cluster generator with pulsed laser deposition: a flexible route to produce nanocomposite materials** **JP.XI 7**
M. GAUDIN, F. DUMAS-BOUCHIAT, J.C. ORLIANGES, C. CHAMPEAUX
SPCTS, UMR 7315, Université de Limoges/CNRS, 12 rue Atlantis, 87068 Limoges Cedex, France

13:30 **Contact-free measurement technique for thermoelectric power of Au nano-clusters deposited on graphite by pulsed laser deposition** **JP.XI 8**
Troyan V.I., Borisyuk P.V., Vasilyev O.S., Lebedinskii Yu.Yu.
National Research Nuclear University (NRNU MEPHI)

13:30 **Control of pentacene thin film growth deposited by conventional PLD** **JP.XI 9**
A. Pereira1, Y. Larmande1, J. Penuelas2, S. Guy1
1 ILM- Université de Lyon, Université Lyon 1, CNRS UMR5306, Villeurbanne F-69622, France ; 2 Institut des Nanotechnologies de Lyon - Université de Lyon, CNRS UMR5270, Ecole Centrale de Lyon, Ecully F-69134, France

13:30 **Characterization of nanocomposite cobalt ferrite/ magnetite films grown by pulsed laser deposition on SrTiO3 substrates** **JP.XI 10**
Mikel Sanz 1, Mohamed Oujja 1, Esther Rebollar 1, José F. Marco 1, Juan de la Figuera 1, Matteo Monti 1, Adrián Quesada 2, Alberto Bollero 3, Julio Camarero 3,4, Francisco J. Pedrosa 3, Marta Castillejo 1*
1 Instituto de Química Física Rocasolano, CSIC, 28006 Madrid, Spain; 2 Instituto de Cerámica y Vidrio, CSIC, Campus Universidad Autónoma de Madrid, 28049 Madrid, Spain; 3 IMDEA Nanoscience, Instituto Madrileño de Estudios Avanzados en Nanociencia, Madrid, Spain; 4 Departamento de Física de la Materia Condensada, Instituto Nicolás Cabrera, Campus Universidad Autónoma de Madrid, 28049 Madrid, Spain

13:30 **Surface modification of middle ear implants using Double Laser Beam Interference technique** **JP.XI 11**
P. Kwasniak(1), J. Pura(1), M. Zwolinska(1), H. Skarzynski(2,3), L. Olszewski(2,3), J. Marczak(4), H. Garbacz(1), K.J. Kurzydlowski(1)
(1) Faculty of Materials Science and Engineering, Warsaw University of Technology, Poland; (2) Institute of Physiology and Pathology of Hearing, Warsaw, Poland; (3) World Hearing Center, Kajetany, Poland; (4) Military University of Technology, Institute of Optoelectronics, Poland;

13:30 **γ-cyclodextrine/usnic acid thin film fabricated by MAPLE for improving the resistance of medical surfaces to Staphyloccocus aureus colonization** **JP.XI 12**
Valentina Grumezescu1, Alina Maria Holban2, Alexandru Mihai Grumezescu3, Gabriel Socol1, Bogdan Stefan Vasile3, Anton Ficai3, Roxana Trusca4, Florin Iordache5
1Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania 2Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1–3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 3Department of Science and Engineering of Oxidic Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 4S.C. Metav-CD S.A., 31Rosetti Str., 020015 Bucharest, Romania 5Institute of Cellular Biology and Pathology of Romanian Academy, “Nicolae Simionescu”, Department of Fetal and Adult Stem Cell Therapy, 8, B.P. Hasdeu, Bucharest 050568, Romania

13:30 **Tetracycline local delivery from γ-aminobutiric acid-silica networks thin films for preventing microbial infections** **JP.XI 13**
Valentina Grumezescu1,2,, Ecaterina Andronescu2, Gabriel Socol1, Alina Maria Holban3, Alexandru Mihai Grumezescu2, Anton Ficai2, Roxana Trusca4, Florin Iordache5
1Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania 2Department of Science and Engineering of Oxidic Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1?7 Polizu Street, 011061 Bucharest, Romania 3Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1?3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 4S.C. Metav-CD S.A., 31Rosetti Str., 020015 Bucharest, Romania 5Institute of Cellular Biology and Pathology of Romanian Academy, ?Nicolae Simionescu?, Department of Fetal and Adult Stem Cell Therapy, 8, B.P. Hasdeu, Bucharest 050568, Romania

13:30 **LASER INDUCED PHASE-STRUCTURE CHANGES IN IRON OXIDE NANO-PARTICLES** **JP.XI 14**
1,2 N.N.Tarasenka, 1 D.A.Kotsikau, 2 N.V.Tarasenko, 1 V.V.Pankov
1 Belarusian State University, 4 Nezalezhnasti Ave., 220002 Minsk, Belarus, 2 Institute of Physics, National Academy of Sciences of Belarus, 68 Nezalezhnasti Ave., 220072 Minsk, Belarus

13:30 **Induced processes in binary metal-semiconductor eutectic nano-structured systems.** **JP.XI 15**
Tamara P. Doroshenko
V. E. Lashkaryov Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, Kyiv

13:30 **Er/Yb doped LiYF4 thin films obtained by pulsed laser deposition of a silica xerogel** **JP.XI 16**
F. Stokker-Cheregi1, A. Matei1, M. Dinescu1, C. E. Secu2, M. Secu2
1 National Institute for Laser, Plasma and Radiation Physics, Bucharest-Magurele 077125, Romania 2 National Institute for Materials Physics, Bucharest-Magurele, 077125, Romania

13:30 **Gold thin films synthesized by pulsed laser deposition using a picosecond laser source: future sensing platforms** **JP.XI 17**
C. Popescu1, M. Pervolaraki2, A.C. Popescu1*, G.E. Stan3, I. Pasuk3, I. Iordache (Urzica)1, G.I. Athanasopoulos2, J. Giapintzakis2
1 National Institute for Lasers, Plasma and Radiation Physics, Bucharest-Magurele, Romania 2 Nanotechnology Research Center and Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus 3 National Institute of Materials Physics, Bucharest-Magurele, Romania

13:30 **Synthesis and photocatalytic properties of novel multifunctional TiO2-based magnetic nanocomposite** **JP.XI 18**
M. Scarisoreanu1, I. Morjan1, C-T Fleaca1, I.P.Morjan1, A.Niculescu1, E.Dutu1, A.Badoi1, R. Birjega1, C. Luculescu1, E. Vasile2, V. Danciu3, G. Filoti4,
1 National Institute for Lasers, Plasma and Radiation Physics, POB MG-36, Bucharest 077125, Romania; 2 Metav, Research and Development, 31 C.A. Rosetti Str, 020011, Bucharest, Romania; 3National Institute for Materials Physics (NIMP), Atomistilor 105bis, P.O. Box MG7, R-077125 Magurele, Bucharest, Romania; 4 ,,Babes-Boyai? University, Faculty of Chemistry and Chemical Engineering, Electrochemical Research Laboratory, 11 Arany Janos Str, Cluj- Napoca, 400028, Romania;

13:30 **Combined micro- and nanoscale topography on Zirconia surfaces modulates human mesenchymal stem cells growth and cell nuclei alignment** **JP.XI 19**
L.E. Sima1, V. Dinca2*, L. Rusen2,3, M. Cazan4, M. Chiritoiu1, A. Palla-Papavlu2 and M. Dinescu2
1Department of Molecular Cell Biology, Institute of Biochemistry, Romanian Academy, 296 Splaiul Independentei, 060031 Bucharest 17, Romania 2Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, 409 At-omistilor Street, PO Box MG-16, Zip RO-077125, Magurele, Bucharest, Romania 3Faculty of Physics, Univesity of Bucharest, RO-077125, Magurele, Bucharest, Romania 4 University of Medicine and Pharmacy «Carol Davila» Bucharest, Romania

13:30 **Proliferation of cell cultures on polymers coated laser patterned Ti substrates** **JP.XI 20**
F. Stokker-Cheregi1, A. Matei1, M. Dumitru1, M. Zamfirescu1, C. Mustaciosu2, A. Acasandrei2, M. Dinescu1
1 National Institute for Lasers, Plasma, and Radiation Physics, Bucharest 77125, Romania 2 National Institute of Physics and Nuclear Engineering «Horia Hulubei», RO-77125 Magurele, Bucharest, Romania

13:30 **Fatty acids/ layered double hydroxides (LDH) composite thin films deposited by MAPLE and PLD** **JP.XI 21**
R. Birjega1, A. Matei1, B. Mitu1, A. Vlad1, M. Dinescu1, R. Zavoianu2, M. C. Corobea3
1. National Institute for Lasers, Plasma and Radiation Physics, Romania 2. Faculty of Chemistry, University of Bucharest, Romania 3. National R.&S. Institute for Chemistry and Petrochemistry, ICECHIM, 202 Splaiul Independentei Str., CP-35-274, 060021, Bucharest, Romania

13:30 **The grain size dependence of piezoelectric properties on ZnO films grown by pulsed laser ablation** **JP.XI 22**
Qin Wei Wei, Wang Rui□Li Tao□ Gao Zhi Qiang, Hu Xue Feng□Xu Meigui, Huang Shengming, Liang Qi, and Wei Zhang,*
a State Key Laboratory of Material-oriented Chemical Engineering and School of Chemical Engineering, Nanjing Tech University, Nanjing, Jiangsu 210009, PR China b School of Physical Science, Hefei University of Technology, Hefei, Anhui 230009, PR China

13:30 **Nanostructured tungsten oxide gas sensors prepared by pulsed laser deposition** **JP.XI 23**
M. Filipescu1, A. Palla Papavlu1,2, C.W. Schneider2, T. Lippert2, M. Dinescu1
1 National Institute for Lasers, Plasma, and Radiation Physics, Bucharest-Magurele, MG 16, ZIP 077125, Romania 2 General Energy Research Department, Paul Scherrer Institute, 5232 Villigen PSI, Switzerland

13:30 **Time-resolved imaging of multi-jet interaction during laser-induced forward transfer** **JP.XI 24**
(1) A. Patrascioiu, (1) J.M. Fernández-Pradas, (1) J.L. Morenza, (2) G. Hennig, (3) P. Delaporte, (1) P. Serra
(1) Departament de Física Aplicada i Òptica, Universitat de Barcelona, Martí i Franquès 1, E-08028 Barcelona, Spain; (2) DI Projeckt AG, Flugplatz, CH – 3368 Bleienbach, Switzerland; (3) Aix Marseille University, CNRS, LP3 UMR 7341, 163 Avenue de Luminy , 13288 Marseille, France

13:30 **Optical properties of nanocrystalline SiC thin films grown by pulsed laser deposition** **JP.XI 25**
V. Craciun1, A.C. Galca2, L. M. Trinca2, G. Socol1, D. Craciun1, E. Lambers3.
1National Institute for Laser, Plasma, and Radiation Physics, Magurele, Romania 2National Institute for Materials Physics, Magurele, Romania 3Major Analytical Instrumentation Center, University of Florida, Gainesville, FL 32611, USA

13:30 **Er and Eu doped TiO2 thin films grown by matrix assisted pulsed laser evaporation from colloidal solutions: structure and optical properties** **JP.XI 26**
L. Duta,1 C. Nita,1 I. Camps,2 R. Serna,2 M. Borlaf,3 M. T. Colomer,3 R. Moreno,3 A. Pérez del Pino,4 C. Logofatu,5 E. György1,4
1National Institute for Lasers, Plasma and Radiation Physics, PO Box MG 36, 76900 Bucharest V, Romania 2Laser Processing Group, Instituto de Óptica, CSIC, C/Serrano 121, 28006 Madrid, Spain 3Instituto de Cerámica y Vidrio CSIC, Kelsen 5, 28049, Madrid, Spain 4Instituto de Ciencia de Materiales de Barcelona, Consejo Superior de Investigaciones Científicas (ICMAB-CSIC), Campus UAB, 08193 Bellaterra, Spain 5National Institute for Materials Physics, PO Box MG. 7, 77125 Bucharest, Romania

13:30 **Adsorption of copper from aqueous solutions using layered double hydroxides thin films** **JP.XI 27**
A. Vlad1, R. Birjega1, A. Matei1, C. Luculescu1, M. Dinescu1, R. Zavoianu2, O.D. Pavel2
1National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., 77125 Bucharest- Magurele, Romania 2University of Bucharest, Faculty of Chemistry, Department of Chemical Technology and Catalysis, 4-12 Regina Elisabeta Bd., Bucharest, Romania

13:30 **Ge nanoparticle formation in amorphous TiGeO thin films by pulse laser annealing at low fluencies** **JP.XI 28**
V.S. Teodorescu*, C. Ghica*, A.V. Maraloiu*, M. Vlaicu*, A. Kuncser*, A.M. Lepadatu*, I. Stavarache*, M.L. Ciurea* , N.D. Scarisoreanu**, A. Andrei**, V. Ion**, M. Dinescu**
*National Institute of Material Physics, 105 bis Atomistilor Street, 077125 Bucharest-Măgurele, Romania **National Institute of Plasma Lasers and Radiation, 409 Atomistilor Street, 077125 Bucharest-Măgurele, Romania

13:30 **Shadow graph studies of laser-assisted non-thermal structuring of thin layers on flexible substrates by shock-wave-induced delamination processes.** **JP.XI 29**
P. Lorenz1, Tomi Smausz3, Tamás Csizmadia2, F. Frost1, M. Ehrhardt1, K. Zimmer1, B. Hopp2
1 Leibniz-Institut für Oberflächenmodifizierung e. V., Permoserstraße 15, 04318 Leipzig, Germany; 2 Department of Optics and Quantum Electronics, University of Szeged, H-6720 Szeged, Dóm tér 9, Hungary; 3 MTA-SZTE Research Group on Photoacoustic Spectroscopy, University of Szeged, H-6720 Szeged, Dóm tér 9, Hungary

13:30 **Dynamics of the surface nanostructuring of fused silica assisted by laser-induced self-assembling of thin metal layers: Theory and experiment** **JP.XI 30**
P. Lorenz1, M. Klöppel2, Tomi Smausz4, Tamás Csizmadia3, F. Frost1, M. Ehrhardt1, K. Zimmer1, B. Hopp3
1 Leibniz-Institut für Oberflächenmodifizierung e. V., Permoserstraße 15, 04318 Leipzig, Germany; 2 Institute of Scientific Computation, Department of Mathematics, TU Dresden, 01062 Dresden; 3 Department of Optics and Quantum Electronics, University of Szeged, H-6720 Szeged, Dóm tér 9, Hungary; 4 MTA-SZTE Research Group on Photoacoustic Spectroscopy, University of Szeged, H-6720 Szeged, Dóm tér 9, Hungary

13:30 **Si doping effects on structural, surface morphology and optical proprieties of GaN grown by MOCVD** **JP.XI 31**
M. Bouzidi*, Z. Benzarti, I. Halidou, Z. Chine, B. El Jani
Université de Monastir, Faculté des Sciences Unité de recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5000 Monastir, Tunisia. E-mail: * elbouzidi-med16@yahoo.com

13:30 **Photoisomerization and Quantum Yield in Biomimetic Molecular Switches** **JP.XI 32**
M Gueye 1, S. Haacke 1, S. Fusi 2, M. Olivucci 2, 3, J. Léonard 1
1 Institut de Physique et Chimie des Matériaux de Strasbourg, CNRS - Université de Strasbourg, France; 2 Dipartimento di Chimica, Università degli Studi di Siena, Italy; 3 Chemistry Department, Bowling Green State University, Bowling Green, United States; E-mail: Jeremie.Leonard@ipcms.unistra.fr

13:30 **Improved surface structure and chemical composition of Ge-Sb-Te thin films grown by femtosecond and picosecond PLD** **JP.XI 33**
G. Dascalu1, O. Pompilian2,3, N. Cimpoesu4, V. Nazabal5, P. Nemec6, P. Hawlova6, B. Chazallon2, S. Gurlui1, C. Focsa2
1Faculty of Physics, University «Al. I. Cuza», 700506 Iasi, Romania; 2Laboratoire de Physique des Lasers, Atomes et Molecules (UMR CNRS 8523), Universite Lille 1 Sciences & Technologies, 59655 Villeneuve d'Ascq, France; 3National Institute for Lasers, Plasma and Radiation Physics, PO-Box MG-36, Ro-77125 Magurele-Bucharest, Romania; 4Faculty of Materials Science and Engineering, «Gheorghe Asachi» Technical University of Iasi, 700050 Iasi. Romania; 5Institut des Sciences Chimiques de Rennes (UMR CNRS 6226), Universite de Rennes 1, 35042 Rennes, France; 6Faculty of Chemical Technology, University of Pardubice, Studentska 573, 53210 Pardubice, Czech Republic

13:30 **Single Silver Nanowire Nanoantennas Characterized by Far-Field Microscope Polarization Spectroscopy: Interplay Between Dipole and Higher-Order Plasmon Modes** **JP.XI 34**

Ming Fu 1&2, Lihua Qian, Hua Long, Kai Wang, Peixiang Lu, Yury P. Rakovich, Frederik Hetsch, Andrei S. Susha, and Andrey L. Rogach
1. Wuhan National Laboratory for Optoelectronics and School of Physics, Huazhong University of Science and Technology, Wuhan 430074, China 2. Photonics and Optoelectronics Group, Department of Physics and CeNS, Ludwig-Maximilians-Universität München, Amalienstrasse 54, D-80799 München, Germany; Wuhan National Laboratory for Optoelectronics and School of Physics, Huazhong University of Science and Technology, Wuhan 430074, China; Wuhan National Laboratory for Optoelectronics and School of Physics, Huazhong University of Science and Technology, Wuhan 430074, China; Wuhan National Laboratory for Optoelectronics and School of Physics, Huazhong University of Science and Technology, Wuhan 430074, China; Wuhan National Laboratory for Optoelectronics and School of Physics, Huazhong University of Science and Technology, Wuhan 430074, China; Centro de Física de Materiales (CSIC-UPV/EHU) and Donostia International Physics Center (DIPC), 20018 Donostia-San Sebastián, Spain; Department of Physics and Materials Science and Centre for Functional Photonics (CFP), City University of Hong Kong, Hong Kong SAR; Department of Physics and Materials Science and Centre for Functional Photonics (CFP), City University of Hong Kong, Hong Kong SAR; Department of Physics and Materials Science and Centre for Functional Photonics (CFP), City University of Hong Kong, Hong Kong SAR

13:30 **Photothermal Laser Processing of Hybrid Gold/Titania Nanoparticle Films** **JP.XI 35**

Lina Schade 1,2, Steffen Franzka 1,2, Kevin Dzialkowski 1,2, Sebastian Hardt 2,3, Hartmut Wiggers 2,3, Galina Marzun 1,2, Phillipp Wagener 1,2, Nils Hartmann 1,2
1 Fakultät für Chemie, Universität Duisburg-Essen, 45117 Essen, Germany; 2 CENIDE – Center for Nanointegration Duisburg-Essen, 47048 Duisburg, Germany; 3 Institut für Verbrennung und Gasdynamik, Universität Duisburg-Essen, 47048 Duisburg, Germany

13:30 **Optical properties of (70-x-y)TeO2-20WO3-10Y2O3-xEr2O3-yYb2O3 glasses** **JP.XI 36**

P.R. Prezas, M.P.F Graça, M.J. Soares, J. Suresh Kumar
Department of Physics &I3N, University of Aveiro, 3810-193 Aveiro, Portugal

13:30 **MAPLE prepared heterostructures with arylene vinylene polymer:fullerene active layer for photovoltaic applications** **JP.XI 37**

A. Stanculescu1, G. Socol2, A. M. Catargiu3, L. Vacareanu3, M. Socol1, O. Rasoga1, C. Breazu1, N.Preda1, F. Stanculescu4
1.National Institute of Materials Physics, 105 bis Atomistilor Street, P.O. Box MG-7, 077125, Bucharest-Magurele, Romania; 2.National Institute for Laser, Plasma and Radiation Physics, PO Box MG-36, 077125, Bucharest-Magurele, Romania; 3.P. Poni Institute of Macromolecular Chemistry, 41 A Gr. Ghica Voda Alley, 700487-Iasi, Romania; 4.University of Bucharest, Faculty of Physics, Str. Atomistilor nr.405, P.O. Box MG-11, Bucharest-Magurele, 077125 Romania

13:30 **CdS thin films prepared by laser assisted chemical bath deposition** **JP.XI 38**

L. V. Garcia1, M.I. Mendivil1, G. Garcia Guillen1, D. Avellaneda1, G.A. Castillo1, T.K. Das Roy1, B. Krishnan1, 2, S. Shaji1,2
1. Facultad de Ingenieria Mecanica y Electrica, Universidad Autonoma de Nuevo Leon, Av. Pedro de Alba s/n, Ciudad Universitaria, San Nicolas de los Garza, Nuevo Leon, Mexico, 66450. 2. CIIDIT- Universidad Autonoma de Nuevo Leon, Apodaca, Nuevo Leon, Mexico.

13:30 **Light emission from Er-doped thin films produced by pulsed laser ablation of a SiAlON target** **JP.XI 39**

I. Camps1, R. Serna1, J.M. Ramírez2, B. Garrido2, M. Perálvarez3, J. Carreras3, N. P. Barradas 4, E. Alves 5,6, L.C. Alves 4,6.
1Laser Processing Group, Instituto de Óptica, CSIC, C/Serrano 121, 28006 Madrid, Spain; 2MIND-IN2UB, Departament d'Electrònica, Universitat de Barcelona, c/Martí i Franqués 1, 08028 Barcelona, Spain; 3 IREC, Fundació Privada Institut de Recerca en Energia de Catalunya; 4 C2TN - Centro de Ciências Tecnológicas e Nucleares, Portugal; 5 IPFN - Instituto de Plasmas e Fusão Nuclear, Universidade de Lisboa, Estrada Nacional 10 (km 139,7), 2695-066 Bobadela LRS Portugal; 6 Laboratório de Aceleradores e Tecnologias de Radiação, Portugal.

13:30 **Influence of Ni content on the properties of Ni-YSZ thin films obtained by Pulsed Laser Deposition** **JP.XI 40**

R. Pascu1, S. Somacescu2, C. Hornoiu2, G. Epurescu1, B. Mitu1, M. Dinescu1
1 National Institute for Laser, Plasma and Radiation Physics, Magurele, Bucharest, Romania 2 „Ilie Murgulescu" Institute of Physical Chemistry, Bucharest, Romania

13:30 **FABRICATION OF NOVEL MESO-PHENYL UNSYMMETRICAL SUBSTITUTED PORPHYRIN THIN FILMS BY MAPLE FOR GAS SENSING APPLICATIONS** **JP.XI 41**

A.-M. Iordache1, R. Cristescu2, E. Fagadar-Cosma3, A. Popescu2, C. Popescu2, V. Grumezescu2, A.A. Ciucu4, S. Iordache1, A. Balan1, I. Stamatin1, I.N. Mihailescu2, and D.B. Chrisey5
1University of Bucharest, 3Nano-SAE Research Center, PO Box MG-38, Bucharest-Magurele, Romania 2National Institute for Lasers, Plasma & Radiation Physics, Lasers Department, P.O. Box MG-36, Bucharest-Magurele, Romania 3Institute of Chemistry Timisoara of Romanian Academy, Department of Organic Chemistry, 300223, Timisoara, Romania 4University of Bucharest, Faculty of Chemistry, Bucharest, Romania 5Department of Physics and Engineering Physics, Tulane University, New Orleans, LA, USA

13:30 **MAPLE-FABRICATED THIN FILMS COMPOSED OF 5 NM ANTIBIOTICS FUNCTIONALIZED MAGNETITE NANOSTRUCTURES WITH ANTI-PATHOGENIC PROPERTIES** **JP.XI 42**

Rodica Cristescu1, Valentina Grumezescu1,2, Alina Maria Holban3, Bogdan Stefan Vasile2, Laurentiu Mogoanta4, George Dan Mogosanu5, Alexandru Mihai Grumezescu2, Gabriel Socol1, I.N. Mihailescu1, Anton Ficai2, Roxana Trusca6, Florin Iordache7, and Douglas B. Chrisey8
1Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania 2Department of Science and Engineering of Oxidic Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 3Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1–3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 4 Research Center for Microscopic Morphology and Immunology, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 5 Department of Pharmacognosy & Phytotherapy, Faculty of Pharmacy, University of Medicine and Pharmacy of Craiova, 2 Petru Rareş Street, 200349 Craiova, Romania 6S.C. Metav-CD S.A., 31Rosetti Str., 020015 Bucharest, Romania 7Institute of Cellular Biology and Pathology of Romanian Academy, "Nicolae Simionescu", Department of Fetal and Adult Stem Cell Therapy, 8, B.P. Hasdeu, Bucharest 050568, Romania 8Department of Physics and Engineering Physics, Tulane University, New Orleans, LA, USA

13:30 **MnGeSb: (Fe, Co) films deposited by PLD on various substrates** **JP.XI 43**

M.I. Rusu1, R. Savastru1, C.N. Zoita1, A. Kiss1, C.P. Lungu2, C. Porosnicu2, O.Monnereau3, L. Tortet3, A. Tonetto4, R. Notonier4, C.E.A. Grigorescu1
1National Institute R&D Optoelectronics INOE 2000, PO BOX MG-5, RO 077125, Magurele – Ilfov, Romania, 2National Institute R&D Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., Magurele, Jud. Ilfov, 77125, Romania 3MADIREL, Universite de Provence, Faculte de Saint Jerome, Marseille, France 4Aix Marseille Universite Federation de Chimie de Marseille ifr 1739 Pole Pratim, Marseille, France

13:30 **POLYACETYLENE: STUDY OF THE TEMPERATURE DISTRIBUTION DURING ISOMERISATION REACTION INDUCED BY LASER EFFECT AND BY DIFFERNTIELLE SCANNING CALORIMETRIE (D.S.C)** **JP.XI 44**

L. Messai1, Z. Skanderi2*, F. Mechachti2, A. Djebaili2
1 Laboratory of Physical chemistry- University of Tebessa-12000- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna-Algeria

13:30 **Effect of the deposition conditions on the structural and morphological properties of nanostructured Wo3 thin films deposited by PLD** **JP.XI 45**

M. Dumitru, M. Filipescu, V. Ion, D. Colceag, M. Dinescu
National Institute for Laser, Plasma & Radiation Physics (INFLPR), Magurele, Romania

13:30 **Propagation of Short Pulses in Nonlinear Dispersive Media** **JP.XI 46**

O.Paseka, A.Suhorukov
Lomonosov Moscow State University

13:30 **Picosecond ultrafast pulsed laser deposition of oxides: the model system of SrTiO3** **JP.XI 47**
M. Pervolaraki*, C. N. Mihailescu and J. Giapintzakis
Nanotechnology Research Center and Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Avenue, P.O. Box 20537, 1678 Nicosia, Cyprus

13:30 **Electrical and thermal properties of ta-C and a-C:Ag nanocomposite thin films produced by pulsed laser deposition** **JP.XI 48**
M. Parvolaraki*, G. I. Athanasopoulos and J. Giapintzakis
Nanotechnology Research Center and Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Avenue, P.O. Box 20537, 1678 Nicosia, Cyprus

13:30 **Electrocatalytic activity of carbon nanofoam in alkaline media** **JP.XI 49**
A. Dalamagkas(1), D. Vernardou(1), N. Katsarakis(1,2,3), M. Pervolaraki(4*), J. Giapintzakis(4)
(1)Center of Materials Technology and Photonics, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece. (2) Electrical Engineering Department, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece (3)Institute of Electronic Structure and Laser, Foundation for Research & Technology-Hellas, P.O. Box 1527, Vassilika Vouton, 711 10 Heraklion, Crete, Greece (4)Nanotechnology Researcher Center and Department of Mechanical and Manufacturing Engineering, 75 Kallipoleos Av., P.O. Box 20537, 1687 Nicosia,Cyprus

13:30 **Functional properties of BFO nanostructures produced by laser ablation** **JP.XI 50**
N. D. Scarisoreanu1, R. Birjega1, V. Ion1, F. Craciun3, V. Teodorescu2, T. Lippert4 and M. Dinescu1
1NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania. 2NIMP-National Institute of Materials Physics, 077125 Bucharest-Magurele, Romania 3CNR-Istituto dei Sistemi Complessi, Area della Ricerca Roma-Tor Vergata, Via del Fosso del Cavaliere 100, I-00133, Rome, Italy. 4Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland

13:30 **Preliminary results of multitarget off-axis CW laser ablation for carbon nanotubes synthesis** **JP.XI 51**
C.R. Luculescu, I. Morjan, E. Popovici, A.G. Ilie
National Institute for Lasers, Plasma and Radiation Physics (NILPRP), Atomistilor 409, Magurele, ROMANIA

13:30 **Modeling The Effect of Substrate Surface Roughness On The Impact and Flattening Process of plasma sprayed Al2O3–33 wt.% TiO2 coating** **JP.XI 52**
ILHEM. R. KRIBA1*; K. BENOUMSAAD1; A. DJEBAILI2
1 Plasma Laboratory - Faculty of Sciences – Department of Physics- University of Batna- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria,

13:30 **Large-Scale PLD with High Power Lasers** **JP.XI 53**
Ralph Delmdahl, Jim Greer
Coherent LaserSystems GmbH & Co. KG, Hans Boeckler-Str. 12, 37079 Göttingen, Germany; PVD Products, Inc., Wilmington, MA 01887-1188, USA

13:30 **Cerium and Europium doped ZnO thin films fabricated by Pulsed Laser Deposition** **JP.XI 54**
M. Novotny1, P. Fitl2, J. Bulir1, E. Maresova2, P. Hruska3, A. Guille4, S. Guy4, J. Drahokoupil1, L. Fekete1, J. Lancok1
1) Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2, 182 21 Prague, Czech Republic 2) Institute of Chemical Technology, Technicka 5, 166 28 Prague 6, Czech Republic 3) Charles University in Prague, Faculty of Mathematics and Physics, V Holesovickach 2, 180 00 Prague, Czech Republic 4) Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne cedex, France

13:30 **Effects of the anisotropy of pulsed energy beam deposition on ZnO thin film properties** **JP.XI 55**
M. Nistor 1, E. Millon 2, W. Seiler 3, J. Perrière 4-5
1 National Institute for Lasers, Plasma and Radiation Physics (NILPRP), L22 P.O. Box. MG-36, 77125 Bucharest-Magurele, Romania; 2 GREMI, UMR 7344 CNRS-Université d'Orléans, 45067 Orléans Cedex 2, France; 3 PIMM, UMR CNRS 8006 Arts et Métiers ParisTech, 151 Boulevard de l'Hopital, 75013 Paris, France; 4 Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, INSP, F-75005, Paris, France; 5 CNRS, UMR 7588, INSP, F-75005, Paris, France

13:30 **How to optimize short and ultrashort pulse laser interaction with glass surfaces in cutting regimes?** **JP.XI 56**
D. Rostohar, N.M. Bulgakova, R.Bicistova, J. Brajer
HiLASE Project, Institute of Physics ASCR, Na Slovance 2, 18221 Prague, Czech Republic

13:30 **LASER MICRO MACHINING OF THIN SUBSTRATES FOR MICROELECTRONICS APPLICATIONS** **JP.XI 57**
S. Kaya-Boussougou1, G. Savriama1,2, A. Petit1, E. Millon1, J.-C. Houdbert2, L. Barreau2 C. Boulmer-Leborgne1, N. Semmar1
1GREMI-UMR 7344, CNRS/Université d'Orléans, 14 rue d'Issoudun, BP 6744, F-45067 Orléans cedex2, France 2 STMicroelectronics, 16 rue Pierre et Marie Curie, BP 7155, F-37071 Tours Cedex2, France

13:30 **The metallic interface between insulating NdGaO3 and SrTiO3 perovskites** **JP.XI 58**
Chen Li, Qinfang Xu, Zheng Wen, Shantao Zhang, Aidong Li, Xiaoning Zhao and Di Wu*
National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, 210093, China

13:30 **La0.7Sr0.3MnO3/BaTiO3/La0.7Sr0.3Mn0.8Ru0.2O3 multiferroic tunnel junctions** **JP.XI 59**
Xiangbiao Qiu, Chen Li, Aidong Li, Di Wu*
Department of Materials Science and Engineering; National Laboratory of Solid State Microstructure

13:30 **Incommensurate Modulation and Luminescence in the CaGd2(1–x)Eu2x(MoO4)4(1–y)(WO4)4y (0≤ x ≤ 1, 0 ≤ y ≤ 1) Red Phosphors** **JP.XI 60**
Maria Raskina, Vladimir A. Morozov, Katrien Meert, Artem M. Abakumov, Joke Hadermann
Chemistry Department, Moscow State University, 119991 Moscow, Russia; EMAT, University of Antwerp, Groenenborgerlaan 171, Antwerp B-2020, Belgium; Lumilab, Department of Solid State Sciences, Ghent University, B-9000 Ghent, Belgium

13:35 **Laser Induced Forward Transfer For Front Contact Improvement in Silicon Heterojunction Solar Cells** **JP.XI 61**
M. Colina, A. Morales-Vilches, C. Voz, I. Martín, P. Ortega, G. López, R. Alcubilla
Polytechnic University of Catalonia- Electronic Engineering Department - Micro and nanotechnologies Group.

13:35 **Laser Induced Forward Transfer of shaped solid polymer donors using a beam spatially modulated via a Digital Multimirror Device** **JP.XI 62**
D. J. Heath*, B. Mills, M. Feinaugle, J. A. Grant-Jacob, R. W. Eason
Optoelectronics Research Centre, University of Southampton, Southampton, SO171BJ

13:35 **Laser printing of multilayered structures for OTFT applications** **JP.XI 63**
C. Constantinescu (1), L. Rapp (1), A.K. Diallo (2), C. Videlot-Ackermann (2), P. Cremillieu (3), R. Mazurczyk (3), F. Serein-Spirau (4), J.P. Lère-Porte (4), P. Delaporte (1), A.P. Alloncle (1)
(1) Aix-Marseille Université, LP3, UMR CNRS 7341, 13288, Marseille, France; (2) Aix Marseille Université, CINaM, UMR CNRS 7325, 13288, Marseille, France; (3) Institut des Nanotechnologies de Lyon, UMR 5270, Ecole Centrale de Lyon, 36 av. Guy de Collongue, 69130, Ecully, France; (4) Equipe Architectures Moléculaires et Matériaux Nanostructurés, UMR 5253 CNRS, Institut Charles Gerhardt, Ecole Nationale Supérieure de Chimie de Montpellier, 8 rue de l'Ecole Normale, 34293 Montpellier Cedex 05, France;

13:35 **Pulsed Laser Deposition of Yb:Y2O3 Planar Waveguide Lasers** **JP.XI 64**
T. L. Parsonage, S. J. Beecher, K. A. Sloyan, J. I. Mackenzie, R. W. Eason
Optoelectronics Research Centre, University of Southampton, Highfield, Southampton, SO17 1BJ, UK

13:35 **Aluminum metal versus aluminum oxide fabricated by nanosecond pulsed laser deposition** **JP.XI 65**
Esther Rebollar1*, Mikel Sanz1, Daniel E. Martínez-Tong2, Mohamed Oujja1, José F. Marco1, Tiberio A. Ezquerra2, Marta Castillejo1
1Instituto de Química Física Rocasolano, IQFR-CSIC, Serrano 119, 28006 Madrid, Spain; 2Instituto de Estructura de la Materia, IEM-CSIC, Serrano 121, 28006 Madrid, Spain

13:35 **Hydrodynamics of adjacent bubbles in LIFT of silver nanoparticle inks at high velocity** **JP.XI 66**
E. Biver (1), L. Rapp (1), A. P. Alloncle (1), P. Serra (2), Ph. Delaporte (1)
(1) Aix-Marseille Université, CNRS, LP3 UMR 7341, 13288, Marseille, France; (2) Departament de Física Aplicada i Óptica, Universitat de Barcelona, Martí i Franquès 1, E-08028 Barcelona, Spain

16:00 **PLENARY SESSION**

29 May 2014

Laser Processing of nanostructures for optolectronics, photovoltaic and biological applications : M. Dinescu

08:30 **Annealing of amorphous silicon using c.w. visible lasers (Invited)** **J.XII 1**
S. Mailis, G. Martinez, G. Zisis, Y. Franz, N. Healy, A. C. Peacock
Optoelectronics Research Centre, University of Southampton, Highfield, Southampton, SO17 1BJ, U.K.

09:00 **ENHANCED LIGHT SCATTERING IN Si NANOSTRUCTURES PRODUCED BY PULSED LASER IRRADIATION.** **J.XII 2**
P. M. Sberna1,2, G. G. Scapellato2, N. Piluso3, I. Crupi2, S. Boninelli2, M. Miritello2, E. Bruno1,2, V. Privitera2, S. Mirabella2, F. Simone1
1 Università degli Studi di Catania – Dipartimento di Fisica e Astronomia, Via S. Sofia 64, Catania I-95123, Italy; 2 MATIS-IMM-CNR, Via S. Sofia 64, Catania I-95123, Italy; 3 CNR-IMM, Sezione di Catania, Stradale Primosole 50, Catania I-95121, Italy.

09:15 **Nonlinear Laser Fabrication of Biofunctionalized Interfaces** **J.XII 3**
Anja Schroeter, Steffen Franzka, Nils Hartmann
Department of Chemistry, Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg Essen, Essen, Germany

09:30 **Ultrafast Carrier Dynamics in PbS Quantum Dot Films Capped with Chalcogenidometalate Ligands** **J.XII 4**
Demetra Tsokkou1,2, Paris Papagiorgis2, Loredana Protesescu3, Maksym V. Kovalenko3, Stelios A. Choulis4, Constantinos Christofides1, Grigorios Itskos2 and Andreas Othonos1
1 Department of Physics, Research Center of Ultrafast Science, University of Cyprus, 1678 Nicosia (Cyprus); 2 Department of Physics, Experimental Condensed Matter Physics Laboratory, University of Cyprus,1678 Nicosia (Cyprus); 3 Institute of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, CH-8093 Zürich and Empa-Swiss Federal Laboratories for Materials Science and Technology, CH-8060 Dübendorf (Switzerland); 4 Molecular Electronics and Photonics Research Unit, Department of Mechanical Engineering and Materials Science and Engineering, Cyprus University of Technology, 3603 Limassol (Cyprus)

09:45 **New approaches in optics: optical properties of noble metal nanoparticles and nanostructures and application to bio-photonics** **J.XII 5**
P A Atanasov1, N N Nedyalkov1, A Og Dikovska1, Ru Nikov1, R Nikov1, A Nikolov1, K Hirano2, H Shimizu2, M Terakawa2, M Obara2
P A Atanasov1; N N Nedyalkov1; A Og Dikovska1; Ru Nikov1; R Nikov1; A Nikolov1; K Hirano2; H Shimizu2; M Terakawa2; M Obara2 1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko Shausse 72, Sofia 1784, Bulgaria 2School of Integrated Design Engineering, Keio University, 3-14-1, Hiyoshi, Kohoku-ku, Yokohama-shi, 223-8522, Japan

10:00 **Cofee Break**

Laser processing of carbon and 2D related materials : S. Mailis

10:30 **Nonlinearly Pulsed Fiber Lasers Incorporating Graphene Efficiently Synthesized by Intensely Pulsed White Light** **J.XIII 1**
Won-Jun Kim (1&2), Junsu Lee (3), Ju Han Lee (3), Jung Ah Lim (1), Dae-Soon Lim (2), Won-Kook Choi (1), Yong-Won Song (1)
(1) Future Convergence Research Division, Korea Institute of Science and Technology, Seoul 136-791, South Korea. (2) Department of Materials Science and Engineering, Korea University, Seoul 136-708 Republic of Korea. (3) School of Electrical and Computer Engineering, University of Seoul, Seoul 130-743, South Korea.

10:45 **Biosensors for food analysis fabricated by Laser Induced Forward Transfer** **J.XIII 2**
M. Chatzipetrou1, E. Touloupakis2, M. Massaouti1, G. Tsekenis3, I. Zergioti1
1 National Technical University of Athens, Physics Department, Iroon Polytechneiou 9, 15780 Zografou, Athens, Greece 2 Instituto per lo Studio degli Ecosistemi Sezione di Firenze Via Madonna del Piano n. 10 50019 Sesto Fiorentino, Firenze 3 Biomedical Research Foundation of the Academy of Athens, Soranou Ephessiou 4, 11527 Athens, Greece

11:00 **Revealing the ultrafast process behind the photoreduction of graphene oxide** **J.XIII 3**
Daniel S. Badali, Regis Y.N. Gengler, Dongfang Zhang, Konstantinos Dimos, Konstantinos Spyrou, Dimitrios Gournis, R.J. Dwayne Miller
Badali; Gengler; Zhang; Miller; Max Planck Institute for the Structure and Dynamics of Matter, Center for Free Electron Laser Science, University of Hamburg, Luruper Chaussee 149, Hamburg 22761 Germany Dimos; Spyrou; Gournis; Department of Materials Science and Engineering, University of Ioannina, GR-45110 Ioannina, Greece

11:15 **Graphene-based textured surface by pulsed laser deposition as a robust platform for surface-enhanced Raman spectroscopy applications** **J.XIII 4**
T. Tite, A.-S. Loir, C. Donnet, S. Reynaud, J. -Y. Michalon, F. Vocanson, V. Barnier and F. Garrelie
T. Tite, A.-S. Loir, C. Donnet, S. Reynaud, J. -Y. Michalon, F. Vocanson, and F. Garrelie : Université de Lyon, F-69003, Lyon, France, Université de Saint-Étienne, Laboratoire Hubert Curien (UMR 5516 CNRS), 42000 Saint Étienne, France V. Barnier : École Nationale Supérieure des Mines de Saint-Étienne, Laboratoire Georges Friedel UMR 5307, 158 cours Fauriel, 42023 Saint-Etienne, France

11:30 **Pulsed Laser Processing of Two-Dimensional Materials** **J.XIII 5**
I. Paradissanos(1,2), M. Sigletou(1,2), K. Savva(1,2), C. Alexaki(1,2), C. Petridis(3), G. Kioseoglou(2), E. Kymakis(3), C. Fotakis(1,2), E. Stratakis(1,2*)
1) Institute of Electronic Structure and Laser, Foundation for Research & Technology Hellas, (IESL-FORTH), P.O. Box 1527, Heraklion 711 10, Greece 2) University of Crete, 710 03 Heraklion, Crete, Greece. 3) Technological Educational Institute (TEI) of Crete, Heraklion, 71003, Greece * stratak@iesl.forth.gr, phone: 00302810391274, fax: 0030-2810391305

11:45 **Interface-coupled relaxation dynamics in carbon nanotube-Si hybrid solar cells** **J.XIII 6**
S. Ponzoni, G. Galimberti, L. Sangaletti, P. Castrucci, S. Del Gobbo, M. Morbidoni, M. Scarselli, S. Pagliara
I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy; I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy; I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy; Dipartimento di Fisica, Università di Roma Tor Vergata, 00133 Roma, Italy; 3 Solar & Photovoltaics Engineering Research Center, King Abdullah University of Science & Technology, Thuwal, Kingdom of Saudi Arabia; Dipartimento di Fisica, Università di Roma Tor Vergata, 00133 Roma, Italy; Dipartimento di Fisica, Università di Roma Tor Vergata, 00133 Roma, Italy; I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy

12:00 **Lunch**

Laser processing for advanced materials applications : R. Haglund

14:00 **Astrophotonic Applications of Ultrafast Laser Inscription (Invited)** **J 1**
Dr Robert R. Thomson
Scottish Universities Physics Alliance, Institute of Photonics and Quantum Sciences (IPaQS), School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, UK, EH14 4AS

14:30 **Optical forces in nanostructure-enhanced plasmonic tweezers** **J.XIV 2**
D.G. Kotsifaki1, M.Kandyla1, P.G. Lagoudakis2
1Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48 Vasileos Constantinou Avenue, 11635 Athens, Greece. 2School of Physics and Astronomy, University of Southampton, Southampton, SO17 1BJ, UK.

14:45 **Aluminum plasmonic nanostructures in the UV for luminescence enhancement - From Al thin film to Al nanoparticles** **J.XIV 3**
N. Abdellaoui, A. Pereira, A. Pillonnet, A. Berthelot, B. Moine, M. Novotny, Th. Labbaye, E. Kovacevic, J. Berndt
N. Abdellaoui;A. Pereira;A. Pillonnet;A. Berthelot;B. Moine Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne cedex, France. M. Novotny Institute of Physics of the ASCR, v.v.i., Na Slovance 2, 182 21, Prague, Czech Republic. Th. Labbaye;E. Kovacevic;J. Berndt GREMI, UMR7344 CNRS and Université d'Orléans, Orléans, France

15:00 **Subsurface laser nano-structuring of plasmonic, stratified metal/dielectric media** **J.XIV 4**
N. Kalfagiannis1, A. Siozos2, D. Bellas2, G. Vourlias3, K. Bazioti3, G.P. Dimitrakopulos3, W.M. Cranton1, E. Lidorikis2, P. Patsalas3, D.C. Koutsogeorgis1,*
1School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, United Kingdom; 2Department of Materials Science and Engineering, University of Ioannina, Ioannina, GR-45110, Greece; 3Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece

15:15 **Laser Excitation and Detection of One-Dimensional Localized and Leaky Wedge Waves** **J.XIV 5**
Peter Hess1, Pavel Pupyrev2,3, Alexey M. Lomonosov1,2,3, and Andreas P. Mayer2
1Institute of Physical Chemistry, University of Heidelberg, 69120 Heidelberg, Germany. 2HS Offenburg ? University of Applied Sciences, 77723 Gengenbach, Germany. 3General Physics Institute, RAS, Moscow, Russian Federation.

15:30 **Photonic nanojets from engineered nanospheres for the fabrication of ultra-high-density porous membranes** **J.XIV 6**
D. Grojo (1), G. Baravaglio (2), L. Boarino (2), C. Constantinescu (1), P. Delaporte (1), N. De Leo (2), M. Laus (3), A. Lionti (1), L. Sandeau, N. Sandeau (4), K. Sparnacci (3)
(1) Aix-Marseille University, CNRS, LP3 UMR 7341, F-13288, Marseille, France; (2) INRIM, NanoFacility, Division Electromagnetism, I-10135 Torino, Italy; (3) Department of Science and Technology, University of Eastern Piedmont Amedeo Avogadro, I-15121 Alessandria, Italy; (4) Aix-Marseille University, CNRS, Centrale Marseille, Institut Fresnel, UMR 7249, 13013 Marseille, France

Poster Sesion J: Laser surface nano & microstructuring. Laser transformations. Photo-induced phenomena and characterization. : V. Craciun, Ph. Delaporte, M. Nistor & M. Pervolaraki

16:00 **The Influence of phosphorus content on magneto-optical properties in (Ga,Mn)(As,P) layers .** **JP.XV 1**
H. Riahi, W. Ouerghui, L. Thevenard, M. Maaref, C. Gourdon and A.Lemaitre.
- Laboratoire, Matériaux, Molécules et Applications. IPEST- La Marsa -2070-Tunis-Tunsie - Institut de Nanosciences de Paris, Université de Pierre Marie Curie. Unité mixte de recherche 7588-CNRS-UPMC-France. - Laboraoire de Photonique et Nanostructures. CNRS, marcoussis -France.

16:00 **Temperature effects on the radiative recombination in InAlAs/AlGaAs quantum dots** **JP.XV 2**
A. Ben Daly1,2, F. Bernadot2, T. Barisien2, C. Testelin2 , M. Maaref1 and A. Lemaitre3
1Laboratoire Matériaux-Molécules et Applications, Institut Préparatoire aux Etudes Scientifiques et Techniques, BP 51,2070 la Marsa, Université de Carthage, Tunis, Tunisia 2 Institut des NanoScience de Paris, UPMC Univ Paris06, CNRS UMR 7588, 4 Place Jussieu, 75252 Paris cedex05,France 3Laboratoire de Photonique et Nanostructures, CNRS, Route de Nozay, F-91460 Marcoussis, France

16:00 **Improving the laser damage resistance of oxide thin films and multilayers via tailoring ion beam sputtering parameters** **JP.XV 3**
Mustafa Burak Cosar, Alp Eren Sinan Ozhan
Aselsan Inc. Microelectronics, Guidance and Electro-Optics Division, Cankırı Yolu 7. Km, 06750 Akyurt, Ankara, Turkey

16:00 **Laser-induced periodic, symmetrical SiGe, Si islands with single crystal and high aspect ratio on Si substrate** **JP.XV 4**
Dongfeng Qi, Yihong Xu, Songyan Chen,* Cheng Li, Hongkai Lai, Wei Huang, and Jun Li
Department of Physics, Semiconductor Photonics Research Center, Xiamen University, Xiamen 361005, People?s Republic of China

16:00 **EUV ablation of polymers** **JP.XV 5**
C. Liberatore1,2, A. Bartnik4, K. Mann3, M. Müller3, L. Pina2, L. Juha1, J. J. Rocca5, A. Endo1, T. Mocek1
1HiLASE Project, Institute of Physics ASCR, Prague, Czech Republic; 2Czech Technical University, Prague, Czech Republic; 3Laser Laboratorium Göttingen (LLG), Göttingen, Germany; 4Institute of Optoelectronics (IOE) ,Military University of Technology, Warsaw, Poland; 5Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, CO 80523, USA

16:00 **Laser Light Polarization Dependence of Carbon Raman spectroscopy** **JP.XV 6**
Stephane NEUVILLE
TCE

16:00 **Disappearance of Fano asymmetry in the Raman spectra of delocalized hole system CuAlO2-xSx** **JP.XV 7**
Nilesh Mazumder (1), Rajarshi Roy (1), Dipayan Sen (1), Uttam Kumar Ghorai (2) and Kalyan Kumar Chattopadhyay (1, 2).
1. Physics Department, Jadavpur University, Kolkata, 700032, India 2. School of Materials Science and Nanotechnology, Jadavpur University, Kolkata, 700032, India

16:00 **ELECTRODYNAMIC ENERGY IN SPHERICAL NANOPARTICLES LAYERED** **JP.XV 8**
Porodko Liliia NAN Ukraine Chuiko institute of surface chamistry 17 General Naumova,Kyiv, Ukraine
Porodko Liliia

16:00 **Production of silver nanoparticles by laser ablation under ambient conditions** **JP.XV 9**
M. Boutinguiza1, R. Comesaña2, F. Lusquiños1, A. Riveiro1-3, J. del Val1, J. Pou1
1 Applied Physics Department, University of Vigo EEI, Lagoas-Marcosende, 9. Vigo, 36310, SPAIN 2 Materials Engineering, Applied Mechanics and Construction Dpt., University of Vigo, EEI, Lagoas-Marcosende, Vigo, 36310, SPAIN. 3 Centro Universitario de la Defensa, Escuela Naval Militar, Plaza de España 2, 36920 Marín, SPAIN.

16:00 **Laser joining of AA6013 and Ti-6Al-4V with Si film prepared by RF magnetron sputtering** **JP.XV 10**
A.C. Oliveira, R. Riva, C.B. Mello, N.M.A. Athanazio, R.M. Oliveira
Federal University of São Paulo; Institute for Advanced Studies; National Institute for Space Research; Institute for Advanced Studies; National Institute for Space Reseach

16:00 **Laser Annealing of Plasma-Damaged Silicon Surface** **JP.XV 11**
T. Sameshima and M. Hasumi
Tokyo University of Agriculture & Technology

16:00 **Applying transformations Surface Nitriding Plasma and Immersion Ion Implantation in Plasma in Steels SAE 4340, 300M and Maraging 300 afther Laser Weld** **JP.XV 12**
Cardoso A. S. M. 1, Abdalla A. J. 1, Lima M. S. F. 1, Baggio-Sheid V. H. 1, Miyakawa M.1, Silva M. M.2, Ueda M. 3.
1Instituto de Estudos Avan?ados (IEAv/DCTA): Trevo Cel Amarante, 1, Putim, 12228-970, S?o Jos? dos Campos (SP - Brasil); 2Instituto de Tecnol?gico de Aeron?utica (ITA/DCTA): Pra?a Marechal Eduardo Gomes, 50, Vila das Ac?cias, 12.228-900, S?o Jos? dos Campos (SP ? Brasil); 3Instituto Nacional de Pesquisas Espaciais (INPE): Avenida dos Astronautas, 1.758, Jd. da Granja, 12227-010, S?o Jos? dos Campos (SP - Brasil).

16:00 **Redox Multiphoton Polymerization for 3D Nanofabrication** **JP.XV 13**
Argyro Giakoumaki, Elmina Kabouraki, Paulius Danilevicius, David Gray,Maria Vamvakaki, Maria Farsari
IESL-FORTH, N. Plastira 100, 70013, Heraklion, Crete, Greece

16:00 **Formation and characterization of two-dimensional regular patterns fabricated employing multiple exposure holographic lithography** **JP.XV 14**
Dainius Virganavicius, Ausrine Jurkeviciute, Nerijus Armakavicius, Linas Simatonis, Agne Ciuciulkaite, Tomas Tamulevicius, Mindaugas Andrulevicius, Sigitas Tamulevicius
Institute of Materials Science of Kaunas University of Technology, Savanoriu Ave. 271, LT-50131 Kaunas, Lithuania

16:00 **Synthesis and Characterization of Eu3+ doped CeAg(WO4)2** **JP.XV 15**
Chaoyu You, F. Fernandez-Martínez
Department of Industrial Chemistry and Polymers Superior Technical School of Industrial and Design Engineering , Polytechnic University of Madrid, Madrid-28012, Spain.

16:00 **Comparison of laser ablation with spark discharge technique used for nanoparticle production** **JP.XV 16**
Andrey Voloshko, J-Ph. Colombier, Tatiana. E. Itina
Hubert Curien Laboratory, 18 rue du Prof. Benoit Lauras, Bat. F, 42000 Saint-Etienne, France

16:00 **Investigation of thermal and morphological effects after ultrashort pulsed laser irradiation of double-layered metals** **JP.XV 17**
George D.Tsibidis, Panagiotis Kapizionis, E.Stratakis
Foundation for Research & Technology—Hellas, Institute of Electronic Structure and Laser, (FORTH-IESL), P.O. Box 1527, Heraklion 711 10, Greece

16:00 **Tunable characteristic of electromagnetically induced transparency via liquid crystal in a terahertz metamaterial** **JP.XV 18**
Ting-Tso Yeh, Chan-Shan Yang, Ci-Ling Pan and Ta-Jen Yen
Department of Materials Science and Engineering, National Tsing Hua University; Department of Physics, National Tsing Hua University

16:00 **Formation of self-organized LIPSS by irradiation with an ultra fast white light continuum** **JP.XV 19**
Sebastian Uhlig, Olga Varlamova, Markus Ratzke, Juergen Reif
Brandenburgische Technische Universitaet Cottbus-Senftenberg

16:00 **Arrays of metal nanostructures by methods combining colloidal lithography and laser processing** **JP.XV 20**
C. Constantinescu, K.L.N. Deepak, P. Delaporte, N. Sandeau*, O. Utéza, D. Grojo
Aix-Marseille Université / CNRS, LP3 UMR 7341, 13288, Marseille, France;
*Aix-Marseille Université / CNRS, Centrale Marseille, Institut Fresnel, UMR 7249, 13013 Marseille, France

16:00 **The Photoluminescence of Erbium doped 0.93(Bi0.5Na0.5TiO3)-0.07($BaTiO_3$) ceramics** **JP.XV 21**
C.M. Lau, K.W. Kwok
The Hong Kong Polytechnic University

16:00 **Light Reflection and Extinction by Metal-Polymer Composites Prepared by Ion Implantation** **JP.XV 22**
Y.A. Bumai1, N.I. Dolgikh2, R.I. Khaibullin3, A.A. Kharchenko2, M. G. Lukashevich2, V.B. Odzhaev2
1 Belarussian national technical university, 220030, Minsk, Belarus; 2 Belarusian State University, 220030, Minsk, Belarus; 3 Kazan Physical-Technical Institute, RAS, 420029, Kazan, Russian Federation

16:00 **Surface oxynitring of titanium metal by laser irradiation under controlled gas mixtures: influence of the O2/N2 partial pressure ratio** **JP.XV 23**
F. Torrent (a), P. Berger (b1,b2), L. Lavisse (a), B. Dourthe (a), J. M. Jouvard (a), M. C. Marco de Lucas (a)
(a) Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université de Bourgogne, 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex, France (b1) CEA / DSM / IRAMIS / NIMBE , CEA - SACLAY, F-91191 Gif sur Yvette, France (b2) SIS2M, UMR CEA-CNRS 3299 CEA - SACLAY, F-91191 Gif sur Yvette, Franc

16:00 **Tribological performance of femtosecond laser-induced periodic surface structures on metals** **JP.XV 24**
J. Bonse (1), R. Koter (1), M. Hartelt (1), D. Spaltmann (1), S. Pentzien (1), S. Höhm (2), A. Rosenfeld (2), J. Krüger (1)
(1) BAM Bundesanstalt für Materialforschung und -prüfung, Unter den Eichen 87, D-12205 Berlin, Germany; (2) Max-Born-Institut, Max-Born-Straße 2a, D-12489 Berlin, Germany

16:00 **Plasmonic origin of near-wavelength laser-induced periodic surface structures on silicon: double-pulse experiments and theory** **JP.XV 25**
T.J.-Y. Derrien (1), J. Krüger (1), T.E. Itina (2), S. Höhm (3), A. Rosenfeld (3), J. Bonse (1)
(1) BAM Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany; (2) Laboratoire Hubert Curien, Saint-Etienne, France; (3) Max-Born-Institut, Berlin, Germany

16:00 **One-step laser pyrolysis synthesis of TiO2 nanoparticles embedded in carbon-silica shells/matrix** **JP.XV 26**
1.Claudiu Fleaca, Monica Scarisoreanu, Ion Morjan, Catalin Luculescu, Ana-Maria Niculescu, Florian Dumitrache, 2.Eugeniu Vasile, 3.Virginia Danciu, Mihaela Popa 1. NILPRP , Atomistilor str.no.409, Magurele Bucharest , Romania 2. METAV R&D C.A Rosetti str. no.31 and Polytechnica University of Bucharest Independentei no.313, Bucharest, Romania 3. Babes-Bolyai University , Faculty of Chemistry and Chemical Engineering Arany Janos str, no 11, Cluj Napoca Romania

16:00 **Laser cutting of AZO/Ag/AZO thin films** **JP.XV 27**
Antonio Terrasi1, 2, Isodiana Crupi2, Stefano Boscarino1, 2, Giacomo Torrisi3, Giorgia Scapellato2, Salvatore Mirabella2, Giovanni Piccitto1, Francesca Simone1 1Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy; 2MATIS IMM-CNR, via S. Sofia 64, 95123 Catania, Italy; 3Distretto Tecnologico Sicilia Micro e Nanosistemi, via Strada VIII 5, 95121 Catania, Italy; 4CNR-IMM, via Strada VIII 5, 95121 Catania, Italy

16:00 **Optical and structural properties of Eu3+ doped silicophosphate glasses.** **JP.XV 28**
F. BEN SLIMEN ; N. GAUMER ; S. CHAUSSEDENT
Laboratoire de Photonique d'Angers - LUNAM - Université d'Angers - France

16:00 **Preparation of nanostructured ZrO2 films as supports for Au catalysts for low-temperature CO oxidation** **JP.XV 29**
A. Og. Dikovska1, G. B. Atanasova2, P. K. Stefanov2, P. A. Atanasov1
1 Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, Sofia 1784, Bulgaria 2 Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Acad. G. Bonchev str., bl. 11, 1113 Sofia, Bulgaria

16:00 **Online monitoring of laser induced periodic surface structures formation on polymer films by grazing incidence small angle x-ray scattering** **JP.XV 30**
E. Rebollar1*, I. Martín-Fabiani2, Á. Rodriguez-Rodriguez2, M.C. García-Gutiérrez2, D. R. Rueda2, G. Portale3, T. A. Ezquerra2, M. Castillejo1
1Instituto de Química Física Rocasolano, IQFR-CSIC, Serrano 119, 28006 Madrid, Spain; 2Instituto de Estructura de la Materia, IEM-CSIC, Serrano 121, 28006 Madrid, Spain; 3Netherlands Organization for Scientific Research, DUBBLE@ ESRF, European Synchrotron Radiation Facility, Grenoble, France

16:00 **Time-resolved spectroscopy of excitons in CdSe nanoplatelets** **JP.XV 31**
I. Dmitruk, G. Klimusheva, A. M. Dmytruk, A. G. Lyashchova, T. A. Mirnaya, V. N. Asaula
Institute of Physics of National Academy of Sciences of Ukraine, Faculty of Physics, Taras Shevchenko National University of Kyiv; Institute of Physics of National Academy of Sciences of Ukraine; Institute of Physics of National Academy of Sciences of Ukraine; Institute of Physics of National Academy of Sciences of Ukraine; V. I. Vernadsky Institute of General and Inorganic Chemistry of National Academy of Sciences of Ukraine

16:00 **Planar chiral metamaterials with enhanced optical activity in gammadions-shaped from visible to near infrared region** **JP.XV 32**
Min-Han Lee, Chu-En Lin,Ta-Jen Yen
Department of Materials Science and Engineering, National Tsing Hua University

16:00 **Structural and electrical characterization of laser-annealed nano-crystalline Si for solar cell applications** **JP.XV 33**
I. Theodorakos1, Y.S. Raptis1, V. Vamvakas2, D. Tsoukalas1, I. Zergioti1
1 Physics Department, National Technical University of Athens, Heroon Polytechniou 9, 15780 Zographou, Athens, Greece 2 Heliosphera, Industrial Area of Tripolis, 8th Building Block, 5th Road, GR-221 00 Tripolis, Greece

16:00 **Laser Induced Fracture of Thin Glass** **JP.XV 34**
A.Collins1, D.Milne2, G.M. O'Connor1
¹National Centre for Laser Applications, National University of Ireland, Galway, Ireland. 2M-Solv Ltd, Langford Locks, Kidlington, Oxford, United Kingdom.

16:00 **Sub-surface modification of silicon using ultrashort lasers on periodically pre-structured samples** **JP.XV 35**
Thibault J.-Y. Derrien, Rémi Torres, David Grojo, Tatiana Itina, Thierry Sarnet
Laboratory of Lasers, Plasmas and Photonic Processes (LP3). UMR CNRS 7341 - Aix-Marseille University. Parc Scientifique et Technologique de Luminy. Case 917. 163, avenue du Luminy 13 288 Marseille Cedex 9, France

16:00 **Molecular Orientation and Its relation to Mobility of Pentacene Films** **JP.XV 36**
Chiung-Yi Chen, Deniz P. Wong, Yi-Fan Huang, Hsiang-Ting Lien, Pei-Lin Lee and Li-Chyong Chen
Center for Condensed Matter Sciences, National Taiwan University, Taipei, 10617, Taiwan; Institute of Atomic and Molecular Sciences, Academic Sinica, Taipei, 10617, Taiwan

16:00 **Achieving invisibility and illusion optics by dielectric-annulus-based metamaterials** **JP.XV 37**
Jian-Hui Lin, Tsung-Yu Huang
National Tsing Hua University, Department of Materials Science and Engineering

16:00 **Free carrier density related piezoelectric property in pulsed-laser-grown Pd-doping ZnO film** **JP.XV 38**
Wang Rui ,Qin Wei Wei,Li Tao Gao Zhi Qiang, Hu Xue Feng Xu Meigui, Huang Shengming, Liang Qi, and Wei Zhang,*
a State Key Laboratory of Material-oriented Chemical Engineering and School of Chemical Engineering, Nanjing Tech University, Nanjing, Jiangsu 210009, PR China b School of Physical Science, Hefei University of Technology, Hefei, Anhui 230009, PR China

16:00 **Biodegradable Silk Fibroin/Poly(3-Hydroxy-Butyric Acid-Co-3-Hydroxy-Valeric Acid) composite coatings obtained by MAPLE and dip-coating methods** **JP.XV 39**
F.M. Miroiu1, N. Stefan1, A. Visan1, O.L. Rasoga2, I. Zgura2, C.Nita1, A. Stancu-lescu2, G. Dorcioman1, R. Cristescu1, I. N. Mihailescu1, G. Socol1
1National Institute for Lasers, Plasma, and Radiation Physics, 409 Atomistilor 077125, Magurele - Bucharest, Romania; 2 National Institute for Materials Physics, 105 Atomistilor 077125, Magurele - Bucharest, Romania

16:00 **PINPIN a Si:H based structures for X-Ray image detection using the laser scanning technique** **JP.XV 40**
M. Fernandes 1,2, Y. Vygranenko 1,2, M. Vieira 1,2
1-Electronics, Telecommunications and Computer Engineering Department, ISEL, Lisbon, Portugal 2-CTS-UNINOVA, 2829-516 Caparica, Portugal

16:00 **Space- and time-resolved optical emission spectroscopy of transient plasma generated by ns and fs laser ablation of Pr- and Er-doped GaLaS** **JP.XV 41**
G. Dascalu1, O. Pompilian2,3, S. Gurlui1, P. Nemec4, C. Focsa2
1Faculty of Physics, University "Al. I. Cuza", 700506 Iasi, Romania; 2Laboratoire de Physique des Lasers, Atomes et Molécules (UMR CNRS 8523), Université Lille 1 Sciences & Technologies, 59655 Villeneuve d'Ascq, France ; 3National Institute for Lasers, Plasma and Radiation Physics, PO-Box MG-36, Ro-77125 Magurele-Bucharest, Romania; 4Faculty of Chemical Technology, University of Pardubice, Studentska 573, 53210 Pardubice, Czech Republic

16:00 **Formation of femtosecond laser-induced periodic surface structures on crystal planes with different orientations** **JP.XV 42**
Xxx Sedao, Claire Maurice, Florence Garrelie, Jean-Philippe Colombier, Stéphanie Reynaud, Romain Quey, Florent Pigeon
Université de Lyon, CNRS, UMR5516, Laboratoire Hubert Curien, Université Jean Monnet, F-42023 St-Etienne, France; Ecole Nationale Supérieure des Mines de Saint-Etienne, Laboratoire Georges Friedel, CNRS, UMR5307, 42023 St-Etienne, France

16:00 **Influence of the liquid level and duration of the ablation process on the characteristics of nanostructures created by nanosecond laser ablation of Ag and Au in water** **JP.XV 43**
A.S. Nikolov1*, R.G. Nikov1, N.N. Nedyalkov1, P.A. Atanasov1, M.T. Alexandrov2, D.B. Karashanova3, N. E. Marinkov4 I. Z. Dimitrov4, and I. I. Boevski4
1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko Chaussee 72, Sofia 1784, Bulgaria 2Institute of Experimental Pathology and Parasitology, Bulgarian Academy of Sciences, G. Bonchev Street, bl. 25, Sofia 1113, Bulgaria. 3Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, G. Bonchev Street, bl. 109, Sofia 1113, Bulgaria. 4Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Acad. G. Bonchev Str.,bl.11, 1113, Sofia, Bulgaria.

16:00 **Nanoindentation and polarised Raman spectroscopy of extruded polyamide films, modified by short pulse laser radiation** **JP.XV 44**
L. Kidney1, E Keehan2, G. M. O'Connor1
1NCLA/Inspire Laboratories, School of Physics, National University Galway, University Road, Galway, Ireland; 2Creganna Tactx Medical, Parkmore Industrial Estate, Galway, Ireland

16:00 **Study of the aging process of noble metal nanostructures created by pulsed laser ablation in water** **JP.XV 45**
R.G. Nikov1, A.S. Nikolov1, N.N. Nedyalkov1, E.L. Pavlov, P.A. Atanasov1, M.T. Alexandrov2 and D.B. Karashanova3
1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko Chaussee 72, Sofia 1784, Bulgaria; 2Institute of Experimental Pathology and Parasitology, Bulgarian Academy of Sciences, G. Bonchev Street, bl. 25, Sofia 1113, Bulgaria; 3Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, G. Bonchev Street, bl. 109, Sofia 1113, Bulgaria.

16:00 **Production of silver nanoparticles by ultra-short pulsed laser ablation in nanoporous aqueous silica colloidal solutions** **JP.XV 46**
A. Guarnaccio (1), Á. Szegedi (2), J. Valyon (2), S. Orlando (1), A. De Stefanis (3), A. De Bonis (4), R. Teghil (4), M. Sansone (4), A. Santagata (1)
1) UOS Tito, Institute of Structure of Matter – CNR, C/da S. Loja, 85050 Tito Scalo (PZ), Italy; 2) Research Centre for Natural Sciences, Institute of Materials and Environmental Chemistry, Hungarian Academy of Sciences, 1025 Budapest,Pusztaszeriút 59-67, Hungary; 3) UOS Montelibretti, Institute of Structure of Matter – CNR, Rome Research Area-CNR, Via Salaria Km 29, 300, Monterotondo, Rome 00016, Italy; 4) Università degli Studi della Basilicata, Dipartimento di Scienze, Via dell'Ateneo Lucano 10-85100, Potenza, Italy

16:00 **Laser Sintering of Magnesia with Nanoparticles of Iron Oxide and Aluminum Oxide** **JP.XV 47**
L.V.García1, T. K. Das Roy1, G.A. Castillo1, S.Shaji1, 2
1 Facultad de Ingenieria Mecanica y Electrica, Universidad Autonoma de Nuevo Leon, Av. Pedro de Alba, s/n Cd. Universitaria, San Nicolas de los Garza, Nuevo Leon, Mexico, 66451. 2 CIIDIT- Universidad Autonoma de Nuevo Leon, Apodaca, Nuevo Leon, Mexico.

16:00 **Non-thermal and thermal phase transitions in tungsten – a theoretical study** **JP.XV 48**
Y. Giret 1,2, S. L. Daraszewicz 2, D. M. Duffy 2, A. L. Shluger 2, and K. Tanimura 1
1 The Institute of Scientific and Industrial Research (ISIR), Osaka University, 8-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan, 2 London Centre for Nanotechnology, Department of Physics and Astronomy, University College London (UCL), Gower Street, WC1E 6BT, London, UK

16:00 **Photothermally induced bromination of carbon/polymer bipolarplate materials for fuel cell applications** **JP.XV 49**
Martin Schade 1,2, Steffen Franzka 1,2, Nils Hartmann 1,2
1 Fakultät fuer Chemie, Universität Duisburg-Essen, 45117 Essen, Germany; 2 CENIDE - Center for Nanointegration Duisburg-Essen, 47048 Duisburg, Germany

16:00 **Characterization of hard coatings produced by laser cladding using laser-induced breakdown spectroscopy technique** **JP.XV 50**
V. Piñon, J.M. Amado, A. Varela, M.J. Tobar, M. Mateo, A. Yañez, G. Nicolas
Universidad de A Coruña, Laboratorio de Aplicaciones Industriales del Láser, Campus de Ferrol, Spain Tel.: +34 981337400x3274; fax: +34 981337410; gines@udc.es

16:00 **Hydrodynamic instabilities and ablation phenomena under the laser melting of powder layers** **JP.XV 51**
Yuri Chivel
MerPhotonics 42100, Saint Etienne, France

16:00 **Tailored Localized Surface Plasmon Resonance of noble metal thin films by single pulse Laser Annealing under a pressurized inert environment** **JP.XV 52**
N. Kalfagiannis1, L. Bowen2, W.M. Cranton1, P. Patsalas3 and D.C. Koutsogeorgis1,*
1School of Science and Technology, Nottingham Trent University, NG11 8NS, Nottingham, UK; 2G. J. Russell Microscopy Facility, University of Durham, South Road, Durham, DH1 3LE, UK; 3Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

16:00 **Understanding photophysical effects : NPLIN on glycine, L - Histidine and D, L - glutamic acid** **JP.XV 53**
Bertrand Clair, Aziza Ikni, Stephane Veesler, Philippe Scouflaire, Anne Spasojević-de Biré
Laboratoire Structures Propriétés et Modélisation des Solides, UMR 8580, Grande Voie des Vignes, 92295 Chatenay Malabry Cedex; Laboratoire Structures Propriétés et Modélisation des Solides, UMR 8580, Grande Voie des Vignes, 92295 Chatenay Malabry Cedex; Centre interdisciplinaire de nanoscience de Marseille, UPR 3118, campus de Luminy case 913, 13288 Marseille cedex 9; Laboratoire Energie MacroMoléculaire et Combustion, UPR 288, Grande Voie des Vignes, 92295 Chatenay Malabry Cedex; Laboratoire Structures Propriétés et Modélisation des Solides, UMR 8580, Grande Voie des Vignes, 92295 Chatenay Malabry Cedex

16:00 **Characterization of periodic nanostructures in 355nm and 1064nm ps and 1030nm fs laser-irradiated electroplated Cu films** **JP.XV 54**
George Vakanas, Geert Van Steenberge, Antonios Florakis, Bjorn Vandecasteele, Ingrid De Wolf
Intel Corporation, 5000 W. Chandler Blvd, Chandler, Arizona 85226, USA; imec, Kapeldreef 75, B-3001 Leuven (Heverlee), Belgium, MTM, Faculty of Engineering, Kasteelpark Arenberg 44, B3001 Leuven (Heverlee), Belgium

16:00 **Comparison of pulsed laser treated glassy carbon surfaces by spectroscopic ellipsometric and Raman spectroscopic investigations** **JP.XV 55**
J. Csontos 1, Z. Pápa 1, M. Füle 2, J. Budai 1, Z. Toth 2
1: University of Szeged, Department of Optics and Quantumelectronics, H-6701 Szeged Dóm tér 9., Hungary; 2: University of Szeged, Department of General and Environmental Physics, H-6720 Szeged, Boldogasszony sgt. 6., Hungary

16:00 **Laser induced epitaxy of polycrystalline silicon films on glass substrates** **JP.XV 56**
P. Prathap *, Z. Said-Bacara, A. Slaouia, C. Klimmb, C. Beckerb, F. Mermetc, A. Bahoukac
aInESS, CNRS-UdS, Strasbourg Cedex-2, France. bHelmholtz Zentrum Berlin für Materialien und Energie, Institute Silicon Photovoltaics, Kekuléstr. 5 12489 Berlin, Germany cIREPA LASER, Parc d'Innovation Pôle API, ILLKIRCH-GRAFFENSTADEN, FRANCE

16:00 **Investigation into removal pathways during nanosecond pulsed laser ablation of Li-ion battery electrodes** **JP.XV 57**
Adrian Lutey*, Maurizio Fiorini^, Alessandro Fortunato*, Alessandro Ascari*
*Dipartimento di Ingegneria Industriale, Università di Bologna; ^Dipartimento di Ingegneria Civile, Chimica, Ambientale e dei Materiali, Università di Bologna

16:00 **Laser printing of copper nanoparticles ink and laser sintering of silver ink patterns** **JP.XV 58**
M. Makrygianni1, I. Theodorakos1, D. Karnakis2, I. Zergioti1
1National Technical University of Athens, Physics Department, Zografou Campus Greece, 15780 2 Oxford Lasers Ltd, Unit 8, Oxfordshire, OX11 7HP, United Kingdom

30 May 2014

Laser surface nano & micro-structuring I : J.Bonse

08:30 **Ab initio determination of transient electronic properties of an ultrafast laser irradiated metal surface. Consequences for LIPSS formation (Invited)** **J.XVI 1**
E. Bévillon, J.-P. Colombier, V. Recoules, R. Stoian
Université de Lyon, F-42023, France, CNRS, UMR5516, Laboratoire Hubert Curien, Université Jean Monnet, 42000 St-Etienne, France ; Université de Lyon, F-42023, France, CNRS, UMR5516, Laboratoire Hubert Curien, Université Jean Monnet, 42000 St-Etienne, France ; CEA DIF, F-91297 Arpajon, France ; Université de Lyon, F-42023, France, CNRS, UMR5516, Laboratoire Hubert Curien, Université Jean Monnet, 42000 St-Etienne, France

09:00 **Comparison of LIPSS formation induced by accumulative pulse of nanosecond and picosecond laser beams in the UV regime** **J.XVI 2**
T.T.D.Huynh, A. Petit, N. Semmar
GREMI-UMR 7344, CNRS/Université d'Orléans, 14, rue d'Issoudun, BP 6744, 45067 Orléans cedex2, France

09:15 **On the large area LIPSS coverage by multiple pulses and the influence of pre-structuring** **J.XVI 3**
Juergen Reif (a), Christian Martens (a), Sebastian Uhlig (a), Markus Ratzke (a), Olga Varlamova (a), Stephane Valette (b), Stephane Benayoun (b)
(a) Brandenburgische Technische Universitaet – BTU, Cottbus, Germany; (b) LTDS, Ecole Centrale de Lyon, Ecully France

09:30 **Dynamics of laser-induced structure formation on solid surfaces – moving ripples** **J.XVI 4**
Christian Martens, Markus Ratzke, Olga Varlamova, Juergen Reif
Brandenburgische Technische Universitaet – BTU, Cottbus, Germany

09:45 **Study on the coloration of alumina induced by laser** **J.XVI 5**
J. Penide (1), F. Quintero (1), F. Arias-González (1), J. del Val (1), R. Comesaña (3), A. Riveiro (1, 2), F. Lusquiños (1), J. Pou (1)
(1) Applied Physics Department, University of Vigo ETSII, Lagoas-Marcosende, 9. Vigo, 36310, SPAIN; (2) Centro Universitario de la Defensa, Escuela Naval Militar, Plaza de España 2, 36920 Marín, SPAIN; (3) Materials Engineering, Applied Mechanics and Construction Dpt., University of Vigo, EEI, Lagoas-Marcosende, Vigo, E- 36310, Spain.

10:00 **Cofee Break**

Laser surface nano & micro-structuring II : J. Reif

10:30 **Femtosecond time-resolved diffraction and two-color dynamics of laser-induced periodic surface structures on fused silica** **J.XVII 1**
S. Höhm (1), A. Rosenfeld (1), M. Herzlieb (1), J. Krüger (2), J. Bonse (2)
(1) Max-Born-Institut, Max-Born-Straße 2a, D-12489 Berlin, Germany ; (2) BAM Bundesanstalt für Materialforschung und -prüfung, Unter den Eichen 87, D-12205 Berlin, Germany

10:45 **Experimental realization of adaptive femtosecond laser pulse shaping for optimized laser microstructuring of materials** **J.XVII 2**
Stefan Kontermann, Wolfgang Schippers, Anna Lena Baumann, and Wolfgang Schade
Fraunhofer Heinrich Hertz Institute, EnergieCampus, Am Stollen 19B, 38640 Goslar, Germany; Fraunhofer Heinrich Hertz Institute, EnergieCampus, Am Stollen 19B, 38640 Goslar, Germany; Fraunhofer Heinrich Hertz Institute, EnergieCampus, Am Stollen 19B, 38640 Goslar, Germany; Fraunhofer Heinrich Hertz Institute, EnergieCampus, Am Stollen 19B, 38640 Goslar, Germany and Clausthal University of Technology, Institute of Energy Research and Physical Technologies and EFZN, EnergieCampus, Am Stollen 19A, 38640 Goslar, Germany

11:00 **Micro- and nano-structures micromachined by femtosecond laser irradiation on stainless steel, titanium, aluminum, and copper** **J.XVII 3**
Edwin Jee Yang Ling, Tanvir Ahmmed, Phillip Servio, Anne Kietzig
Biomimetic Surface Engineering Laboratory, Department of Chemical Engineering, McGill University, 3610 University Street, Montreal, Quebec H3A 0C5, Canada

11:15 **Periodic grating structures self-organized on titanium surface by double femtosecond laser pulses** **J.XVII 4**
1234 Laura Gemini, 12 Masaki Hashida, 12 Yasuhiro Miyasaka, 3 Jiri Limpouch, 4 Tomas Mocek and 12 Shuji Sakabe
1 Advanced Research Center for beam Science, Institute for Chemical Research, Kyoto University, 611-0011 Kyoto, Japan 2 Department of Physics, Graduate School of Science, Kyoto University, 606-85802 Kyoto, Japan 3 FNSPE, Czech Technical University in Prague, 11519 Prague, Czech Republic 4 HiLASE Project, Institute of Physics, ASCR, 18221 Prague, Czech Republic

11:30 **Formation of LIPSS on Niobium by femtosecond laser irradiation** **J.XVII 5**
A. Rodriguez 2, A. Pan 1 2, A. Días1 2, M. Gómez-Aranzadi 1 2, S. M. Olaizola1 2 1 CEIT-IK4 and Tecnun (University of Navarra), Manuel Lardizabal 15, 20018 San Sebastián 2 CIC microGUNE, Goiru Kalea 9 Polo Innovación Garaia, 20500 Arrasate-Mondragón, Spain.

11:45 **SYMPOSIUM CLOSING REMARKS**

12:00 **Lunch**

E-MRS 2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM K

Challenges for Group III Nitride Semiconductors for Solid State Lighting and Beyond

Symposium Organizers:

Andreas Waag , Braunschweig University of Technology, Braunschweig, Germany

Enrique Calleja, Ciudad Universitaria, Madrid, Spain

Martin Strassburg, OSRAM Opto Semiconductors GmbH, Regensburg, Germany

Dave Cherns, University of Bristol, UK

Published in Physica Status Solidi (c).

26 May 2014

09:00 **Welcome Address**

LED and 3D GaN : A. Waag, C. C. Yang, P. Gilet and B. Witzigmann

09:10 **Materials for Solid State Lighting** **K.I 1**
Stefan Lange
OSRAM GmbH, Corporate Technology, Research & Innovation, Development Phosphor Materials, Schwabmünchen, Germany

09:40 **Multiple-section core-shell InGaN/GaN quantum-well nanorod light-emitting diode array** **K.I 2**
Che-Hao Liao, Charng-Gan Tu, Chia-Ying Su, Wen-Ming Chang, Horng-Shyang Chen, Yu-Feng Yao, Chieh Hsieh, Hao-Tsung Chen, Chih-Kang Yu, Yean-Woei Kiang, Chih-Chung (C. C.) Yang
National Taiwan University, Taipei, Taiwan

10:10 **Coffee break**

10:30 **Does Nanowire LED become a reality?** **K.I 3**
Philippe Gilet
Aledia, 17 rue des Martyrs, Building M23, 38054 Grenoble Cedex 09, France

11:00 **Growth of InGaN/GaN core-shell structures by molecular beam epitaxy** **K.I 4**
S. Albert 1, A. Bengoechea-Encabo 1, M. Sabido-Siller 1, M. Müller 2, G. Schmidt 2, S. Metzner 2, P. Veit 2, F. Bertram 2, M. A. Sánchez-García 1, J. Christen 2, E. Calleja 1
1. ISOM-Dept. Ing. Electrónica, ETSIT, Univ. Politécnica, 28040 Madrid, Spain 2. Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, 39106 Magdeburg, Germany

11:15 **Position-controlled MOVPE growth and electro-optical characterization of core-shell InGaN/GaN microrod LED structures** **K.I 5**
Tilman Schimpke 1 2, Martin Mandl 1 2, Michael Binder 1, Dominik Scholz 1, Xue Wang 2, Jana Hartmann 2, Andreas Waag 2, Xian Kong 3, Achim Trampert 3, Markus Müller 4, Benjamin Max 4, Frank Bertram 4, Jürgen Christen 4, Hans-Jürgen Lugauer 1, M. Strassburg 1
1. OSRAM Opto Semiconductors GmbH, Leibnizstr. 4, 93055 Regensburg, Germany 2. Institut für Halbleitertechnik, TU Braunschweig, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany 3. Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5-7, 10117 Berlin, Germany 4. Institut für Halbleiterphysik, Otto-von-Guericke-Universität, Universitätsplatz 2, 39106 Magdeburg, Germany

11:30 **Influence of silane on the growth of 3D GaN columns and core-shell LEDs** **K.I 6**
Xue Wang 1, Johannes Ledig 1, Xiang Kong 2, Jana Hartmann 1, Lorenzo Caccamo 1, Matin Sadat Mohajerani 1, Martin Mandl 1 3, Tilman Schimpke 1 3, Achim Trampert 2, Gerhard Lilienkamp 4, Winfried Daum 4, Martin Straßburg 3, Hergo-H. Wehmann 1, Andreas Waag 1
1 Institut für Halbleitertechnik, TU Braunschweig, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany; 2 Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5-7, 10117 Berlin, Germany; 3 Osram Opto Semiconductors GmbH, Leibnizstraße 4, 93055 Regensburg, Germany; 4 Institute of Energy Research and Physical Technologies, Clausthal University of Technology, Leibnizstraße 4, 38678 Clausthal, Germany

11:45 **Photonic Crystal Effects in Light Emission from Ordered Core Shell InGaN/GaN Nanorods** **K.I 7**
C.J. Lewins 1, S.M. Lis 1, E.D. Le Boulbar 1, I. Girgel 1, P.R. Edwards 2, R.W. Martin 2, P.A. Shields 1, and D.W.E. Allsopp 1*
1. Dept. Electrical & Electronic Engineering, University of Bath, Bath, BA2 7AY, UK; 2. Dept. of Physics, SUPA, University of Strathclyde, Glasgow, G4 0NG, UK; *Email: D.Allsopp@bath.ac.uk

12:00 **Lunch break**

13:30 **Growth and characterization of nanowire-based LEDs** **K.I 8**
Jonas Ohlsson 1 3, Zhaoxia Bi1 , Rafal Ciechonski 2, Kristian Storm 1, Bo Monemar1, and Lars Samuelson 1´2 3
1. Lund University, Solid State Physics/Nanometer Structure Consortium, Lund, Sweden 2. Glo AB, Ideon Science Park, Lund, Sweden and Sunnyvale, CA, USA 3. QuNano AB, Ideon Science Park, Lund, Sweden

14:00 **III-nitride based Nanowire Arrays: Simulation of Electrical and Optical Properties** **K.I 9**
Bernd Witzigmann
University of Kassel, Computational Electronics and Photonics Group, Electrical Engineering/Computer Science Department, Wilhelmshöher Allee 71 D-34121 Kassel Germany

14:30 **Carrier dynamics in GaInN/GaN quantum well and nanowire LEDs** **K.I 10**
Daniel Sager1, Oliver Pfingsten1, Robert Köster2, Artur Poloczek2, Werner Prost2, Franz Josef Tegude2, Tobias Meyer3, Berthold Hahn3, Gerd Bacher1
1Werkstoffe der Elektrotechnik & CENIDE, Universität Duisburg-Essen, Bismarckstr. 81, 47057 Duisburg, Germany, 2Halbleitertechnologie & CENIDE, Universität Duisburg-Essen, Lotharstr. 55, 47048 Duisburg, Germany, 3OSRAM Opto Semiconductors GmbH, Leibnizstr. 4, 93055 Regensburg, Germany

15:00 **AlGaN/AlN Stranski-Krastanov quantum dots with improved luminescence internal quantum efficiency** **K.I 11**
C.Himwas 1, M. den Hertog 1, F. Donatini 1, Le Si Dang1, R. Songmuang 1, and E. Monroy 2
1. CEA-CNRS Group «Nanophysique et Semiconducteurs», Institut Neel-CNRS, 25 rue des Martyrs, 38042 Grenoble Cedex 9, France. 2. CEA-CNRS Group «Nanophysique et Semiconducteurs», INAC-SP2M, CEA-Grenoble, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France

15:15 **Direct visualization of optical properties on nanometerscale of InGaN/GaN core-shell microrods** **K.I 12**
Marcus Müller1, Benjamin Max1, Gordon Schmidt1, Silke Petzold1, Peter Veit1, Frank Bertram1, Jürgen Christen1, Martin Mandl2, Tilman Schimpke2, and Martin Strassburg2
1 Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany 2 OSRAM Opto Semiconductors GmbH, Regensburg, Germany

15:30 **Coffee break**

16:00 **Selective Area Growth of Ga-polar GaN nanocolumn by Molecular Beam Epitaxy: morphology, structure and optical emission** **K.I 13**
A. Urban 1, J. Malindretos 1, A. Rizzi 1; M. Müller 2, G. Schmidt 2, C. Karbaum 2, P. Veit 2, F. Bertram 2, and J. Christen2
1 Georg-August-University Goettingen, IV. Physikalisches Institut, Friedrich-Hund-Platz 1, 37077 Goettingen, Germany; 2 Otto-von-Guericke-University Magdeburg, Institute of Experimental Physics, Universitaetsplatz 2, 39106 Magdeburg, Germany

16:30 **Whispering gallery modes from nonpolar InGaN quantum wells deposited on GaN rods** **K.I 14**
C. Tessarek 1 2, M. Heilmann 1, G. Sarau 1, and S. Christiansen 1 3
1. Max Planck Institute for the Science of Light, Günther-Scharowski-Str. 1, 91058 Erlangen, Germany; 2. University Erlangen-Nuremberg, Institute of Optics, Information and Photonics, Staudtstr. 7/B2, 91058 Erlangen, Germany; 3. Helmholtz Centre Berlin for Materials and Energy, Hahn-Meitner Platz 1, 14109 Berlin, Germany

16:45 **Blue, green and yellow light – emitting diodes based on ordered InGaN nanocolumns by PAMBE** **K.I 15**
A. Bengoechea-Encabo 1, S. Albert 1, D. Lopez-Romero 1, F. Barbagini 1, A. Torres-Pardo 2 3, J. M. Gonzalez-Calbet 2, M. A. Sanchez-Garcia 1, E. Calleja 1
1. ISOM-Dept. Ing. Electrónica, ETSIT, Univ. Politécnica, 28040 Madrid, Spain; 2. Departamento de Quimica Inorgánica, Facultad de Químicas, Universidad Complutense de Madrid, 28040, Madrid, Spain; 3. CEI Campus Moncloa, UCM-UPM, Madrid, Spain A. Torres-Pardo.

Poster session : D. Cherns

17:00 **MOVPE growth mechanisms of catalyst-free self-organized GaN columns** **K.PI 1**
Xue Wang 1, Johannes Ledig 1, Uwe Jahn 2, Hergo-H. Wehmann 1, Tilman Schimpke 1 3, Martin Stra?burg 3, Andreas Waag 1
1 Institut für Halbleitertechnik, TU Braunschweig, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany; 2 Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5-7, 10117 Berlin, Germany; 3 Osram Opto Semiconductors GmbH, Leibnizstraße 4, 93055 Regensburg, Germany

17:00 **High luminescence efficiency of Eu-Doped GaN** **K.PI 2**
Yong Tae Kim 1, Ji -Ho Park 2, and Akihiro Wakahara 2
1. Semiconductor Materials and Devices Lab., Korea Institute of Science and Technology, Hwarangno 14-gil 5, Seoul, Korea; 2. Department of Electronics and Information Engineering, Toyohashi University of Technology, 1-1 Hibarigaoka, Toyohashi, Japan

17:00 **Temperature dependence of the luminescence bands of GaN films grown by close space sublimation** **K.PI 3**
L.A. Hernandez-Hernandez 1, J. R. Aguilar-Hernandez 1, F. de Moure-Flores 1 2, R. Mendoza-Perez 3, G. S. Contreras-Puente 1, O. de Melo 4, A. Escamilla-Esquivel 1, G. Santana 5
1. Escuela Superior de Física y Matemáticas – Instituto Politécnico Nacional, Edificio No. 9, U.P.A.L.M., San Pedro Zacatenco, C.P. 07738 México D.F.; 2. Facultad de Química, Universidad Autónoma de Querétaro, Querétaro C.P. 09790 México; 3. Universidad Autónoma de la Ciudad de México, Av. Prolongación San Isidro 151, Col San Lorenzo Tezonco, C.P. 09790 México D.F.; 4. Facultad de Física de la Universidad de La Habana, Colina Universitaria, 10400, La Habana, Cuba; 5. Instituto de Investigación en Materiales Universidad Nacional Autónoma de México, Coyoacan, C.P. 04510 México D.F.

17:00 **Optical and structural properties of GaN grown by Closed-Space Vapor Transport** **K.PI 4**
L.A. Hernandez-Hernandez 1, J. R. Aguilar-Hernandez 1, F. de Moure-Flores 1 2, R. Mendoza-Perez 3, G. S. Contreras-Puente 1, O. de Melo 4, A. Escamilla-Esquivel 1, G. Santana 5
1. Escuela Superior de Física y Matemáticas – Instituto Politécnico Nacional, Edificio No. 9, U.P.A.L.M., San Pedro Zacatenco, C.P. 07738 México D.F.; 2. Facultad de Química, Universidad Autónoma de Querétaro, Querétaro C.P. 09790 México; 3. Universidad Autónoma de la Ciudad de México, Av. Prolongación San Isidro 151, Col San Lorenzo Tezonco, C.P. 09790 México D.F.; 4. Facultad de Física de la Universidad de La Habana, Colina Universitaria, 10400, La Habana, Cuba; 5. Instituto de Investigación en Materiales Universidad Nacional Autónoma de México, Coyoacan, C.P. 04510 México D.F.

17:00 **The role of Si during the growth of GaN micro- and nanorods** **K.PI 5**
C. Tessarek 1 2, M. Heilmann 1, A. Haab 3, H. Hardtdegen 3, C. Dieker 4, E. Spiecker 4, S. Christiansen 1 5
1. Max Planck Institute for the Science of Light, Günther-Scharowski-Str. 1, 91058 Erlangen, Germany; 2. University Erlangen-Nuremberg, Institute of Optics, Information and Photonics, Staudtstr. 7/B2, 91058 Erlangen, Germany; 3. Peter Grünberg Institute (PGI-9), Forschungszentrum Jülich, 52425 Jülich, Germany; 4. University Erlangen-Nuremberg, Center for Nanoanalysis and Electron Microscopy, Erlangen; 5. Helmholtz Centre Berlin for Materials and Energy, Hahn-Meitner Platz 1, 14109 Berlin, Germany.

17:00 **Stark effect in GaNAsBi/GaAs quantum wells operating at 1.55 μm** **K.PI 6**
C. Bilel*, M. M. Habchi, A. Rebey, and B. El Jani
University of Monastir, Faculty of Sciences Unité de Recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5019 Monastir, Tunisia E-mail: * chakroun_ bilel01@yahoo.fr

17:00 **Investigations of in-situ reflectance during MOVPE of GaN on GaAs (100)** **K.PI 7**
J. Laifi 1, N. Chaaben 1, H. Bouazizi 1, N. Fourati 2, C. Zerrouki 2, A. Bchetnia 1 and B. El Jani 1.
1. Unité de Recherche sur les Hétéro-Epitaxies et Applications, Faculté des Sciences de Monastir 5019, Université de Monastir, Tunisia; 2. Cnam, Laboratoire de Physique, EA2405, 2 Rue Conté, 75003, Paris, France. Corresponding authors: chaabennoureddine6@gmail.com.

17:00 **MOVPE of GaN on high-index GaAs substrates** **K.PI 8**
J. Laifi 1, N. Chaaben 1, H. Bouazizi 1, C. Zerrouki 2, N. Fourati 2, A. Bchetnia 1 and B. El Jani 1.
1. Unité de Recherche sur les Hétéro-Epitaxies et Applications, Faculté des Sciences de Monastir 5019, Université de Monastir, Tunisia; 2. Cnam, Laboratoire de Physique, EA2405, 2 Rue Conté, 75003, Paris, France. Corresponding authors: chaabennoureddine6@gmail.com.

17:00 **The partial decomposition study of GaN at 1200 °C under N2** **K.PI 9**
H. Bouazizi, N. Chaaben, J. Laifi, C. Saidi, A. Bchetnia and B. El Jani.
Unité de Recherche sur les Hétéro-Epitaxies et Applications, Faculté des Sciences, Université de Monastir, 5019, Tunisia. Corresponding authors: chaabennoureddine6@gmail.com

17:00 **First study of AlGaN thermal decomposition under H2** **K.PI 10**
N. Chaaben, H. Bouazizi, J. Laifi, C. Saidi, A. Bchetnia and B. El Jani.
Unité de Recherche sur les Hétéro-Epitaxies et Applications, Faculté des Sciences, Université de Monastir, 5019, Tunisia. Corresponding authors: chaabennoureddine6@gmail.com

17:00 **Enhancement of optical characteristics of green-emitting spherical Lu3Al5O12: Ce3+ phosphor** **K.PI 11**
Young-Hyun Song 1, Eun-Jun Chung 1, Mong-Kwon Jung 2, Takaki Masaki 1, Dae-HoYoon 1
1. School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea; 2. Hyosung Corporation, R&D Business Labs, Anyang 431-080, Republic of Korea

17:00 **Effect of series resistance and interface states density on the electrical characteristics of (Mo/Au)/AlGaN/GaN heterostructures** **K.PI 12**
M. Mostefaoui 1 2, H. Mazari 1, S. Mansouri 1, Z. Benamara 1, R. Khelifi 1, N. Benseddik 1, K.Ameur 1, N. Benyahya 1, J.M. Bluet 3, W. Chikhaoui 3
1. Laboratoire de Microélectronique Appliquée, Département d'électronique,Université Djillali Liabès de Sidi Bel-Abbes, 22000 Sidi Bel-Abbes, Algérie; 2. Unité de Recherche en Energies Renouvelables en Milieu Saharien, Centre de Développement des Energies Renouvelables, P.O. Box 478, Adrar, Algeria; 3. Université de Lyon, Institut des Nanotechnologies de Lyon INL-UMR5270, CNRS, INSA de Lyon, Villeurbanne F-69621, France.

17:00 **GaN:Pr3+ nanostructures for red solid state light emission** **K.PI 13**
J. Rodrigues 1, M. Felizardo 2, E. Alves 2 3, A. J. Neves 1, G. Tourbot 4, T. Auzelle 4, B. Daudin 4, M. Boćkowski 5, K. Lorenz 2 3, T. Monteiro 1
1. Departamento de Física & I3N, Universidade de Aveiro, 3810-193 Portugal; 2. IST, Instituto Superior Técnico, Campus Tecnológico e Nuclear, Universidade de Lisboa, EN10, 2695-066 Bobadela LRS, Portugal; 3. IPFN, IST, Lisboa, Portugal; 4. CEA/CNRS Group,"Nanophysique et Semiconducteurs", INAC, CEA/Grenoble, 17 rue des Martyrs, Grenoble Cedex 9, 38054, France; 5. Institute of High Pressure Physics, Polish Academy of Sciences, 01-142 Warsaw, Poland

17:00 **The High Internal Quantum Efficiency of GaN epilayers grown on β-Ga2O3** **K.PI 14**
Mufasila M. Muhammed, Idris A. Ajia, Yoshikatsu Morishima, Yoshihiro Yamashita, Shinkuro Sato, Akito Kuramata, and Iman Roqan
Mufasila M. Muhammed; Idris A. Ajia; Iman Roqan - King Abdullah University of Science and Technology, Thuwal, Saudi Arabia. Yoshikatsu Morishima; Yoshihiro Yamashita; Shinkuro Sato; Akito Kuramata -Tamura Corporation, Sayama, Saitama 350-1328, Japan

17:00 **Decoupling the residual stress induced by lattice mismatch and CTE mismatch in GaN-based LED** **K.PI 15**
Y. C. Lin and C. Y. Liu
Dept. of Chemical Engineering and Materials Engineering, National Central University, Jhong-li, Taiwan, R. O. C

17:00 **Influence of indium composition on the Efficiency of InxGa(1-x)N Single-junction solar cell** **K.PI 16**
M. Mostefaoui 1 2,*, H. Mazari 1, S. Khelifi 2, N.Sahouane,A.Rouabhia 2
1. Unité de Recherche en Energies Renouvelables en Milieu Saharien, Centre de Développement des Energies Renouvelables, P.O. Box 478, Adrar, Algeria; 2. Laboratoire de Microélectronique Appliquée, Département d'électronique, Université Djillali Liabès de Sidi Bel-Abbes, 22000 Sidi Bel-Abbes, Algérie.

17:00 **Optical and structural characterization of heat treated InGaN/GaN SQW and MQW for quantum well intermixing** **K.PI 17**
T. C. Esteves 1, J. Rodrigues 1, M. Sousa 1, C. Nico 1, M. B. Lourenço 2, A. Redondo-Cubero 2, N. Franco 2, M. J. Soares 1, A. J. Neves 1, M. R. Correia 1, K.P. O'Donnell 3, E. Alves 2, K. Lorenz 2, T. Monteiro 1
1. Departamento de Física e I3N, Universidade de Aveiro, Campus Universitário de Santiago,3810-193 Aveiro, Portugal; 2. IPFN, Instituto Superior Técnico, Campus Tecnológico e Nuclear, Estrada Nacional 10, P-2695-066 Bobadela LRS, Portugal; 3. SUPA Department of Physics, University of Strathclyde, Glasgow, G4 0NG, Scotland,UK

17:00 **First-principles study of the structural, electronic, and optical properties of the ZnO/GaN heterojunction** **K.PI 18**
M. Zemzemi 1 and S. Alaya 1 2
1. Laboratory of Physics of Materials and Nanomaterials applied at Environment, Faculty of Sciences in Gabes, Gabes University, Erriadh City, Zrig, 6072 Gabes, Tunisia 2. King Faisal University, College of Science, Physics Department 31982 Hofuf, Saudi Arabia

17:00 **Modeling the emission characteristic of single 3D core-shell LEDs using ray tracing** **K.PI 19**
Johannes Ledig, Merten Popp, Hergo–H. Wehmann, Andreas Waag
Institut für Halbleitertechnik, Technische Universität Braunschweig, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany.

17:00 **Effects of Current-Crowding-Induced Self-Accelerating Thermal Process on Optical Degradation of GaN-Based Light-Emitting Diodes** **K.PI 20**
Eunjin Jung, Seongjun Kim, Young-un Gil, Seonghoon Jeong, Hyunsoo Kim
School of Semiconductor and Chemical Engineering, Semiconductor Physics Research Center, Chonbuk National University, Jeonju 561-756, Korea

17:00 **Impact of Schottky contacts on the electrical characteristics of single channel Al0.2Ga0.8N/GaN high electron mobility transistor with Al0.3Ga0.7N as back barrier** **K.PI 21**
Kuldeep Takhar, P. Bhattacharya, K. Ghosh, S. Ganguly, D. Saha and Apurba Laha
Department of Electrical Engineering and Center of Excellence in Nanoelectronics, Indian Institute of Technology Bombay, Mumbai 400076, India

17:00 **Synthesis of GaN fine powder from Ga(NO3)3□xH2O by DC arc thermal plasma** **K.PI 22**
Tae-Hee Kim, Sooseok Choi, Ye-seul Na (presenter) and Dong-Wha Park*
Department of Chemistry and Chemical Engineering and Regional Innovation Center for Environmental Technology of Thermal Plasma (RIC-ETTP), Inha University, 100 Inha-ro, Nam-gu, Incheon 402-751, Republic of Korea

17:00 **Heteroepitaxial growth and electric properties of scandium nitride films on m-face sapphire substrates** **K.PI 23**
Takeshi Ohgaki, Ken Watanabe, Isao Sakaguchi, Shunichi Hishita, Ohashi Naoki, Hajime Haneda
Environment and Energy Materials Research Division, National Institute for Materials Science

17:00 **Pulsed Laser Deposition of GaN Thin Film on Solution Processed ZnO Buffer Layer** **K.PI 24**
Hao-Yu Wu, Yu-Wen Cheng, Yu-Zhong Lin, Chien-Ting Liu, Pin-Chun Shen and Ching-Fuh Lin
Graduate Institute of Photonics and Optoelectronics, National Taiwan University

17:00 **GaN Film Without Stress by Pulsed Laser Deposition and Post-annealing Process** **K.PI 25**
Yu-Wen Cheng, Hao-Yu Wu, Yu-Zhong Lin, Pin-Chun Shen, Chien-Ting Liu, and Ching-Fuh Lin
Graduate Institute of Photonics and Optoelectronics, National Taiwan University

17:00 **Correlation of recombination processes with structural properties in InGaN/GaN based core-shell microLEDs** **K.PI 26**
M. S. Mohajerani 1, X. Wang1, J. Hartmann 1, L. Caccamo 1, J. Ledig 1, K. Hecht 1, T. Schimpke 2, M. Mandl 2, M. Strassburg 2, H. Schuhmann 3, M. Seibt 3, G. Lilienkamp 4, W. Daum 4, H.-H. Wehmann 1, A. Waag 1
1. Institut für Halbleitertechnik, TU Braunschweig, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany 2. Osram Opto Semiconductors GmbH, Leibnizstraße 4, 93055 Regensburg, Germany 3. Physikalisches Institut, Halbleiterphysik, Friedrich-Hund-Platz 1, D-37077 Göttingen, Germany 4. Institut für Energieforschung und Physikalische Technologien, Leibnizstr. 4, D-38678 Clausthal, Germany

17:00 **Photoelectrochemical properties of TiO2 coated InGaN layer for water splitting application** **K.PI 27**
Lorenzo Caccamo 1, Jana Hartmann 1, Xue Wang 1, Hao Zhou 1, Matin Sadat Mohajerani 1, Sanjeev Kumar Gurram 2, Günter Bräuer 2, Hergo-H. Wehmann 2, Hao Shen 1 and Andreas Waag 1
1. Institut für Halbleitertechnik, Technische Universität Braunschweig, Hans-Sommer-Straße 66, 38106 Braunschweig, Germany; 2. Fraunhofer Institute for Surface Engineering and Thin Films, Bienroder Weg 54e, 38108 Braunschweig, Germany

17:00 **Characterisation of 3D-GaN/InGaN Light Emitting Diodes using Electron Microscopy.** **K.PI 28**
Ian Griffiths 1, David Cherns 1, Martin Mandl 2, Tilman Schimpke 2, Martin Strassburg 2.
1. School of Physics, H H Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol, BS8 1TL, United Kingdom 2. Osram Opto Semiconductors GmbH, Leibnizstrasse 4, 93055 Regensburg, Germany

17:00 **Structure and luminescence properties of GaN-core/ZnO-shell nanowires** **K.PI 29**
Sunghoon Park, Soohyun Kim, Taeseop Hong and Chongmu Lee*
Department of Materials Science and Engineering, Inha University, Yonghyeon-dong, Nam-gu, Incheon 402 - 751, Republic of Korea

17:00 **Submicron confocal Raman and photoluminescence spectroscopy of In-rich InGaN light-emitting structures** **K.PI 30**
V.V. Strelchuk 1, O.F. Kolomys 1, A.S. Romanyuk1, and A.E. Belyaev 1, V.N. Pavlovskii 2, E.V. Lutsenko 2
1. V. Lashkarev Institute of Semiconductor Physics of NASU, 03028 Kiev, Ukraine; 2. B.I. Stepanov Institute of Physics, National Academy of Sciences of Belarus, Minsk, Belarus

17:00 **Temperature dependence of light emission from RE-doped semiconductors: 25 years after Favennec** **K.PI 31**
K.P.O'Donnell
Strathclyde U.

17:00 **Synthesis, crystallinty and morphology of GaN@ZnO nanocomposites via Ga(OH)3 nanostructures** **K.PI 32**
Bong Kyun Kang, Sung Ryul Mang, Keun Man Song and Dae Ho Yoon
Sungkyunkwan University

17:00 **Effect of wet chemical surface treatment on the surface photovoltage behavior of Ga-polar GaN columns** **K.PI 33**
M. Ali Deeb 1, J. D. Wei1, X. Wang 1, L. Caccamo 1, J. Hartmann 1, H.-H. Wehmann 1,W. Dziony 2, G. Lilienkamp 2, W. Daum 2, A. Waag 1
1. Institute of Semiconductor Technology, Braunschweig University of Technology, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany 2. Institute of Energy Research and Physical Technologies, Clausthal University of Technology, Leibnizstraße 4, 38678 Clausthal-Zellerfeld, Germany

17:00 **STEM-CL investigations on the influence of stacking faults on the optical emission of cubic GaN epilayers and cubic GaN/AlN multi-quantum wells** **K.PI 34**
R.M. Kemper 1 2, P. Veit 3, C. Mietze1 2, A. Dempewolf 3, T. Wecker1 2, J. Christen 3, D.J. As 1 2 and J.K.N. Lindner1 2
1. University of Paderborn, Department of Physics, Warburger Str. 100, 33098 Paderborn, Germany 2. Centrer for Optoelectronics and Photonics, Warburger Str. 100, 33098 Paderborn, Germany 3. Otto-von-Guericke-Un iversity, FNW/IEP, P.O. Box 4120, D-39016 Magdeburg, Germany

17:00 **Phosphor-converted white light from blue-emitting InGaN microrod LEDs** **K.PI 36**
Tilman Schimpke 1 3, Martin Mandl 1 3, Ion Stoll 1, Dominik Scholz 1, Franz Zwaschka 2, Daniel Bichler 2, Barbara Huckenbeck 2, Andreas Waag 3, Hans-Juergen Lugauer 1, Martin Strassburg 1
1. OSRAM Opto Semiconductors GmbH, Leibnizstr. 4, 93055 Regensburg, Germany; 2. OSRAM GmbH, Mittelstetter Weg 2, 86830 Schwabmünchen; 3. Institut f?r Halbleitertechnik, TU Braunschweig, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany.

17:00 **Anomalously weak diffusion of oxygen in GaN at temperatures up to 3400 K and pressures up to 9 GPa** **K.PI 37**
A. Nikolenko 1, B. Sadovyi 2 3, V. Strelchuk 1, A. Romanyuk 1, A. Belyaev 1, S. Porowski 2, J. Weyher 2, I. Grzegory 2, I. Petrusza 4, V. Turkievich 4 and V. Kapustianyk 3
1. V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 45, prospect Nauky, 03028 Kyiv, Ukraine; 2. Institute of High Pressure Physics PAS, Sokolowska str., 29/37, 01-142 Warsaw, Poland 3. Department of Physics, Ivan Franko National University of Lviv, 50, Dragomanova str., Lviv, 79005, Ukraine 4. V. N. Bakul Institute for Superhard Materials NAS Ukraine, 2, Avtozavodska str., Kyiv, 04074, Ukraine

17:00 **Vacancy-related microstructure evolution in GaN** **K.PI 38**
M.G. Ganchenkova 1, V.A. Borodin 2
1. NRNU MEPhI, Kashirskoe Sh. 31, 115409, Moscow, Russia; 2. NRC Kurchatov Institute, Moscow, 123182, Russia

17:00 **Si doping effects on structural, surface morphology and optical proprieties of GaN grown by MOCVD** **K.PI 39**
M. Bouzidi*, Z. Benzarti, I. Halidou, Z. Chine, B. El Jani
Université de Monastir, Faculté des Sciences Unité de recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5000 Monastir, Tunisia. E-mail: * elbouzidi-med16@yahoo.com

17:00 **Towards vertically emitting InGaN/GaN 3D nano-LEDs** **K.PI 40**
Jana Hartmann 1, Helena Franke 2, Matin Sadat Mohajerani 1, Johannes Ledig 1, Xue Wang 1, Frederik Steib 1, Martin Straßburg 3, Hergo-Heinrich Wehmann 1, Rüdiger Schmidt-Grund 2, Marius Grundmann 2, Andreas Waag 1
1. Technical University Braunschweig, Institute of Semiconductor Technology, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany; 2. University Leipzig, Institute of Experimental Physics III, Linnéstr. 5, 04103 Leipzig, Germany; T 3. OSRAM Opto Semiconductors GmbH, Leibnizstr. 4, 93055 Regensburg, Germany

17:00 **Sol-gel Synthesis and Characterization Tm3+:NaGd(WO4)2 Blue Phosphors for White-LED application** **K.PI 41**
A.Durairajan 1 2, M.A. Valente 2*, D. Balaji 1 and S.Moorthy Babu 1
1. Crystal Growth Centre, Anna University, Chennai-600025, India; 2. I3N-Aveiro, Department of Physics, University of Aveiro, Aveiro 3810 193, Portugal

17:00 **Study of Tb-doping of AlN by transmission electron microscopy** **K.PI 42**
T Walther, F Benz, HP Strunk
University of Sheffield, UK; University of Cambridge, UK; University of Stuttgart, Germany

17:00 **Preparation, structural and photoluminescence characterisation of Eu3+ doped bismuth gadolinium tungstate phosphors** **K.PI 43**
K. Pavani 1, J. Suresh kumar 1*, M. Jayasimhadri 2, M. P. F. Graça 1, M. J. Soares 1, M. A. Valente 1
1. Department of Physics and I3N, University of Aveiro, 3810-193 Aveiro, Portugal; 2. Department of Applied Physics, Delhi Technological University, Delhi 110042, India.

17:00 **Computational model of 2DEG mobility in the AlGaN/GaN heterostructures** **K.PI 44**
K. K. Abgaryan, D.L. Reviznikov, I. V. Mutigullin
Dorodnicyn Computing Centre of RAS

17:00 **STUDY OF ELECTRICAL CONDUCTIVITY AND ac DIELECTRIC PROPERTIES OF La0.8Ca0.2-XPbXFeO3 (x = 0.05, 0.10 AND 0.20) PEROVSKITE COMPOUNDS** **K.PI 45**
A. Benali 1, M. Bejar 1, E. Dhahri 1, F. Amaral 2 3, M.F.P. Graça 2, L.C. Costa 2.
1. Laboratoire de Physique Appliquée, Faculté des Sciences, B.P. 1171, 3000 Sfax, Université de Sfax, Tunisie; 2. I3N and Physics Department, University of Aveiro, 3810-193 Aveiro, Portugal; 3. Polytechnic Institute of Coimbra, 3045-601 Coimbra, Portugal

17:00 **Charging effects on heteropolar SiC/AlN and SiC/GaN interfaces** **K.PI 46**
Malgorzata Sznajder 1, Jacek A. Majewski 2
1. Faculty of Mathematics and Natural Sciences, University of Rzeszow, Pigonia 1a, 35-959 Rzeszow, Poland; 2. Faculty of Physics, University of Warsaw, ul. Hoza 69, PL-00-681 Warszawa, Poland

17:00 **Electrooptic and converse-piezoelectric properties of epitaxial GaN/Si structures for Optoelectronic applications** **K.PI 47**
M. Cuniot-Ponsard 1, I. Saraswati 2 4 S-M. Ko 3, M. Halbwax 2 Y-H. Cho 3, N-R. Poespawati 4, E. Dogheche 2
1. Laboratoire Charles Fabry, IOGS, CNRS, Univ Paris-Sud, 2 Avenue Augustin Fresnel, 91127 Palaiseau cedex, France; 2. Institut d'Electronique, Microélectronique et Nanotechnologie, Groupe Optoélectronique, IEMN UMR 8520 CNRS, Avenue Poincaré, 59652 Villeneuve d'Ascq, France; 3. Department of Physics and KI for the Nano-Century, Korea Advanced Institute of Science and Technology (KAIST), Daejeon 305-701, South Korea; 4. Electrical Engineering Department, Faculty Engineering, Universitas Indonesia, 42435, Depok, Indonesia

17:00 **A comparative structural investigation of MBE and MOVPE grown indium rich InGaN/GaN heterostructures** **K.PI 48**
M.P. Chauvat 1, Y. Wang 1, M. Morales, S. Valdueza-Felip 2, E. Monroy 2, and P. Ruterana 1
1. CIMAP, CNRS-ENSICAEN-CEA-UCBN, 6 Blvd. Maréchal Juin, 14050 Caen, France; 2. CEA-Grenoble, INAC/SP2M/NPSC, 17 rue des Martyrs, 38054 Grenoble, France.

17:00 **Self-consistent electro-thermo-mechanical simulation of nitride HEMTs** **K.PI 49**
M. Auf der Maur and A. Di Carlo
Dipartimento di Ingegneria Elettronica Universita` di Roma «Tor Vergata», Via del Politecnico 1, 00133 Roma

17:00 **High performance AlGaN channel HEMTs with a low specific contact resistance** **K.PI 50**
Jincheng Zhang, Xiangdong Li, Chunfu Zhang, Wei Ha, Xing Chen, Shuai Zhang, Shenglei Zhao, Xiaohua Ma, Yue Hao
Key Laboratory of Wide Band Gap Semiconductor Materials and Devices, School of Microelectronics, Xidian University, Xi'an 710071, People's Republic of China

17:00 **Impurity incorporation and yellow luminescence of nonplar, polar and semipolar GaN films** **K.PI 51**
S. R. Xu, J. C. Zhang, T. Jiang, X. W. Zhou, L. A. Yang, Y. Hao
Key Laboratory of Wide Band Gap Semiconductor Materials and Devices, School of Microelectronics, Xidian University, Xi'an 710071, People's Republic of China

27 May 2014

Challening aspects of III nitride: material characterisation, technology, new devices : M. Straßburg, A. Hangleiter and E. Monroy

08:30 **Impact of defects on emission efficiency of polar, nonpolar, and semipolar nitride quantum wells** — K.II 1
Andreas Hangleiter
Institute of Applied Physics Technische Universität Braunschweig 38106 Braunschweig, Germany

09:00 **Growth and thermoelectric properties of In(Ga)N thin film heterostructures** — K.II 2
B. Loitsch, J. (Zi-Jian) Ju, F. Schuster, M. Stutzmann, and G. Koblmüller*
Walter Schottky Institut and Physik Department, TU München, Garching, 85748, Germany

09:30 **Separating the effects of strain and variations in quantum well thickness and In content on the emission of InGaN/GaN nano-LEDs** — K.II 3
G. Sarau, M. Heilmann, M. Latzel, S. Christiansen
Max Planck Institute for the Science of Light, Günther-Scharowsky-Str. 1, 91058 Erlangen, Germany

09:45 **Localization of bound states in strained nitride superlattice heterostructures** — K.II 4
Pawel Strak, Pawel Kempisty, Agnieszka Jamroz, Konrad Sakowski, Stanislaw Krukowski
Institute of High Pressure Physics of the Polish Academy of Sciences

10:00 **Coffee break**

10:30 **GaN/Al(Ga)N nanostructures for intersubband optoelectronics** — K.II 5
E. Monroy 1, M. Beeler 1, Bellet-Amalric 1, C. Bougerol 1, P. Hillev 2, J. Schörmann 2, M. Eickhoff 2, M. Tchernycheva 3, F. H. Julien 3, A. Vardi 4, G. Vahir 4.
1. CEA-CNRS Group Nanophysics and Semiconductors, CEA/INAC/SP2M and CNRS-Institute Néel, 17 rue des Martyrs, 38054 Grenoble cedex 9, France; 2. I. Physikalisches Institut, Justus-Liebig-Universität Gießen, Heinrich-Buff-Ring 16, 35392 Gießen, Germany; 3. Photis Dept., Institut d'Electronique Fondamentale, Université Paris-Sud, 91405 Orsay cedex, France; 4. Solid State Institute and Department of Electrical Engineering, Technion-Israel Institute of Technology, Haifa 32000, Israel.

11:00 **Selective-area growth of GaN Nanowires by MOVPE** — K.II 6
P. M. Coulon, B. Alloing, V. Brändli, S. Chenot, M. Teisseire, P. Vennéguès, M. Leroux, J. Zuniga-Pérez
CRHEA-CNRS, Rue Bernard Grégory, F-06560 Valbonne, FRANCE

11:15 **Single photon emission from InGaN quantum dots in GaN nanowires grown in ordered arrays** — K.II 7
Ž. Gačević 1, S. Lazić 2, N. García-Lepetit 1, E. Chernysheva 2, S.Albert 1, A. Bengochea-Encabo 1, S. Metzner 3, M. Müller 3, F. Bertram 3, J. Christen 1, J.M. Calleja 2, and E. Calleja 1
1. ISOM-DIE, Universidad Politécnica de Madrid Spain; 2. Departamento de Física de Materiales, Universidad Autónoma de Madrid, E-28049 Madrid, Spain; 3. Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany

11:30 **The impact of trench defects on the efficiency of InGaN/GaN LEDs and implications for the green gap** — K.II 8
F. C-P. Massabuau, F. Oehler, A. Kovacs, M.J. Kappers, C.J. Humphreys, R.E. Dunin-Borkowski, R.A. Oliver
Department of Materials Science and Metallurgy, University of Cambridge, Cambridge CB2 3QZ, UK; Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany.

11:45 **The effect of alkali earth metal doping in GaN** — K.II 9
John Buckeridge, C. Richard A. Catlow, A. Walsh, D. O. Scanlon, A. A. Sokol
University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, United Kingdom

12:00 **Lunch break**

13:30 **Nucleation and growth mechanisms of spontaneously formed GaN nanowires in molecular beam epitaxy** — K.II 10
S. Fernández-Garrido 1, V. Kaganer 1, X. Kong 1, K. K. Sabelfeld 1 2, J. K. Zettler 1, T. Gotschke 1, R. Calarco 1, J. Grandal 1 3, E. Calleja 3, A. Trampert 1, L. Geelhaar 1 and O. Brandt1
1 Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5–7, 10117 Berlin, Germany; 2 Institute of Computational Mathematics and Mathematical Geophysics, Russian Academy of Sciences, Lavrentiev Prosp. 6, 630090 Novosibirsk, Russia; 3 ISOM and Dpt. de Ingeniería Electrónica, ETSI Telecomunicación Universidad Politécnica de Madrid, 28040 Madrid, Spain

14:00 **low-temperature p-type doping for high-efficiency green light emitters** — K.II 11
M. Malinverni 1, N. Grandjean 1, J.-M. Lamy 1, N. Kaufmann 1, L. Lahourcade 1, D. Martin 1, J.-F. Carlin 1, M. Rossetti 2, A. Castiglia2, M. Duelk 2, C. Velez 2
1. Institute of Condensed Matter Physics, Ecole Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland; 2. Exalos AG, CH-8952 Schlieren, Switerland

14:30 **High quality GaN on Si for solid state lighting – challenges and solutions** — K.II 12
Alois Krost 1, Armin Dadgar 1, and André Strittmatter 1 2
1.Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany; 2. Technische Universität Berlin Institut für Festkörperphysik Sekretariat EW 5-2 Hardenbergstraße 36 D-10623 Berlin Germany

15:00 **Investigation of cubic GaN quantum dots grown by the Stranski-Krastanov process** — K.II 13
M. Bürger, D. Reuter, and D.J. As
University of Paderborn, Department of Physics, Warburger Str. 100, D-33098 Paderborn, Germany

15:15 **Effect of Random Alloy Fluctuations on Emission Strength in InGaN/GaN LEDs** — K.II 14
M. Auf der Maur, A. Pecchia, D. Barettin, G. Penazzi, F. Sacconi, A. Di Carlo
University of Rome Tor Vergata; CNR-ISMN; University of Rome Tor Vergata; Bremen Center for Computational Materials Science; Tiberlab S.r.l.; University of Rome Tor Vergata

15:30 **QCSE and Excited States in thick InGaN/GaN QWs** — K.II 15
Felix Nippert 1, Steffen Westerkamp 1, Anna Nirschl 2, Ines Pietzonka 2, Tobias Schulz 3, Martin Albrecht 3, Alexander Franke 1, Thomas Kure 1, Christian Nenstiel 1, Gordon Callsen 1, Martin Strassburg 2, Axel Hoffmann 1
1. Institut für Festkörperphysik, Technische Universität Berlin, Hardenbergstraße 36, 10623 Berlin, Germany; 2. OSRAM Opto Semiconductors GmbH, Leibnizstraße 4, 93055 Regensburg, Germany; 3. Leibniz-Institut für Kristallzüchtung, Max-Born-Straße 2, 12489 Berlin, Germany.

15:45 **Influence of growth area reduction on cubic GaN** — K.II 16
R.M. Kemper 1 2, A. Kovács 3, T. Riedl 1 2, D. Meertens 3, K. Tillmann 3, D.J. As 1 2 and J. K. N. Lindner 1 2
1. University of Paderborn, Department of Physics, Warburger Str. 100, 33098 Paderborn, Germany 2. Center for Optoelectronics and Photonics, Warburger Str. 100, 33098 Paderborn, Germany 3. Ernst-Ruska Centre for Microscopy and Spectroscopy with Electrons, Forschungszentrum Jülich, 52425 Jülich, Germany

16:00 **Coffee break**

Nitride devices and their application : E. Calleja, M. Kuball and H. Fujioka

08:30 **Performance and reliability of GaN power electronic devices** **K.III 1**
Martin Kuball
H. H. Wills Physics Department University of Bristol Tyndall Avenue BS8 1TL U.K.

09:00 **Nitride based lasers in visualization and lighting** **K.III 2**
B. Stojetz, S. Tautz, C. Vierheilig, A. Loeffler, J. Ristic, S. Gerhard, C. Eichler, A. Lell, T. Wurm, J. Mueller, G. Bruederl, A. Somers, A. Avramescu, H. Koenig, U. Strauss
OSRAM Opto Semiconductors GmbH, Leibnizstr. 4, 93055 Regensburg, Germany

09:30 **Linear and nonlinear optical characterisation of polarity controlled AlGaN waveguides for integrated optics** **K.III 3**
M. Rigler 1, J. Buh 2, M. P. Hoffman 3, R. Kirste 3, M. Bobea 3, Michael Gerhold 4, R. Collazo 3, Z. Sitar 3, M. Zgonik 1 2
1. Faculty of Mathematics and Physics, University of Ljubljana, Jadranska 19, 1000 Ljubljana, Slovenia; 2. J. Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia; 3. Department of Materials Science and Engineering, North Carolina State University, Campus Box 7919, Raleigh, NC 27695-7919, USA; 4. Engineering Science Directorate, Army Research Office, P.O. BOX 12211, Research Triangle Park, NC 27703, USA

09:45 **Designing InGaN/GaN nano-LED arrays for etendue-limited applications** **K.III 4**
S.M. Lis, S.E.J. O?Kane, S.A. Fox, C.J. Lewins, Y.D. Zhuang, J. Sarma, P.A. Shields, D.W.E Allsopp
Dept. of Electronic and Electrical Engineering, University of Bath, Bath, BA2 7AY, UK

10:00 **Coffee break**

10:30 **Pulsed Sputtering Technique for Fabrication of Future Nitride Devices** **K.III 5**
Hiroshi Fujioka
Institute of Industrial Science , The University of Tokyo; JST-CREST

11:00 **High quality thick InGaN nanostructures grown by nanoselective area growth for new generation photovoltaic devices.** **K.III 6**
S. Suresh 2, P. Renaud 1 2, X. Li 1 2, Y. El. Gmili 2, K. Panztas 1 2, G. Orsal 2 3, G. Patriache 4, J. P. Salvestrini 2 3, A. Ougazzaden 1 2.
1. Georgia Institute of Technology/GTL, UMI 2958 GT/CNRS, 57070 Metz, France; 2. CNRS UMI 2958 Georgia Tech-CNRS, 57070 Metz, France; 3. Université de Lorraine, LMOPS, EA4423, 57070 Metz, France; 4. LPN CNRS, UPR, Route de Nozay, F-91460 Marcoussis, France.

11:15 **Polarization matching design of InGaN-based semi-polar quantum wells for color stability and improved wave function overlap** **K.III 7**
G. Kozlowski, S. Schulz and B. Corbett
Photonics Theory Group, Tyndall National Institute, Lee Maltings, Cork, Ireland

11:30 **Significant improvement of the device characteristics of light-emitting diodes based on GaN nanowires** **K.III 8**
M. Musolino, F. Limbach, A. Tahraoui, O. Brandt, L. Geelhaar, and H. Riechert
Paul-Drude-Institut für Festkörperelektronik

11:45 **Design and Fabrication of Uni-Travelling Carrier (UTC) Photodiode based on InxGa1-xN semiconductors** **K.III 9**
B. Alshehri 1, K. Dogheche 1, P.I. Seetoh 3, J.H. Teng 2, S.J. Chua 3, D. Decoster 1, E. Dogheche 1
1 Institute of Electronics, Microelectronics and Nanotechnology, Optoelectronics Group (IEMN CNRS) Villeneuve d'Ascq, France 2 Institute of Materials Research and Engineering (IMRE), Singapore 117602, Singapore, 3 Department of Electrical and Computer Engineering, National University of Singapore (NUS), Singapore 117576

12:00 **Lunch break**

13:30 **Confinement and transport characteristics of high-density two dimensional electron gas in novel GaN-based heterostructures** **K.III 10**
Jincheng Zhang*, Fanna Meng, Junshuai Xue, Juncai Ma, Linyu Shi, Zhongfen Zhang, Huijuan Wen, Zhiyu Lin, Hao Zhou, Yue Hao
Key Lab of Wide Band Gap Semiconductor Technology, School of Microelectronics, Xidian University, Xi'an 710071, China

14:00 **GaN-based devices for new gas sensor technologies** **K.III 11**
Martin W. G. Hoffmann 1 2 3, Jordi Sama 1, Olga Casals 1, Francisco Hernandez-Ramirez 1 3, Andreas Waag 2, Hao Shen 2, J. Daniel Prades 1
1. Department of Electronics, University of Barcelona, Barcelona, Spain; 2. Institut fur Halbleitertechnik, Technische Universitaet Braunschweig, Braunschweig, Germany; 3. Department of Advanced Materials for Energy Applications, Catalonia Institute for Energy Research (IREC), Barcelona, Spain.

14:30 **A continuous composition spread approach towards monolithic, wavelength-selective multichannel UV-photo-detector arrays** **K.III 12**
Holger von Wenckstern
Universität Leipzig, Institut für Experimentelle Physik II, Halbleiterphysik

15:00 **Optimization of the emission properties of cerium-doped nanophosphors** **K.III 13**
Lucie Devys Géraldine Dantelle Jean-Pierre Boilot Thierry Gacoin
Laboratoire de Physique de la Matière Condensée, UMR CNRS 7643 – Ecole Polytechnique – 91128 PALAISEAU Cedex, France

15:15 **BAIN thin layers for deep UV applications** **K.III 14**
X. Li 1 2, S. Suresh 2, Y. El Gmili 2, F. Genty 3, P. Voss1, J-P. Salvestrini 2 3, A. Ougazzaden 1 2.
1. Georgia Institute of Technology / GTL, UMI 2958, Georgia;Tech-CNRS, 57070 Metz, France; 2. CNRS UMI 2958, Georgia Tech-CNRS, 57070 Metz, France; 3. Université de Lorraine, LMOPS, EA4423, 57070 Metz, France

15:30 **High critical temperature ultra-thin NbN films for broadband single photon detection** **K.III 15**
Diane Sam-Giao, Eva Monroy, Stéphanie Pouget, Max Hofheinz, Val Zwiller
CEA Grenoble / INAC / SPSMS / LATEQS I CEA Grenoble / INAC / SP2M / NPSC I CEA Grenoble / INAC / SP2M / SGX I CEA Grenoble / INAC / SPSMS / LATEQS I TU Delft / Quantum transport group and CEA Grenoble / INAC / SP2M / NPSC

15:45 **Rectifying porous GaN p-n junctions fabricated by Chemical Vapor Deposition** **K.III 16**
J.J. Carvajal 1, O.V. Bilousov 1, O. Martínez 2, J. Jiménez 2, H. Geaney 3 4, C. O'Dwyer 3 4, F. Díaz 1, M. Aguiló 1
1. Física i Cristal•lografia de Materials i Nanomaterials (FiCMA-FiCNA) and EMaS, Universitat Rovira i Virgili (URV), Marcellí Domingo s/n, E-43007 Spain; 2. GdS-Optronlab, Departamento Física Materia Condensada, Univ. de Valladolid, Edificio I+D, Paseo de Belén, 11, 47011, Valladolid, Spain; 3. Department of Chemistry, University College Cork, Cork, Ireland; 4. Tyndall National Institute, Lee Maltings, Cork, Ireland

16:00 **PLENARY SESSION**

Characterization and III nitride technicology : D. Cherns, R. Martin and D. Prades

08:30 **Spatial Mapping of Gallium Nitride light emitters** **K.IV 1**
Robert W. Martin
Department of Physics, SUPA, University of Strathclyde, G4 0NG, UK

09:00 **Cathodoluminescence imaging and spectroscopy of nitride nano-structures with nm-scale spatial resolution** **K.IV 2**
Frank Bertram, Juergen Christen
Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany

09:30 **Revisiting non-radiative processes in InGaN quantum wells by combining photoluminescence and structural analyses** **K.IV 3**
T. Schulz 1, T. Remmele 1, T. Markurt 1, M. Albrecht 1, F. Nippert 2, A. Hoffmann 2, A. Nirschl 3, I. Pietzonka 3, H. Lugauer 3, M. Straßburg 3.
1. Leibniz-Institute for Crystal Growth, Max-Born-Str. 2, 12489 Berlin, Germany; 2. Technical University Berlin, Hardenbergstr. Straße des 17. Juni 135, 10623 Berlin, Germany; 3. OSRAM Opto Semiconductors GmbH, Leibnizstr. 4, 93055 Regensburg, Germany;

09:45 **Interface morphology and strain relaxation in axial (In,Ga)N/GaN nanowire heterostructures investigated by transmission electron microscopy** **K.IV 4**
X. Kong 1, S. Albert 2, A. Bengoechea-Encabo 2, M. Hanke 1, M.A. Sanchez-Garcia 2, E. Calleja 2, A. Trampert 1
1. Paul-Drude-Institut fur Festkorperelektronik, Hausvogteiplatz 5–7, D-10117 Berlin, Germany; 2. ISOM and Dpto. Ingenieria Electronica, ETSI Telecomunicacion, Universidad Politecnica, Ciudad Universitaria, 28040 Madrid, Spain.

10:00 **Coffee break**

10:30 **Femtosecond-laser surface structuring of nitrides and related materials** **K.IV 5**
Tobias Voss
Institute of Solid State Physics, University of Bremen, Germany and Department of Fiber Optical Sensor Systems, Fraunhofer Heinrich Hertz Institute, Goslar, Germany

11:00 **Electro-optical characterization of single InGaN/GaN core-shell LEDs with respect to current density** **K.IV 6**
Johannes Ledig, Xue Wang, Jana Hartmann, Markus Bähr, Andreas Fahl, Frederik Steib, Hergo–H. Wehmann, Andreas Waag
Institut für Halbleitertechnik, Technische Universität Braunschweig, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany.

11:15 **Ultrafast optical spectroscopy of Eu-doped GaN layers** **K.IV 7**
E. M. L. D. de Jong 1, W. D. A. M. de Boer 1, T. Gregorkiewicz 1, A. Koizumi 2, D. Timmerman 2, and Y. Fujiwara 2
1. Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands; 2. Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan.

11:30 **Nanometer-scale optical and structural properties of an AlInN/GaN based microcavity** **K.IV 8**
Gordon Schmidt, Marcus Müller, Anja Dempewolf, Silke Petzold, Peter Veit, Frank Bertram, Christoph Berger, Armin Dadgar, Alois Krost, Jürgen Christen
Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany

11:45 **Optical and Microstructural properties into nanoporous GaN films grown on sapphire by metal organic chemical vapor deposition** **K.IV 9**
B. Alshehri 1, S-M Lee 2, J-H Kang 2, K. Dogheche, S-H Gong 3, S-W Ryu2, E. Dumont 4, Y-H Cho 3, E. Dogheche 1
1. Institute of Electronics, Microelectronics and Nanotechnology, Optoelectronics Group (IEMN CNRS UMR 8520) Villeneuve d?Ascq, France; 2, Department of Physics, Chonnam National University, Gwangju 500-757, Republic of Korea; 3. Advanced Institute of Science Technology (KAIST), Daejeon 305-701, Republic of Korea; 4. Energy Research Centre, University of Mons, 7000 Mons, Belgium.

12:00 **Lunch break**

13:30 **Materials properties and electron dynamics in GaN-based LEDs by electron emission spectroscopy** **K.IV 10**
Lucio Martinelli 1, Justin Iveland 2, Marco Piccardo 2, Jacques Peretti 1, James S. Speck 2, and Claude Weisbuch 1 2.
1. Laboratoire de Physique de la Matie`re Condense´e, CNRS-Ecole Polytechnique, 91128 Palaiseau Cedex, France ; 2. Materials Department, University of California, Santa Barbara, California 93106, USA.

14:00 **Ion beam doping of gallium nitride and related nanostructures** **K.IV 11**
C. Ronning
Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena

14:30 **Plasmonic interaction, Indium and Silicon inclusion in Nitrides investigated by tip-enhanced Raman scattering** **K.IV 12**
E. Poliani 1, M. R. Wagner 1 2, J. S. Reparaz 1 2, M. Mandl 3, M. Strassburg 3, X. Kong 4, A. Trampert 4, C. Nenstiel 1, S. Fritze 5, A. Dadgar 5, A. Krost 5, A. Hoffmann 1 and J. Maultzsch 1.
1. Institutür Festkörperphysik, Technische Universität Berlin, 10623 Berlin, Germany; 2. ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain; 3. OSRAM Opto Semiconductors GmbH, 93055 Regensburg, Germany; 4. Paul Drude Institute, 10117 Berlin, Germany; 5. Institut für Experimentelle Physik, Fakultät für Naturwissenschaften, Otto-von-Guericke-Universität Magdeburg, Universitätplatz 2, 39016 Magdeburg, Germany;

15:00 **InGaN quantum dots: Potential sources for efficient recombination in the green spectral region** **K.IV 13**
S. Schulz, E. P. O'Reilly
Tyndall National Institute; Tyndall National Institute, Department of Physics, University College Cork

15:15 **Microstructural and optical properties of defects in GaN films grown on chemically vapor-deposited graphene layers** **K.IV 14**
Hyobin Yoo, Kunook Chung, Suk In Park, Miyoung Kim*, Gyu-Chul Yi*
Seoul National University

15:30 **The structure and composition of InxAl1-xN alloys grown by metal-organic vapour phase epitaxy** **K.IV 15**
A. Vilalta-Clemente1, M.P. Chauvat1, P. Gamarra2, M. Morales1, M. Tordjman2, J. F. Carlin3, M. A. di Forte-Poisson2, N. Grandjean3, and P. Ruterana1
1 CIMAP UMR 6252 CNRS-ENSICAEN-CEA-UCBN, 6, Boulevard du Maréchal Juin, 14050 Caen Cedex, France, 2 Alcatel-Thales, III-V Lab. Route de Nozay, 91460 Marcoussis, France, 3 Institute of Condensed Matter Physics (ICMP), Ecole Polytechnique de Lausanne (EPFL) 1015 Lausanne, Switzerland, 4 LPN, Route de Nozay, 91460 Marcoussis, France

15:45 **Study of semipolar (11-22) GaN-based light-emitting diodes grown on epitaxial lateral overgrowth GaN by using hexagon shaped-SiO2 pattern** **K.IV 16**
Jae-Hwan Lee 1, Sang-Hyun Han 1, Jihoon Kim 2, Sung-Nam Lee 1*
1. Optoelectronic Materials & Devices Laboratory, Department of Nano-Optical Engineering, Korea Polytechnic University, Korea; 2. Division of Advanced Materials Engineering, Kongju National University, Korea

16:00 **Coffee break**

SYMPOSIUM L

Chromogenic Materials and Devices

Symposium Organizers:

Aline Rougier, Institut de Chimie de la Matière Condensée de Bordeaux, Pessac, France

Claes G. Granqvist, The Angstrom Laboratory, Uppsala, Sweden

Bernard Dam, Chemical Engineering, Faculty of Applied Sciences Address, Delft, The Netherlands

Martyn Pemble, University College Cork, Ireland

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26 May 2014

Thermochromism I : Russel Binions, Bernard Dam

09:00 **Thermochromics and the Suntuitive® Interlayer** **L-I 1**
Harlan Byker
Pleotint, LLC

09:30 **Performance limits of thermochromic undoped and Mg-doped VO2 films and nanoparticles for energy efficient window applications** **L-I 2**
Shuyi Li, Gunnar A. Niklasson, Claes G. Granqvist
Department of Engineering Sciences, Solid State Physics, The Ångström Laboratory, Uppsala University, Uppsala, Sweden

09:45 **Combined optical and transport measurements during the metal-insulator transition in thin V2O3 films** **L-I 3**
T. Smets, L. Dillemans, M. Menghini, C.-Y. Su, and J.-P. Locquet
Department of Physics and Astronomy KU Leuven, Belgium

10:00 **Coffee Break**

Electrochromism I : Delia Milliron, Aline Rougier

10:30 **Electrochromic materials: Electronic, ionic and optical properties.** **L-II 1**
Gunnar A. Niklasson
Department of Engineering Sciences, Uppsala University, P.O. Box 534, SE-75121 Uppsala, Sweden

11:00 **A monolithic magnetron sputtering fabrication and properties of all-solid-state inorganic multilayered electrochromic transparent and reflective devices** **L-II 2**
1. Xungang Diao*, Guobo Dong, Fangyuan Gao 2. Qi Wang, Shuo Wang 3. Yudong Feng, Huaping Zuo
1. Laboratory for Infrared and Solar Energy, School of Physics and Nuclear Energy Engineering, Beihang University, Beijing, 100191, China 2. China South Glass CO. LTD., 301700, Tianjin, China 3. Science and Technology on Surface Engineering Laboratory, Lanzhou Institute of Physics, Lanzhou 730000, China

11:15 **Mixed oxide thin films deposited by magnetr?n sputtering at oblique angles for the development of electrochromic anodes** **L-II 3**
Jorge Gil-Rostra, Francisco Garcia-Garcia, Francisco Yubero, Agustin R. Gonzalez-Elipe
Nanotechnology on Surfaces laboratory, Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla). Avda. Americo Vespucio 49. 41092 Sevilla. Spain. http://www.sincaf-icmse.es/

11:30 **Pigment particle based electrochromic coatings and devices** **L-II 4**
Angela Šurca Vuk(1), Mohor Mihelcic(1), Ivan Jerman(1), Aline Rougier(2), Boris Orel(1)
1 National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia 2 CNRS, UniversitédeBordeaux,ICMCB,87avenueduDr.A.Schweitzer,PessacF-33608,France

11:45 **Lithium-doped nickel oxide and surfactant-assisted tungsten oxide thin films made by USP, toward improved electrochromic performances** **L-II 5**
J. Denayer, G. Bister, C. Henrist and R. Cloots
Laboratory GREEnMat, University of Liège (ULg); Environmental and Material Research Association (CRIBC-INISMa); Laboratory GREEnMat, University of Liège (ULg); Laboratory GREEnMat, University of Liège (ULg)

12:00 **Lunch BREAK**

Photochromism I : Yoshimura Makimura, Claes Granqvist

13:30 **Room temperature photochromic effect in Yttrium hydride** **L-III 1**
S. Zh. Karazhanov, T. Mongstad, Ch. Ch. You, J. P. M?hlen, and E. S. Marstein
Department for Solar Energy, Institute for Energy Technology, 2027 Kjeller, Norway

14:00 **Solid-state NMR studies of Photochromism in Oxygen-containing Yttrium hydride Thin-films** **L-III 2**
C. Vinod Chandran(a), Herman Schreuders(b), Bernard Dam(b), Jakob Bart(a), J. W. G. Janssen(a), P. J. M. van Bentum(a), Arno P. M. Kentgens(a)
(a) Solid-state NMR, Institute for Molecules and Materials, Nijmegen, The Netherlands (b) Chemical Engineering, Delft University of technology, Delft, The Netherlands

14:15 **Compositional and structural control of reversible photochromism in sodalites** **L-III 3**
Edward R. Williams, Jennifer A. Armstrong, Mark T. Weller
University of Bath UK

14:45 **Fast-responsive photochromic materials** **L-III 4**
Claudio Roscini (1,2), Nuria Vázquez-Mera (1,3), Daniel Ruiz-Molina (1,2), Jordi Hernando (3)
(1) Institut Català de Nanociència i Nanotecnologia (ICN2), Edifici ICN2, Campus UAB, 08193, Bellaterra, Spain; (2) Consejo Superior de Investigaciones Científicas (CSIC), Edifici ICN2, Campus UAB, 08193, Bellaterra, Spain; (3) Universitat Autònoma de Barcelona (UAB), Edifici C/n, Campus UAB, 08193, Bellaterra, Spain

15:00 **Spiropyran-Polyoxometalate Hybrid Materials with Highly Tunable Solid-State Photo- and Electrochromic Properties** **L-III 5**
Rémi Dessapt (a), Khadija Hakouk (a), Stéphane Jobic (a), Anne Dolbecq (b), Olivier Oms (b), Pierre Mialane (b)
(a) Institut des Matériaux Jean ROUXEL, Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322 Nantes Cedex 3, France (b) Institut Lavoisier de Versailles, UMR 8180, Université de Versailles Saint-Quentin en Yvelines, 45 Avenue des Etats-Unis, 78035 Versailles cedex, France

15:15 **TMTU as alternative redox couple for electrochromic and photoelectrochromic devices** **L-III 6**
Shankar Bogati, Helena Orvalho, Carmen Jerg, Andreas Georg, Wolfgang Graf
Fraunhofer Institute for Solar Energy Systems (ISE)

15:30 **Coffee Break**

Photochromism II : Smagul Khazanov, Martyn Pemble

16:00 **The hydrogen photochromism in solids** **L-IV 1**
Alexander Gavrilyuk
A.F. Ioffe Physical Technical Institute of the Russian Academy of Sciences

16:30 **Photochromism in Mn2+ doped phosphate glasses** **L-IV 2**
A.Cemmi, S.Baccaro, Q.Cai, N.Yang, F.Zhou, H.Xu, G.Chen
ENEA, Rome (Italy): A.Cemmi; S.Baccaro. ECUST, Shanghai (China): Q.Cai; N.Yang; F.Zhou; H.Xu; G.Chen.

16:45 **Understanding of atomic and electronic structure of SnWO4** **L-IV 4**
A. Kuzmin1, A. Anspoks1, A. Kalinko2, J. Timoshenko1, R. Kalendarev1
1 Institute of Solid State Physics, University of Latvia, Kengaraga street 8, LV-1063 Riga, Latvia; 2 Synchrotron SOLEIL, l'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France

17:00 **Sol-gel derived WO3 layer with photochromic effect** **L-IV 3**
Urša Opara Krašovec1, Tjaša Vidmar1, Andreas Georg2, Marko Topič1
1 University of Ljubljana, Faculty of Electrical Engineering, Tržaška cesta 25, 1000 Ljubljana, Slovenia 2 Fraunhofer Institute for Solar Energy Systems, Heidenhofstr. 2, 79110 Freiburg, Germany

17:15 **Photochromism of p-type GaN:Eu; a route to the Mg acceptor qubit** **L-IV 5**
K. P. O'Donnell, P. R. Edwards,M. J. Kappers, K. Lorenz, E. Alves and M. Boćkowski
Strathclyde U.; Cambridge U.; IST-CTN; Unipress

17:30 **Multifunctional information carriers with concealed quick response codes** **L-IV 6**
Melanie Ecker, Thorsten Pretsch*
BAM Federal Institute for Materials Research and Testing, Division 6.5, Polymers in Life Science and Nanotechnology, Unter den Eichen 87, 12205 Berlin, Germany

17:45 **Efficient photochemical isomerization of N,N'-di(t-butoxy carbonyl)indigos – characterization and applications** **L–IV 7**
Eric Daniel Głowacki, Dominik Farka, Elisa Tordin, Gundula Voss, Niyazi Serdar Sariciftci
Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Altenbergerstrasse 69, A-4040 Linz, Austria

27 May 2014

Electrochromism II : Xungang Diao, Aline Rougier

09:00 **Semi-interpenetrating polymer network architecture:Design and tailoring of new IR devices** **L–V 1**
C. Chevrot, D. Teyssié, F. Vidal, L. Beouch, P-H. Aubert, L. Goujon, N.Roy
Laboratoire de Physicochimie des Polymères et des Interfaces, Université de Cergy-Pontoise, France

09:30 **Novel Multicolor Electrochromic Device Based on Localized Surface Plasmon Resonance of Electrodeposited Silver Nanoparticles** **L–V 2**
Norihisa Kobayashi, Ayako Tsuboi, Kazuki Nakamura
Department of Image and Materials Science, Chiba University

09:45 **An all-organic electrochromic device containing poly(vinylidene fluoride-co-hexafluoropropylene), succinonitrile, and ionic liquid** **L–V 3**
Ting–Hsiang Chang, Chi-Wei Hu, Hsin-Wei Chen, and Kuo-Chuan Ho
Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan ; Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan

10:00 **Coffee Break**

Electrochromism III : C. Chevrot, Aline Rougier

10:30 **Plasmonic metal oxide nanocrystals and their near infrared electrochromism** **L–VI 1**
Delia J. Milliron(a,b,c), Anna Llordes(a), Guillermo Garcia(c), Tracy M. Mattox(a)
(a)The Molecular Foundry, Lawrence Berkeley National Laboratory, 1 Cyclotron Road, Berkeley, California 94720 (USA) (b)Department of Chemical Engineering, The University of Texas at Austin, 200 E. Dean Keeton Street, Austin, Texas 78712 (USA) (c)Heliotrope Technologies, 2625 Alcatraz Ave #377, Berkeley, California 94705 (USA)

11:00 **Printable materials for low-cost flexible electrochromic devices** **L–V 2**
P.J. Wojcik, L. Pereira, R. Martins, E. Fortunato
Departamento de Ciencia dos Materiais, FCT-UNL, Cenimat – I3N and Cemop-Uninova, Campus de Caparica, 2829-516 Caparica, Portugal

11:15 **Electrochromic Devices with Screen Printed Nano-particles on Electrodes for Ultrafast Switching** **L–VI 3**
Hojun Ryu, Seong M. Cho, Chil Seong Ah, Tae-Youb Kim, Ju Hee Song, Hye Yong Chu
Electronics and Telecommunications Research Institute

11:30 **Towards an all-printed electrochromic device on paper substrate** **L–VI 4**
A. Danine, L. Manceriu, C. Faure, A. Rougier
CNRS, University of Bordeaux, ICMCB, 87 avenue du Dr. Albert Schweitzer, 33608 Pessac, France.

11:45 **New poly(diaryldithienothiophen and alternated copolymers for yellow-to-transmissive electrochromic devices - Influence of the ionic liquide environment** **L–VI 5**
Zahra Abada (1), Alexia Charron (1), Bruno Schmaltz (2), Corinne Marcel (2), François Tran Van (1)
(1) Université François Rabelais, E.A. 6299. Physicochimie des Matériaux et des Electrolytes pour l'Energie (PCM2E), Par de Grandmont, 37200 Tours, France (2) CEA/DAM Le Ripault, B.P. 16, F.37260, Monts, France

Electrochromism IV : Agustin R. Gonzalz-Elipe, C. Granqvist

14:00 **New opportunities for chromogenic optical interference filters** **L VII 1**
B. Baloukas, L. Martinu
Department of Engineering Physics, École Polytechnique de Montréal, P.O. Box 6079, Succursale Centre-ville, Montréal, Québec H3C 3A7, CANADA

14:30 **Anodic electrochromic nickel oxide: the role of film composition and working potential** — L VII 2
Rui-Tao Wen, Gunnar A. Niklasson, Claes G. Granqvist
Department of Engineering Sciences, The Angstrom Laboratory, Uppsala University, Uppsala, Sweden

14:45 **Understanding Electrochromic Nickel Oxides/Hydroxides** — L VII 3
Sing Yang CHIAM
Institute of Materials Research & Engineering

15:00 **Enhanced lithium electrochromic performance of flexible Ni oxide films by Fe oxide addition with an atmospheric pressure plasma jet for flexible electrochromic application** — L VII 4
Yun-Sen Lin*, Pei-Ying Chuang, Ping-Shiun Shie
Feng Chia University, Department of Chemical Engineering

15:15 **Electrochromic Properties of Amorphous Tungsten Oxide a-WO3–x (0≤x≤1) Thin Films Studied under Li Ion Intercalation** — L VII 5
C.A. Triana, C.G. Granqvist, and G.A. Niklasson
Dept. of Engineering Sciences The Angstrom Laboratory Uppsala University P.O. Box 534 SE-75121 Uppsala Sweden

15:30 **Dynamic modulation of chromatic coordinates in multifunctional dye-sensitized photoelectrochemical devices** — L VII 6
Michele Manca (a); Simone Valente (a); Mehrdad Balandeh (b); Roberto Giannuzzi (a); Fabio Di Fonzo (b) and Giuseppe Gigli (a)
a) Center for Biomolecular Nanotechnologies @ UniLE, Istituto Italiano di Tecnologia, Via Barsanti snc, 73010, Arnesano (LECCE) - ITALY b) Center for Nano Science and Technology @PoliMi, Istituto Italiano di Tecnologia, Via Giovanni Pascoli 70/3, 20133 Milano, ITALY

POSTER SESSION : Bernard Dam, Claes Granqvist, Martyn Pemble, Aline Rougier

17:00 **Improved Electrochromic Durability of Nickel Oxide by Iridium Doping** — L VIII 1
Rui-Tao Wen, Gunnar A. Niklasson, Claes G. Granqvist
Department of Engineering Sciences, The Angstrom Laboratory, Uppsala University, P.O. Box 534, SE-751 21 Uppsala, Sweden

17:00 **Electrical and optical properties of Nb/Nd-codoped TiO2 thin films grown by pulsed-laser deposition** — L VIII 2
C. Tchiffo-Tameko (1), C. Cachoncinlle (1), E. Millon (1), C. Boulmer-Leborgne (1), J. Perriere (2,3), M. Nistor (4)
1) GREMI, UMR 7344 CNRS-Université Orléans, 45067 Orléans Cedex 2, France; 2) Sorbonne Universités, UPMC Université Paris 06, UMR 7588, INSP, 75005, Paris, France 3) CNRS, UMR 7588, INSP, 75005, Paris, France 4) NILPRP, L 22 P.O. Box. MG-36, 77125 Bucharest-Magurele, Romania

17:00 **Protons in Electrochromic Switchable Mirror Device Prepared by DC Magnetron Sputtering** — L VIII 3
Kazuki Tajima, Mika Shimoike, Yasusei Yamada, Kazuki Yoshimura
National Institute of Advanced Industrial Science and Technology

17:00 **Effect of oxygen on active Al doping concentration of ZnO:Al thin films made by PLD** — L VIII 4
M. Kodu, T. Arroval, T. Avarmaa, R. Jaaniso, I. Kink, S. Leinberg, K. Savi, M. Timusk
Institute of Physics, University of Tartu, Riia 142, 51014 Tartu, Estonia

17:00 **Effect of Temperature of Electrolyte Solution on the Anodic Deposition of Tungsten Oxide Thin Films** — L VIII 5
Kentaro NISHIYAMA,Junji SASANO,Seiji YOKOYAMA,Masanobu IZAKI
Toyohashi University of Technology

17:00 **Optical and electrical properties of Nd doped ZnO thin films** — L VIII 6
M. Nistor 1, E. Millon 2, C. Cachoncinlle 2, W. Seiler 3, N. Jedrecy 4,5, C. Hebert 4,5, J. Perrière 4,5
1 National Institute for Lasers, Plasma and Radiation Physics (NILPRP), L22 P.O. Box. MG-36, 77125 Bucharest-Magurele, Romania; 2 GREMI, UMR 7344 CNRS-Université d'Orléans, 45067 Orléans Cedex 2, France; 3 PIMM, UMR CNRS 8006 Arts et Métiers ParisTech, 151 Boulevard de l'Hopital, 75013 Paris, France; 4 Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, INSP, F-75005, Paris, France; 5 CNRS, UMR 7588, INSP, F-75005, Paris, France

17:00 **The Effect of Oxygen Vacancy Defects on Electrochromic Properties of Molybdenum Oxide** — L VIII 7
Binayak Dasgupta, Wai Kin Chim, Eng Soon Tok, Sing Yang Chiam
NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore & Institute of Materials Research and Engineering, A*STAR, Singapore : Electrical and Computer Engineering, National University of Singapore : Department of Physics, National University of Singapore : Institute of Materials Research and Engineering, A*STAR, Singapore

17:00 **Unprecedented Reversible Thermochromic Response of Polydiacetylenes with Molecular Level Understanding** — L VIII 8
Sunhi Park, Songyi Lee, Joonseong Lee, Minji Lee, Yu Kyung Cho, Junwoo Baek, Jinwook Kim, Sungnam Park
Myung Hwa Kim; Rakwoo Chang; Juyoung Yoon

17:00 **Theoretical study of the electronic structure of Cr3+ doped in silicate glasses** — L VIII 9
Olfa Taktak*, Hajer Souissi, Souha Kammoun
Applied Physics Laboratory; Physics Group luminescent materials; Faculty of Sciences of Sfax Tunisia;

17:00 **Influence of the Cr doping technique on light-emission properties of ZnSe crystals** — L VIII 10
I. Radevici, K.Sushkevich, H. Huhtinen, D. Nedeoglo, P. Paturi
Wihuri Physical Laboratory, Department of Physics and Astronomy, University of Turku, FI-20014, Turku, Finland; Faculty of Physics and Engineering, Moldova State University, Mateevici str. 60, MD-2009, Chisinau, Republic of Moldova

17:00 **Influence of the d- and f- doping impurities interaction on light-emission properties of ZnSe:Cr:Yb crystals** — L VIII 11
I. Radevici, K.Sushkevich, H. Huhtinen, D. Nedeoglo, P. Paturi
Wihuri Physical Laboratory, Department of Physics and Astronomy, University of Turku, FI-20014, Turku, Finland; Faculty of Physics and Engineering, Moldova State University, Mateevici str. 60, MD-2009, Chisinau, Republic of Moldova

17:00 **Intrinsic optical and structural properties of VO2 films on 2D hexagonal substrate** — L VIII 12
Hyeongkeun Kim1, Yena Kim1,2, Seung Ho Han1, Dae Ho Yoon2, and Woo Seok Yang1
1 Electronic Materials and Device Research Center, Korea Electronics Technology Institute 2 School of Advanced Materials Science and Engineering, Sungkyunkwan University

17:00 **Comparison of EC devices based on sprayed and sol-gel processed WO3 electrodes** — L VIII 13
G. Bodurov, Y.E. Romanyuk, A.N. Tiwari, E. Jung, D. Nadargi, M. Koebel
EMPA - Swiss Federal Laboratories for Materials Science and Technology

17:00 **Low toxicity electrolytes for electrochromic devices** — L VIII 14
Laura Manceriu, Abdeladine Danine, Aline Rougier
CNRS, Universit? de Bordeaux, ICMCB, 87 avenue du Dr. Albert Schweitzer, F-33608 Pessac, France

17:00 **Low-haze optically passive powdered coatings on the basis of cerium oxide** — L VIII 15
M. Mihelčič, A. ?urca Vuk, B. Orel
National Institute of Chemistry, Hajdrihova 19, SI-1000 Ljubljana, Slovenia

17:00 **Optical Properties of Photochromic Oxygen-containing Yttrium hydride Thin-films** — L VIII 16
N. Law, H. Schreuders, B. Dam
MECS, Chemical Engineering, TU Delft, Netherlands

17:00 **Effect of Al oxide top coatings on the durability of thermochromic VO2 thin films** — L VIII 17
Yu-Xia Ji, Shu-Yi Li, Gunnar A. Niklasson, Claes G. Granqvist
Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O. Box 534, SE-75121 Uppsala, Sweden

17:00 **Growth of copper oxide thin films by reactive sputtering: control of the texture and structure-properties relationship** — L VIII 18
Y. Wang1, J. Ghanbaja1, S. Migot1, P. Boulet1, P. Miska1, D. Horwat1, F. Soldera2, F. Mücklich2, J.F. Pierson1
1 Institut Jean Lamour, Université de Lorraine, Nancy, France 2 Department of Materials Science, Saarland University, Saarbrücken, Germany

17:00 **Tungsten-oxide-based monolithic solid-state electrochromics deposited on single substrate** — L VIII 19
Seung Ho Han1, So Hee Kang1,2, Sang Jiun Lee1,3, Hyeongkeun Kim1, Dae Ho Yoon2, Sahn Nahm3, Woo Seok Yang1
1Electronic Materials & Device Research Center, Korea Electronics Technology Institute, Korea 2School of Advanced Materials Science and Engineering, Sungkyunkwan University, Korea 3Department of Materials Science and Engineering, Korea University, Korea

17:00 **Thickness dependence simulations of the optical properties for a suspended particle device derived from scattering and absorption coefficients** — L VIII 20
David Barrios a, b,*, Ricardo Vergaz b, Jose M. Sanchez-Pena b, Braulio Garcia-Camara b, Claes G. Granqvist c, Gunnar A. Niklasson c
a Facultad de Inform?tica y Electr?nica, Escuela Superior Polit?cnica de Chimborazo, Riobamba, Ecuador b Grupo de Displays y Aplicaciones Fot?nicas, Departamento de Tecnolog?a Electr?nica, Universidad Carlos III de Madrid, C/ Butarque 15, E-28911 Legan?s, Madrid, Spain c Department of Engineering Sciences, The Angstrom Laboratory, Uppsala University, P.O. Box 534, SE-75121 Uppsala, Sweden

17:00 **Transparent p+-TiN:SnO2/n+-ITO tunnel diode** — L VIII 21
Chih-Yi Hsieh, Chin-Han Liao, and Cheng-Yi Liu
Department of Chemical and Materials Engineering National Central University, Jhong-Li, Taiwan

17:00 **Nanocomposite WO3-TiO2 material with electrochromic responses** — L VIII 22
Mateja Hocevar1, Andreas Georg2, Marko Topic1, Ursa Opara Krasovec1
1 University of Ljubljana, Faculty of Electrical Engineering, Trzaska 25, SI-1000 Ljubljana, Slovenia; 2 Fraunhofer Institute for Solar Energy Systems, Heidenhofstr. 2, 79110 Freiburg, Germany

17:00 **Thermochromic Oxides for 150 to 500 °C Range** — L VIII 23
Isil Top1, Halime S. Kocadag, Elif Kilic, and Mehmet A. Gulgun
1Isil Top, Faculty of Engineering and Natural Sciences, Sabanci University, Tuzla, Istanbul, 34956, TURKEY. Halime S. Kocadag,Faculty of Engineering and Natural Sciences, Sabanci University, Tuzla, Istanbul, 34956, TURKEY. Elif Kilic, Faculty of Engineering and Natural Sciences, Sabanci University, Tuzla, Istanbul, 34956, TURKEY. Mehmet A. Gulgun, Faculty of Engineering and Natural Sciences, Sabanci University, Tuzla, Istanbul, 34956, TURKEY. Halime S.Kocadag,Elif Kilic, Mehmet A. Gulgun,

17:00 **Deposition and properties of electhrochrommic Tungsten and Molybdenum oxide thin films** — L VIII 24
Z. Labadi, A. Subrahmanyam (*), Cs. Major, M. Takács, A.L. Toth, I. Bársony
Research Centre for Natural Sciences, Institute for Technical Physics and Materials Science (MFA) P.O.B. 49, H-1525 Budapest, HUNGARY; * Indian Institute of Technology, Madras Dept of Physics, IIT Madras 600036 Chennai, INDIA

17:00 **Prototype Vanadium Dioxide Nanoparticle Thermochromic Smart Window** — L VIII 25
Rafaël Sibilo, Alaric Taylor, Michael Powell, Ivan Parkin, Ioannis Papakonstantinou
UCL; UCL; UCL; UCL; UCL

17:00 **Chirality control in mixed system of achiral bent-core mesogen and photoreponsive rod-like molecule** — L VIII 26
Ki-Beom Kim, Myoung Hoon Song, Seong Jun Kang, Suk-Won Choi
Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Yongin, Republic of Korea: School of Mechanical and Advanced Materials Engineering, UNIST, Ulsan, Republic of Korea

17:00 **Coupled excited states in Nickel (II) complexes probed by absorption spectroscopy** — L VIII 27
Nour Gharsallah*, Hajer Souissi, Souha Kammoun
Laboratoire de Physique Appliquée, Groupe de physique des matériaux luminescents Faculté des Sciences de Sfax, B. P ; 802, 3018 Sfax, Tunisie.

17:00 **Electrochromic properties of non-stoichiometric Nickel oxide (NiO) thin films in various electrolytes** — L VIII 28
M. Da Rocha, L. Manceriu, H. Moulki, A. Rougier
ICMCB- CNRS, 87 av. Du Dr. Schweitzer, 33608 Pessac, France

17:00 **Origin of the photochromic properties of PbMoO4 and Pb2MoO5 crystals** — L VIII 29
S. Nedilko (1), Yu. Hizhnyi (1), V. Chornii (1), M. Trubitsyn (2), I. Volnyanskaya (2)
(1) Taras Shevchenko National University of Kyiv, Volodymyrska Street 64/13, 01601, Kyiv, Ukraine; (2) Oles Honchar Dnipropetrovsk National University, Naukova Street 9, 49050, Dnipropetrovsk, Ukraine

17:00 **Structural Properties of MBE-Grown Epitaxial Cr2O3 Thin Films on Al2O3** — L VIII 30
Chen-Yi Su, Leander Dillemans, Ruben Lieten, Pía Homm, Tomas Smets, Mariela Menghini, Jean-Pierre Locquet
Department of Physics and Astronomy, Katholieke Universiteit Leuven, Celestijnenlaan 200D, B-3001, Leuven, Belgium

17:00 **Self-Supported Electroreflective Devices in the Mid Infrared using PEDOT, PProDOT-Me2 or their blend** — L VIII 31
Layla Beouch, Nela Roy, Pierre-Henri Aubert, Frédéric Vidal, Claude Chevrot
Laboratoire de Physicochimie des Polymères et Interfaces (LPPI), Université de Cergy-Pontoise 5 mail Gay Lussac, Neuville sur Oise, 95031 Cergy-Pontoise Cedex, France

17:00 **CHROMOGENIC GAS SENSORS FOR MEAT FRESHNESS ASSESSMENT** — L VIII 32
A.M. Iordache, S.M. Iordache, C. Nichita, C. Ceaus, L. Popovici, I. Stamatin*
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Centre, 405 Atomistilor Str., P.O. Box. No 38, Bucharest-Magurele, Ilfov, Romania. *Corresponding author: istarom@3nanosae.org

17:00 **Study of structural and optical properties of W- and Mg-co-sputtered VO2 thin layers, for thermochromic applications** — L VIII 33
M.Panagopoulou1, E.Gagaoudakis3,4, N.Boukos2, E.Aperathitis3, G.Kiriakidis3,4, D.Tsoukalas1, Y.S.Raptis1, G. Iliadis5
1 School of Applied Mathematical and Physical Sciences, National Technical University of Athens, GR 157 80, Zografou Campus, Athens, Greece 2 IAMPPNM, Department of Material Science, National Center of Scientific Research 'DEMOKRITOS', GR 153 10, Agia Paraskevi,Athens, Greece 3 Institute of Electronic Structure & Laser (IESL), Foundation for Research and Technology –FORTH-Hellas, Heraklion GR 71110, Crete, Greece 4 Physics Department, University of Crete, GR 71003 Heraklion, Crete, Greece 5 Uniglass Lts,31st Vouliagmenis Avenue, GR 16675, Athens, Greece

17:00 **THERMOCHROMIC MATERIALS WITH A LOW METAL-INSULATOR TRANSITION TEMPERATURE DEPOSITED BY THE MAGNETRON SPUTTERING TECHNIQUE** — L VIII 34
T. Venot*, H. Boquet, C. Marcel
CEA le Ripault, BP16 37260 Monts, France

17:00 **Reactive Magnetron Sputtering Deposition of Nickel Oxide Thin Films for Electrochromic Devices** — L VIII 35
Vytautas Astasauskas, Aleksandras Iljinas, Vytautas Stankus, Brigita Abakeviciene
Department of Physics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania

17:00 **Electrospun fibers of tungsten oxide via different precursors and investigation of their chromogenic properties** — L VIII 36
Amin Tabatabaei Mohsenia, Esra O. Zayim*a, b, A.Sezai Sarac a, c
aNanoscience & Nanotechnology Program, Istanbul Technical University, Maslak, Istanbul, Turkey bIstanbul Technical University, Faculty of Science and Letters, Physics Department, Istanbul, Turkey cIstanbul Technical University, Faculty of Science and Letters, Chemistry Department, Istanbul, Turkey

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17:00 **Silica-based photonic crystals embedded in a chitosan/TEOS matrix: preparation, properties and applications** **L VIII 37**
C.C. Ryan1, A. Pavinatto2, O. N. de Oliveira Jr.2, M.E. Pemble1,3, M. Bardosova1*
1 Tyndall National Institute, University College Cork, Lee Maltings, Prospect Row, Cork, Ireland 2 Institute of Physics São Carlos, University of São Paulo, CP369, São Carlos, SP Brazil 3 Department of Chemistry, University College Cork, Cork, Ireland *corresponding author, e-mail: maria.bardosova@tyndall.ie Tel: +353 21 490 6010

17:00 **Irreversible thermochromic paints and shock-detection paints** **L VIII 38**
M. Gaudon*, V Blanco-Guttierrez*, A. Demourgues*
* CNRS, University of Bordeaux, ICMCB, 87 avenue du Dr. Albert Schweitzer, 33608 Pessac, France

28 May 2014

Thermochromism II : Harlan Byker, Bernard Dam

09:00 **Electric Field Assisted Chemical Vapour Deposition of Thermochromic Thin Films** **L-IX 1**
Michael E.A. Warwick, Russell Binions
Warwick Department of Chemistry, University College London, Christopher Ingold Laboratories, 20 Gordon Street, London, WC1H OAJ, United Kingdom. & UCL Energy Institute, Central House, 14 Upper Woburn Place, London, WC1H 0HY, UnitedKingdom. Binions School of Engineering and Materials Science, Queen Mary University of London, Mile End Road, London, E1 4NS, United Kingdom.

09:30 **LUMINESCENT MECHANOCHROMIC AND THERMOCHROMIC MATERIALS BASED ON COPPER IODIDE CLUSTERS** **L-IX 2**
Quentin Benito (a), Sandrine Perruchas (a), Alain Polian (b), Xavier F. Le Goff (c), Alain Garcia (d), Lucio Martinelli (a), Jean-Pierre Boilot (a) and Thierry Gacoin (a)
(a) Laboratoire de Physique de la Matière Condensée (PMC), CNRS – Ecole Polytechnique, route de Saclay, 91128 Palaiseau Cedex, France; (b) Institut de Minéralogie et de Physique des Milieux Condensés (IMPMC), CNRS –Université Pierre et Marie Curie, 4 place Jussieu, 75005 Paris Cedex, France; (c) Laboratoire Hétéroéléments et Coordination (DCPH), CNRS - Ecole Polytechnique, route de Saclay, 91128 Palaiseau Cedex, France; (d) Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB) - CNRS, 87 Avenue du Docteur A. Schweitzer, 33608 Pessac Cedex, France;

09:45 **Multifunctional thermochromic particles** **L-IX 3**
N. Vazquez-Mera [a,c], F. Novio [a,b], C. Roscini [a], J. Hernando [c], D. Ruiz-Molina* [a,b]
a. Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain b. Consejo Superior de Investigaciones Cientificas, ICN2 Building , Campus UAB ,08193 Bellaterra (Barcelona), Spain c Chemistry Department, Universitat Autònoma de Barcelona, 08193 Bellaterra (Barcelona), Spain

10:00 **Coffee Break**

Thermochromism III : Manuel Gaudon, Bernard Dam

10:30 **Sputter deposited thermochromic VO2 thin films on tin-doped indium oxide-coated glass: electrical, structural and optical properties** **L-X 1**
J. Montero, C. G. Granqvist, G. A. Niklasson
Department of Engineering Sciences, The Ångström Laboratory, Uppsala University

10:45 **Growth and crystallization of vanadium dioxide thin films: comparison between in situ and ex situ processes** **L-X 2**
A. Corvisier, F. Capon, J.F. Pierson
Institut Jean Lamour, Université de Lorraine, Nancy, France

11:00 **Spectroscopic studies of CocCu1-cWO4 solid solutions** **L-X 3**
A.Kalinko 1, A. Anspoks 2, J. Timoshenko 2, A. Kuzmin 2, P. Roy 1
1 Synchrotron SOLEIL, l'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France; 2 Institute of Solid State Physics, University of Latvia, Kengaraga street 8, LV-1063 Riga, Latvia

11:15 **Motheye Smart Windows** **L-X 4**
Alaric Taylor, Ivan Parkin, Clemens Tummeltshammer, Mark Brown, Rafael Sibilo, Ioannis Papakonstantinou
UCL, UCL, UCL, UCL, UCL, UCL

11:30 **Thermochromic properties of rare earth perovskites** **L-X 5**
Capon F., Boileau A., Haye E., Barrat S., Pierson J.F.
Institut Jean Lamour

12:00 **Lunch Break**

Gasochromism/Electrochromism : Angela Surca Vuk, Aline Rougier

13:30 **Switchable Mirror Sheet using New Gasochromic Method** **L XI 1**
K. Yoshimura, K. Tajima, Y. Yamada
National Institute of Advanced Industrial Science and Technology (AIST)

14:00 **Metal-Organic Frameworks as Novel Electrochromic Materials** **L XI 2**
Chung-Wei Kung1,2, Timothy Chiaan Wang1, Joseph E. Mondloch1, David Fairen-Jimenez3, Daniel M. Gardner1, Wojciech Bury1,4, Jordan Matthew Klingsporn1, Jonathan C. Barnes1, Richard Van Duyne1, J. Fraser Stoddart1, Michael R. Wasielewski1, Kuo-Chuan Ho2,5*, Omar K. Farha1*, and Joseph T. Hupp1*
1- Department of Chemistry, Northwestern University, Evanston, Illinois, United States; 2- Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan; 3- Department of Chemical Engineering and Biotechnology, University of Cambridge, United Kingdom; 4- Department of Chemistry, Warsaw University of Technology, Warsaw, Poland; 5- Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan

14:45 **Improve in optical properties of switchable mirrors based on Mg-Y alloy** **L XI 3**
Y. Yamada, M. Miura, K. Tajima, M. Okada, K. Yoshimura
National Institute of Advanced Industrial Science and Technology

15:00 **Electrochemical evaluation of vanadium pentoxide coatings grown by AACVD** **L XI 4**
D. Vernardou 1, D. Louloudakis 1 2, N. Katsarakis 1 3 4, E. Koudoumas 1 3, I. I. Kazadojev 5, S. O'Brien 5, I. M. Povey 5, M.E. Pemble 5
1 Center of Materials Technology and Photonics, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece; 2 Department of Physics, University of Crete, 710 03 Heraklion, Crete, Greece; 3 Electrical Engineering Department, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece; 4 Institute of Electronic Structure and Laser, Foundation for Research & Technology-Hellas, P.O. Box 1527, Vassilika Vouton, 711 10 Heraklion, Crete, Greece; 5 Tyndall National Institute, University College Cork, Lee Maltings, Prospect Row, Cork, Ireland.

15:15 **Synthesis and modeling of π-conjugated donor-acceptor copolymers with cyan, blue and green colors: Application to electrochromic devices** **L XI 5**
S. Fagour, D. Thirion, A. Vacher, X. Sallenave, J.F. Decarreau, P.H. Aubert, F. Vidal, C. Chevrot, G. Sini
Laboratoire de physicochimie des Polymères et Interfaces (LPPI), Université de Cergy-Pontoise, 5 Mail Gay Lussac, Neuville sur Oise, 95031 Cergy-Pontoise Cedex, France

15:30 **Coffee Break**

16:00 **PLENARY SESSION**

E-MRS 2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM M

Molecular materials - towards quantum properties (MOLMAT-Q)

Symposium Organizers:

Mario Ruben, Karlsruhe Institute of Technology, Karlsruhe, Germany

Azzedine Bousseksou, CNRS, Laboratoire de Chimie de Coordination, Toulouse, France

Guillem Aromi, Universitat de Barcelona, Spain

Published in Beilstein Journal of Nanotechnology

26 May 2014

09:00 **Introduction and opening remarks (Mario Ruben)**

Quantum properties of integrated Carbon based nanomaterials : Mario Ruben

09:15 **Molecular nanomagnets on graphene: a path towards hybrid molecular spintronics divices.** **M.I. 1**
M. Affronte, A. Candini, V. Corradini, V. Bellini.
CNR Institut Nano S3 Modena and University of Modena

09:45 **Graphene oxide coupled with gold nanoparticles for localized surface plasmon resonance based gas sensor** **M.I. 2**
M. Cittadini 1, M. Bersani 1, F. Perrozzi 2, L. Ottaviano 2 3, W. Wlodarski 4, A. Martucci 1
1 Industrial Engineering Department, University of Padova, Padova, 35131, Italy; 2 Dipartimento di Scienze Fisiche e Chimiche, Universita` dell'Aquila Via Vetoio 10, 67100 L'Aquila, Italy; 3 CNR-SPIN Uos L'Aquila, Via Vetoio 10, 67100 L'Aquila, Italy; 4 School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia.

10:00 **Janus Tectons: a Versatile Platform for the Non -Covalent Functionalization of sp2 Carbon Interfaces by Surface-Confined Self-Assembly** **M.I. 3**
P. Du, D. Kreher, F. Mathevet, F. Charra, T. Pick, B. Helms, A.-J. Attias
Université Pierre et Marie Curie, Paris, France; CEA Saclay, France; LBNL, Berkeley, USA

10:15 **Tailoring Metal-organic frameworks for adsorption applications** **M.I. 4**
Danny E. P. Vanpoucke, Toon Verstraelen, Mathias Vandichel, An Ghysels, Kurt Lejaeghere, Veronique Van Speybroek
Center for Molecular Modeling, Ghent University, Technologiepark 903, Zwijnaarde 9053, Belgium

10:30 **Morning Break**

Opto-electronic molecular materials : Nuria Crivillers

11:00 **Lasing in Organic Microcavities** **M.II. 1**
R. Brueckner, M. Sudzius, A.A. Zakhidov, A. Mischok, V. Lyssenko, R. Scholz, H. Froeb, and K. Leo*
Institut für Angewandte Photophysik, Technische Universität Dresden, 01062 Dresden, Germany *:also: King Abdulllah University of Science and Technology, Saudi Arabia

11:30 **FRET-assisted deep-blue electroluminescence from planar, intercalated oligofluorene side-chains in a new polymer/layered silicate hybrid** **M.II. 2**
Umberto Giovanella(1), Giuseppe Leone(1), Francesco Galeotti(1), Fabio Bertini(1), Sajjad Hoseinkhani(1), William Porzio(1), Giovanni Ricci(1), Wojciech Mróz(1), Francesco Meinardi(2), Chiara Botta(1)
(1) CNR, Istituto per lo Studio delle Macromolecole (ISMAC), via E. Bassini 15, 20133 Milano, Italy (2) Dipartimento di Scienze dei Materiali, Università di Milano-Bicocca, via Cozzi 55, 20125 Milano, Italy

11:45 **Interfacial effects on electroluminescent properties in metal-oxide-based quantum dot light emitting device(QD-LED)** **M.II. 3**
Cheong Shin, Won-Kook Choi and Jeon-Kook Lee
Interface Control Research Center, Korea Institute of Science and Technology, Seoul 136-791, Korea

12:00 **Hybrid Materials for Molecular Spintronics: Fabrication of spin-OLEDs** **M.II. 4**
E. Coronado, J. P. Prieto-Ruiz, H. Prima
Instituto de Ciencia Molecular (ICMol). Universidad de Valencia (Spain)

12:30 **Lunch Break**

Molecular Functions : Jose Sanchez Costa

14:00 **Chiral molecular magnetic nanowires** **M.III. 1**
R. Sessoli,a M.-E. Boulona, M. Manninia, L. Pogginia, A. Caneschia, A. Rogalev b, F. Wilhelm b, A. Vindigni,a M. Scarrozza,d P. Barone,d S. Picozzi,d
a Dip.to di Chimica 'Ugo Schiff', Università degli Studi di Firenze & INSTM RU, 50019 Sesto Fiorentino, Italy. b European Synchrotron Radiation Facility, 38000 Grenoble, France c Laboratorium für Festkörperphysik, ETH Zürich, CH-8093 Zürich, Switzerland d Consiglio Nazionale delle Ricerche CNR-SPIN, 67100 L'Aquila, Italy

14:30 **Multilayer C60-Picene heterojunction on Ag(111): a way to obtain continuous tuning of C60 charge state** **M.III. 2**
Marco Caputo, Giovanni Di Santo, Mirko Panighel, Vajiheh Alijani Zamani, Luca Petaccia, Claudia Struzzi, Marcello Coreno, Monica De Simone, Guido Fratesi, Andrea Goldoni
Elettra - Sincrotrone Trieste, s.s. 14 km 164.5 in Area Science Park, 34149 Trieste, Italy; INSTM - Elettra, Lab. Micro & Nano-Carbon, s.s. 14 km 164.5 in Area Science Park, 34149 Trieste, Italy; Department of Physics, Trieste University, Via Valerio 2, 34127 Trieste, Italy; CNR-IMIP, Area della Ricerca di Roma 1, Monterotondo Scalo, Italy; ETSF, CNISM, and Dipartimento di Scienza dei Materiali, Milano-Bicocca Univeristy, via Cozzi 55, 20125 Milano, Italy

14:45 **Bottom-up Nanopatterning of Bistable Compounds.** **M.III. 3**
Anne Bleuzen, Virgile Trannoy, Giulia Fornasieri, Sophie Lepoutre, David Grosso, Marco Faustini
A. Bleuzen, V. Trannoy, G. Fornasieri, ICMMO-UMR 8182, Equipe de Chimie Inorganique, Université Paris-Sud, 91405 Orsay Cedex (France) ; S. Lepoutre, D. Grosso, M. Faustini, LCMC Paris, Université Pierre et Marie Curie-Paris 6 and CNRS, Collège de France, 11 place Berthelot 75231 Paris (France)

15:00 **Exploring physical phenomena in 2D materials with nanoscale resolution via scanning probe microscopy** **M.III. 4**
Oleg V. Kolosov, Peter D. Tovee, Manuel Pumarol, Nicholas D. Kay, Benjamin J. Robinson
Physics Department, Lancaster University, Lancaster, LA1 4YB, UK www.nano-science.com

15:15 **Deposition and Characterization of a new SMM building block: Cu3-triplesalen on Au(111)** **M.III. 5**
Judith Niedenführ, Bastian Feldscher, Jan-Philipp Broschinski,Thorsten Glaser, Andrei Postnikov, and Daniel Wegner
Pysikalisches Institut, Westfälische Wilhelms-Universität, Münster, Germany ; Fakultät für Chemie, Universität Bielefeld, Bielefeld, Germany ; Laboratoire de Chimie et Physique, Université de Lorraine, Metz, France

15:30 **Multifunctional coordination complexes and frameworks @ the femtoliter scale** **M.III. 6**
E. Bellido,a P. González-Monje,a,b M. Guardingo, a,b F. Novio a,b and D. Ruiz-Molina a,b*
a Consejo Superior de Investigaciones Cientificas, ICN2 Building , Campus UAB ,08193 Bellaterra (Barcelona), Spain; b Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain

15:45 **High Temperature Antiferromagnetism in Phthalocyanine Thin Films and Nanostructures** **M.III. 7**
Michele Serri, Wei Wu, Luke R. Fleet, Nicholas M. Harrison, Cyrus F. Hirjibehedin, Christopher W. M. Kay, Andrew J. Fisher, Gabriel Aeppli, Sandrine Heutz
London Centre for Nanotechnology, Imperial College London and University College London

16:00 **Switchable Grid-Type Molecules** **M.III. 8**
Franc Meyer, Benjamin Schneider, Markus Steinert, Serhiy Demeshko, Sebastian Dechert
Institute of Inorganic Chemistry, Georg-August-University, Tammannstr. 4, D-37077 Göttingen.

Poster Session : Mario Ruben

16:30 **Hybrid 2D Superconductor made of Monatomic Indium Layer and Organic Molecules** **M.PI. 1**
Takashi Uchihashi
National Institute for Materials Science

16:30 **Self-assembled interconnected molecular rings' network: computational study and application to CNT reinforced composites** **M.PI. 2**
Sergey V. Pyrlin[1]; Nicholas D.M. Hine [2]; Marta M.D. Ramos [1]; Martha V. Escárcega-Bobadilla [3,4], Gustavo A. Zelada-Guillén [4]
1. Group of Computational and Theoretical Physics, Center of Physics and Department of Physics, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal; 2. Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, United Kingdom; 3. Institute of Chemical Research of Catalonia (ICIQ), Av. Països Catalans 16, 43007 - Tarragona, Spain; 4. Polymaterials AG. Innovapark 20, 87600 Kaufbeuren, Germany.

16:30 **Single Ion Magnet Behaviour upon Solubilization in Dysprosium-Based Complexes** **M.PI. 3**
F. Pointillart, B. Le Guennic, O. Cador, S. Golhen, L. Ouahab
Universite de Rennes 1, UMR 6226 CNRS-UR1 Institut des Sciences Chimiques de Rennes, 35042, Rennes, France

16:30 **Tuning the electronic structure of metal-organic complexes at the molecule-substrate interface** **M.PI. 4**
Pascal R. Ewen, Jan Sanning, Nikos Doltsinis, Cristian A. Strassert, and Daniel Wegner
Physikalisches Institut and Center for Nanotechnology (CeNTech), Westfälische Wilhelms-Universität Münster, Germany, Institut für Theoretische Physik, Westfälische Wilhelms-Universität Münster

16:30 **Single Ion Magnet Behavior in the Series of Lanthanide Double-Decker Complexes with Tetraazaporphyrins** **M.PI. 5**
J. R. Galan-Mascaros, N. Giménez-Agulló, C. Sáenz de Pipaón, P. Ballester
Institute of Chemical Research of Catalonia (ICIQ); Catalan Institution for Research and Advanced Studies (ICREA)

16:30 **High functionalized polyhedral oligomeric silsesquioxanes (POSS) as precursors for novel hybrid materials** **M.PI. 6**
Mateusz Janeta, Łukasz John*, Sławomir Szafert
University of Wrocław, Faculty of Chemistry, Joliot-Curie 14, Wrocław 50-383, Poland mateusz.janeta@chem.uni.wroc.pl

16:30 **Bottom-up Nanopatterning of oxides or alloys.** **M.PI. 7**
Vigile Trannoy,a Giulia Fornasieri,a Marco Faustini,b David Grosso,b Anne Bleuzen.a
a Institut de Chimie Moleculaire et des Materiaux d'Orsay-UMR 8182, Equipe de Chimie Inorganique, Universite Paris-Sud 11, 91405 Orsay Cedex (France) b Laboratoire de Chimie de la Matiere Condensee de Paris, Universite Pierre et Marie Curie-Paris 6 and CNRS, College de France, 11 place Berthelot 75231 Paris (France)

16:30 **Experimental and Theoretical Investigation of the Intermolecular -interaction between HTPB-MDI with the Ingredients TNT and RDX in Composition B** **M.PI. 8**
Qing Ma1,2, Huarong Li1,2, Baohui Zheng1, Wen Qian1, Guan Luo1, Yuanjie Shu3*
1Laboratory of Energetic Materials, Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang 621900, People's Republic of China 2 School of Chemical Engineering, Nanjing University of Science and Technology, Xiaolingwei 200, Nanjing, Jiangsu, China 3 College of Chemistry & Materials Science, Northwest University, Xi'an, 710069, China

16:30 **Spin crossover effects from solution-processable polymers** **M.PI. 9**
Gianluca Bovo1,2, Irene Braeunlich3, Walter R. Caseri3, Natalie Stingelin2,4, Thomas D. Anthopoulos1,2, Donal D. C. Bradley1,2, Karl G. Sandeman1, Paul N. Stavrinou1,2.
1 Department of Physics, Imperial College London, London, United Kingdom; 2 Centre for Plastic Electronics, Imperial College London, London, United Kingdom; 3 Department of Materials, ETH Zurich, Zurich, Switzerland; 4 Department of Materials, Imperial College London, London, United Kingdom.

16:30 **Invoking Intrinsic Metallicity in Single Layer Planar Honeycomb Lattices of Group IV Elements/ Group III-V Binary Compounds** **M.PI. 10**
Dipayan Sen†, Rajarshi Roy†, Nilesh Mazumder†, Uttam Kumar Ghorai‡ and Kalyan Kumar Chattopadhyay†‡
†Thin Film and NanoScience Laboratory, Department of Physics, Jadavpur University, Kolkata 700032, India; ‡School of Materials Science and Nanotechnology, Jadavpur University, Kolkata 700032, India

16:30 **Structure and electronic properties of PTCDI thin film on Au(111)** **M.PI. 11**
Hieulle Jeremy and Silly Fabien*
CEA/DSM/IRAMIS/SPEC/HyMN, * fabien.silly@cea.fr

16:30 **Effect of the irradiation parameters on silver wire networks formed under UV light exposition** **M.PI. 12**
M. Kulmas (1), O. Feddersen-Clausen (2), M. Y. Bashouti (2), A. Mahmoud (2), S. Christiansen (1, 3)
1 - Max-Planck-Institut for the Science of Light, 91058 Erlangen, Germany; 2 - ModularFlow, 50939 Köln, Germany; 3 - Helmholtz-Center Berlin, 14109 Berlin, Germany

16:30 **Localized surface plasmon resonance tunability of Al-Ag bimetalic nanostructure** **M.PI. 13**
Hao Qi, Qiu Teng, Paul K Chu
Department of Physics and Materials Science, City University of Hong Kong

16:30 **Differential Binding of Charged Thiol-Stabilized Gold Nanoparticles on Gold/Palladium and Platinum Surfaces** **M.PI. 14**
C. Kaulen (1), M. Homberger (1), N. Babajani (2), S. Karthäuser (2), U. Simon (1)
(1) Institute of Inorganic Chemistry (IAC) and JARA-FIT, RWTH Aachen University, Germany; (2) Peter Grünberg Institut (PGI-7) and JARA-FIT, Forschungszentrum Jülich GmbH, Germany

16:30 **Surface dependent Nanostructures of ultra-thin copper(II) phthalocyanine films and their thermal evolution** **M.PI. 15**
Hyo Jung Kim1, Ji Whan Kim2, Junhyuk Jang3, and Jang-Joo Kim3, Hyun Hwi Lee4,*
1Pusan National University, Korea;2Samsung Advanced Institute of Technology, Korea;3Seoul National University, Korea;4Pohang Accelerator Lab., Korea;

16:30 **In situ metallation of free base phthalocyanine covalently bonded to Si(100) and porous Si surfaces** **M.PI. 16**
F. Lupo1, A. Motta1, C. Tudisco 1, F. Bertani 2, A. Gulino1, E. Dalcanale 2, G. G. Condorelli1
1 Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR di Catania, v.le A. Doria 6, 95125 Catania, Italy; 2 Dipartimento di Chimica and INSTM UdR di Parma University of Parma Parco Area delle Scienze 17/A, 43124 Parma, (Italy)

16:30 **Ligand influence on morphology/crystallinity and properties of valence-tautomeric coordination polymer nanoparticles (VT-NPs)** **M.PI. 17**
Fernando Novio, Karolina Wnuk, Daniel Ruiz-Molina
ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain; CSIC - Consejo Superior de Investigaciones Cientificas, ICN2 Building, Campus UAB, 08193 Bellaterra (Barcelona), Spain.

16:30 **Investigation of the magnetic exchange coupling between MnTPPCl molecules and a ferromagnetic cobalt substrate by X-ray photo-emission electron microscopy** **M.PI. 18**
Jan Girovsky1, Michele Buzzi2, Christian Wäckerlin1, Dorota Siewert3, Jan Nowakowski1, Peter M. Oppeneer4, Frithjof Nolting2, Thomas A. Jung1, Nirmalya Ballav5, Armin Kleibert2
[1] Laboratory for Micro and Nanotechnology, Paul Scherrer Institute, 5232 Villigen-PSI (Switzerland); [2] Swiss Light Source, Paul Scherrer Institute, 5232 Villigen-PSI (Switzerland); [3] Department of Physics, University of Basel, 4056 Basel (Switzerland); [4] Department of Physics and Astronomy, University of Uppsala, Box 516, S-751 20 Uppsala (Sweden); [5] Department of Chemistry, Indian Institute of Science Education and Research, Pune 411008 (India)

16:30 **Switching of the binding motif in terpyridyne assemblies as a pathway towards distinctly different porous on-surface architectures** **M.PI. 19**
T. Nijs, S. Fatayer, A. Shchyrba, S. Nowakowska, F. J. Malzner, Y. M. Klein, S. Vujovic T. Jung, C. E. Housecroft, E. C. Constable
Department of Physics, University of Basel: T. Nijs; S. Fatayer; A. Shchyrba; S. Nowakowska; T. Jung, Department of Chemistry, University of Basel: F. J. Malzner; Y. M. Klein; S. Vujovic; C. E. Housecroft; E. C. Constable

16:30 **Theoretical study of kinetics isomerization of polyacetylene with substituents of different strengths of donor and acceptor functional groups** **M.PI. 20**
Bitam Said 1, Abdelbaki Djebaili 2
1 Laboratory of Physical chemistry L.P.C - University of Média- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria

16:30 **A self-consistent first-principles approach to treat environment effects on the carrier mobility in organic materials** **M.PI. 21**
Pascal Friedrich, Tobias Neumann, Franz Symalla, Angela Poschlad, Denis Danilov, Ivan Kondov, Velimir Meded, and Wolfgang Wenzel
Pascal Friedrich, Tobias Neumann, Franz Symalla, Denis Danilov Velimir Meded, Wolfgang Wenzel: Institute for Nanotechnology, KIT; Angela Poschlad, Ivan Kondov, Steinbuch Center for Computing, KIT

16:30 **STUDY OF THE SURFACE MAGNETISM IN A DISORDERED BINARY ALLOY Fe1-xCox BY USING DENSITY FUNCTIONAL THEORY ON THE CRYSTAL VIRTUAL APPROACH** **M.PI. 22**
M. Solorza-Guzman1, F. L. Castillo-Alvarado2, A. Cruz-Torres2, E. Lopez-Chavez3
1Escuela Superior de Computo del IPN, Av. Juan de Dios Batiz s/n y Av. Miguel Othon de Mendizabal, Lindavista, 07738 Mexico D. F. MEXICO; Escuela Superior de Fisica y Matematicas, Instituto Politecnico Nacional, Edificio 9, 07738 Mexico D.F., MEXICO; 3Programa de Ingenieria Molecular y Nuevos Materiales, Universidad Autonoma de la Ciudad de Mexico Av. Fray Servando Teresa de Mier 99, Col. Centro, Del Cuauhtemoc, C.P 06060 Mexico, D.F., MEXICO.

16:30 **Original Properties fom non-centrosymmetry in Magnetic Molecular Materials** **M.PI. 23**
Michel Verdaguer a, Cyrille Train b, Emilio Pardo c and Brahim Dkhil d
a Institut Parisien de Chimie Moléculaire, Unité CNRS 7201, Université Pierre et Marie Curie, 4 Place Jussieu, 75252 Paris Cedex 05 ; b IUF, Laboratoire National des Champs Magnétiques Intenses, CNRS, UPR 3228, Grenoble et Université Joseph Fourier, Grenoble ; c Institute for Molecular Sciences, P.O.Box 22085, 46071 Valencia, Spain ; d Laboratoire Structures, Propriétés et Modélisation des Solides, UMR CNRS 8580, Ecole Centrale Paris, 92295 Châtenay-Malabry cedex

16:30 **Combination of spin-crossover complexes with magnetic clusters and ferrimagnetic networks** **M.PI. 24**
A. Abhervé, J. M. Clemente-Juan, M. Clemente-León, C. J. Gómez-García, M. López-Jordà, E. Coronado
Instituto de Ciencia Molecular (ICMol), Universidad de Valencia, C/ Catedrático José Beltrán 2, 46980 Paterna, Spain

16:30 **Synthesis and characterization of silver telluride nanocrystals** **M.PI. 25**
Srikanth Chakaravarthy 1,2, Alain Bulou 2, Mauricio Ortega Lopez 3, Jaime Santoyo Salazar 4
1 Programa de Doctorado en Nanociencias y Nanotecnología, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México 2 l'Institut des Molécules et Matériaux du Mans (IMMM), UMR CNRS 6283, Université du Maine, 72085 Le Mans Cedex 9 France 3 Sección de Electronica y Estado Solido, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México 4 Departmento de Fisica, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México

16:30 **Synthesis and characterization of lead telluride nanocrystals** **M.PI. 26**
Srikanth Chakaravarthy 1,2, Alain Bulou 2, Mauricio Ortega Lopez 3, Jaime Santoyo Salazar 4, Marie-Pierre Crosnier Lopez 2
1 Programa de Doctorado en Nanociencias y Nanotecnología, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México 2 l'Institut des Molécules et Matériaux du Mans (IMMM), UMR CNRS 6283, Université du Maine, 72085 Le Mans Cedex 9 France 3 Sección de Electronica y Estado Solido, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México 4 Departmento de Fisica, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México

16:30 **Green synthesis and characterization of silver telluride nanocrystals** **M.PI. 27**
Srikanth Chakaravarthy 1,2, Alain Bulou 2, Mauricio Ortega Lopez 3, Jaime Santoyo Salazar 4
1 Programa de Doctorado en Nanociencias y Nanotecnología, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México 2 l'Institut des Molécules et Matériaux du Mans (IMMM), UMR CNRS 6283, Université du Maine, 72085 Le Mans Cedex 9 France 3 Sección de Electronica y Estado Solido, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México 4 Departmento de Fisica, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México

16:30 **Metal phthalocyanine complexes for molecular quantum spintronics** **M.PI. 28**
Svetlana Klyatskayaa, M. Rubena, b, M. Urdampilletac, R. Vincentc, M. Ganzhornc, W. Wernsdorfer,c
aInstitute of Nanotechnology, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany bIPCMS-CNRS UMR 7504, Université de Strasbourg, 23 Rue du Loess, 67034 Strasbourg, France cInstitut Néel, CNRS et Université Joseph Fourier, BP 166, F-38042 Grenoble Cedex 9, France

16:30 **Unprecedented Spin Transition Complexes of Iron** **M.PI. 29**
Bernhard Schäfer, A., Ivan Šalitroš, A., Mario Ruben, A. B.
A. Institut für Nanotechnologie, Karlsruher Institut für Technologie, Postfach 3640, 76021 Karlsruhe, Germany B. Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), Université de Strasbourg, France

16:30 **Characterisation of Terbium(III) Bis(phthalocyanine)/Cobalt Heterostructures by Ellipsometry and Magneto-optical Kerr Effect Spectroscopy** **M.PI. 30**
Peter Robaschik 1, Michael Fronk1, Svetlana Klyatskay 2, Mario Ruben 2,3, Dietrich R.T. Zahn1, Georgeta Salvan 1
1 TU Chemnitz, 09126 Chemnitz, Germany 2 KIT, 76344 Eggenstein-Leopoldshafen, Germany 3 ICPMS, 67034 Strasbourg, France

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Spin-effect materials : Frank Schramm

08:30 **Quantum transport through individual magnetic molecules** **M.IV. 1**
Herre van der Zant
Kavli Institute of Nanoscience, Delft University of Technology, Delft, The Netherlands

09:00 **Chemically programmable 2D Electron Spin Arrays** **M.IV. 2**
Christian Wäckerlin1, Jan Nowakowski1, Shi-Xia Liu2, Michael Jaggi2, Jan Girovsky1, Dorota Siewert1, Aneliia Shchyrba3, Tatjana Hählen1, Armin Kleibert4, Peter M. Oppeneer5, Frithjof Nolting4, Silvio Decurtins2, Thomas A. Jung1, Nirmalya Ballav6
[1] Laboratory for Micro and Nanotechnology, Paul Scherrer Institute, 5232 Villigen-PSI, Switzerland; [2] University of Bern, Department of Chemistry and Biochemistry, Bern, 3012, Switzerland; [3] University of Basel, Department of Physics, Basel, 4056, Switzerland; [4] Swiss Light Source, Paul Scherrer Institute, 5232 Villigen-PSI, Switzerland; [5] Department of Physics and Astronomy, University of Uppsala, Box 516, S-751 20 Uppsala, Sweden; [6] Department of Chemistry, Indian Institute of Science Education and Research, Pune 411008, India;

09:15 **Spin-crossover and Massive Anisotropy Switching of 5d Transition Metal Atoms on Graphene Nanoflakes** **M.IV. 3**
Igor Beljakov, Velimir Meded, Franz Symalla, Karin Fink, Sam Shallcross, Mario Ruben and Wolfgang Wenzel
Igor Beljakov, Institute of Nanotechnology (INT), KIT, Karlsruhe, Germany; Velimir Meded, Institute of Nanotechnology (INT), KIT, Karlsruhe, Germany; Franz Symalla, Institute of Nanotechnology (INT), KIT, Karlsruhe, Germany; Karin Fink, Institute of Nanotechnology (INT), KIT, Karlsruhe, Germany; Sam Shallcross, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Mario Ruben, Institute of Nanotechnology (INT), KIT, Karlsruhe, Germany; Wolfgang Wenzel, Institute of Nanotechnology (INT), KIT, Karlsruhe, Germany

09:30 **Spin current physics and materials** **M.IV 4**
E. Saitoh (1)-(3)
(1) WPI-AIMR, Tohoku University, Sendai 980-8577, Japan; (2) Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan; (3)ASRC, Japan Atomic Energy Agency, Tokai 319-1195, Japan

10:00 **Morning Break**

Charge transport in devices : Bernhard Schäfer

10:30 **Room Temperature Spin Transport in Molecular Devices** **M.V. 1**
Luis E. Hueso, Marco Gobbi, Xiangnan Sun, Amilcar Bedoya-Pinto, Felix Casanova
CIC nanoGUNE; IKERBASQUE Basque Foundation for Science

11:00 **Molecular quantum dots in Si-based tunneling devices: Fundamentals, multi-level tunneling and optical function** **M.V. 2**
Yutaka Wakayama, Ryoma Hayakawa, Toyohiro Chikyow
International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS)

11:15 **Redox-coated nanoelectrode array: a coupled electrochemical and molecular electronics study** **M.V. 3**
Jorge Trasobares, Ragavendran Sivakumarasamy, Claire Whal, Alexis Vlandas, Thierry Martin, J.-P. Nys, Dominique Vuillaume, Didier Théron, Nicolas Clément
Jorge Trasobares; Ragavendran Sivakumarasamy; Claire Whal; Alexis Vlandas; J.-P. Nys; Dominique Vuillaume; Didier Théron; Nicolas Clément, Institut d'électronique de microélectronique et de nanotechnologie, CNRS, Villeneuve d'Ascq (France). Thierry Martin, Centre de Physique Théorique, CNRS, Marseille (France).

11:30 **Molecular spintronics: new opportunities with beyond conventional materials** **M.V. 4**
Pierre Seneor, Marta Galbiati, Marie-Blandine Martin, Sophie Delprat, Bruno Dlubak, Sergio Tatay, Clément Barraud, Eric Jacquet, Cyrile Deranlot, K. Bouzehouane, A. Anane, Albert Fert, Richard Mattana and Frédéric Petroff
Unité Mixte de Physique CNRS/Thales & Université de Paris Sud 91767 Palaiseau, France

12:00 **Lunch Break**

Spintronics : Velimir Meded

13:30 **Antiferromagnetic Topological Insulator and Spintronics** **M.VI. 1**
Xiao HU
International Center for Material Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS), Japan

14:00 **Controlled bistability in a molecular non-porous crystalline material as robust chemo-sensor at room temperature** **M.VI. 2**
Jose Sanchez Costaa,d Santiago Rodriguez Jimeneza, Gavin A. Craiga, Olivier Roubeaub, Christine Beaversc, Simon J. Teatc, Azzedine Bousseksou,d and Guillem Aromíaa
aDepartament de Química Inorgànica, Universitat de Barcelona, Diagonal 647, 08028 Barcelona, Spain. bInstituto de Ciencia de Materiales de Aragón (ICMA), CSIC and Universidad de Zaragoza, Plaza San Francisco s/n, 50009, Zaragoza, Spain. cAdvanced Light Source, Berkeley Laboratory, 1 Cyclotron Road, Berkeley, CA 94720, USA dLaboratoire de la Chimie de Coordination. 205, route de Narbonne, 31077 Toulouse Cedex 4, France

14:15 **Potential for spin-based information processing in a thin-film molecular semiconductor** **M.VI. 3**
Marc Warner, Salahud Din, Igor S. Tupitsyn, Gavin W. Morley, A. Marshall Stoneham, Jules A. Gardener, Zhenlin Wu, Andrew J. Fisher, Sandrine Heutz, Christopher W. M. Kay, Gabriel Aeppli
Harvard University, Imperial College London, University of British Columbia, Warwick University, University College London, Harvard University, Imperial College London, University College London, Imperial College London, University College London, University College London.

14:30 **Tetragonal Mn-based metallic ferrimagnets for spintronics applications** **M.VI. 4**
S. Mizukami, A. Sugihara, Q. L. Ma, X. M. Zhang, T. Miyazaki
WPI-Advanced Institute for Materials Research, Tohoku University

15:00 **Afternoon Break**

Single Molecule Magnets : Svetlana Klyatskaya

15:30 **Reading Quantum States of Individual Single-Molecule Magnets** **M.VII. 1**
Wolfgang Wernsdorfer
Institut Neel, CNRS, BP 166, 38042 Grenoble, France

16:00 **FePc and FeP on Co(001):adsorption structures, magnetic coupling and spin manipulation** **M.VII. 2**
Barbara Brena,1 Heike C. Herper,1 Sumanta Bhandary,1 David Klar, 2 Heiko Wende,2 Olle Eriksson,1 Biplab Sanyal 1
1: Department of Physics and Astronomy, Uppsala University, Box 516, 751 20 Uppsala, Sweden 2: Faculty of Physics and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Lotharstrasse 1, D-47048 Duisburg, Germany

16:15 **Chemisorption of Exchange-Coupled [Ni2dppba)]+ Complexes on Gold Using Ambidentate 4-(Diphenylphosphino)benzoate Co-Ligands** **M.VII. 3**
M. Golecki,a J. Lach,a A. Jeremies,a F. Lungwitz,b M. Fronk,b P.Robaschikb G. Salvan,b D. R. T. Zahn,b J. Park,c,d Y. Krupskaya,d V. Kataev,d R. Klingeler,c B. Büchner,d B. Mahns,d M. Knupfer,d P. Siles,d O. G. Schmidt,d A. Reis,e W. R. Thiel,e D. Breite,f B. Abel,f and B. Kersting,a,*
a) Universität Leipzig, D-04103 Leipzig, Germany, b) Technische Universität Chemnitz, D-09107 Chemnitz, Germany c) University of Heidelberg, D-69120 Heidelberg, Germany d) IFW Dresden, D-01171 Dresden, Germany e) TU Kaiserslautern, D-67663 Kaiserslautern, Germany f) Leibniz-Institut für Oberflächenmodifizierung e. V., D-04318 Leipzig, Germany

16:30 **Frontier of Quantum Molecular Spintronics Based on Multiple-Decker Phthalocyaninato Ln(III) Single-Molecule Magnets -Toward Green IT Devices-** **M.VII. 4**
Masahiro Yamashita
Tohoku University

Quantum theoretical approaches : Georgeta Salvan

17:00 **A novell pattern-based approach for nanomaterials atomic structure prediction** **M.VIII. 1**
A. Mysovsky(1,2), A. Bogdanov(1,2), N. Popov (1,2), V. Lazebnykh(1)
1)Irkutsk State Technical University, 83 Lermontov Street, 664074 Irkustk, Russia; 2)Institute of Geochemistry SB RAS, 1a Favorsky Street, 664033 Irkutsk, Russia;

17:15 **Ab Initio Investigation of Lanthanide-based Single Ion Magnets** **M.VIII. 2**
Boris Le Guennic, Julie Jung, Olivier Cador, Kevin Bernot, F. Pointillart,
Université de Rennes 1; Université de Rennes 1; Université de Rennes 1; INSA Rennes; Université de Rennes 1

17:30 **Graphene nano-ribbon quantum interference transistor** **M.VIII. 3**
Mahbub Alam, Paul L Voss
Georgia Institute of Technology, School of Electrical and Computer Engineering, Atlanta, Georgia 30324-0250, USA UMI 2958 Georgia Tech-CNRS, Georgia Tech Lorraine, 2-3 Rue Marconi, 57070 Metz, France; Georgia Institute of Technology, School of Electrical and Computer Engineering, Atlanta, Georgia 30324-0250, USA UMI 2958 Georgia Tech-CNRS, Georgia Tech Lorraine, 2-3 Rue Marconi, 57070 Metz, France

17:45 **Reversible Switching Phenomena in Molecular Crystals** **M.VIII. 4**
J. M. Skelton, R. Crespo-Otero, L. E. Hatcher, M. J. Bryant, P. R. Raithby, S. C. Parker and A. Walsh
Department of Chemistry, University of Bath, Claverton Down, Bath, BA2 7AY, UK

18:00 **Protected Gold Nanoparticles: Self-Assembly Study** **M.VIII. 5**
Karolina Z. Milowska, Jacek K. Stolarczyk,
1)Photonics and Optoelectronics Group, Ludwig-Maximilians-Universität München, Amalienstr. 54, 80799 Munich, Germany 2)Nanosystems Initiative Munich (NIM), Schellingstr. 4, 80799 Munich, Germany; 1)Photonics and Optoelectronics Group, Ludwig-Maximilians-Universität München, Amalienstr. 54, 80799 Munich, Germany 2)Nanosystems Initiative Munich (NIM), Schellingstr. 4, 80799 Munich, Germany

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Molecular Self-assembly : Mario Ruben

08:30 **Linked Rings Leading to Rotaxanes and Supermolecules** **M.IX. 1**
Richard E. P. Winpenny
School of Chemistry and Photon Science Institute, The University of Manchester

09:00 **Functional self-assembled monolayers for molecular memories** **M.IX. 2**
N. Crivillers,1,2 C. Munuera,1 M. Paradinas,1 M. Mas-Torrent,1,2 C. Simão,1,2 S. T. Bromley,3,4 C. Ocal,1 C. Rovira,1,2 J. Veciana1,2
1 Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la Universitat Autònoma de Barcelona, 08193 Bellaterra,Spain. 2 Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN) ICMAB-CSIC,Bellaterra,Spain. 3 Departament de Quiímica Física & Institut de Química Teòrica i Computacional (IQTCUB), Universitat de Barcelona,08028 Barcelona, Spain. 4 Institució Catalana de Recerca i Estudis Avançats (ICREA),08010 Barcelona, Spain

09:15 **Structure and photophysical properties of self-assembled porphyrin nano-objects** **M.IX. 3**
Danielle Laurencin, Yannick Guari, Matthieu Paillet, Sébastien Richeter
University Montpellier 2, Institut Charles Gerhardt, France; University Montpellier 2, Institut Charles Gerhardt, France; University Montpellier 2, Laboratoire Charles Coulomb, France; University Montpellier 2, Institut Charles Gerhardt, France.

09:30 **Monitoring conductance switching by light in Azobenzene derivative-Gold Nano-Particle Self-Assembled Networks** **M.IX. 4**
Yannick VIERO, Stéphane LENFANT, David GUERIN, Dominique VUILLAUME
Molecular Nanostructures & Devices Group, Institute for Electronics Microelectronics and Nanotechnology, CNRS & University of Lille, B.P. 60069, 59652, Villeneuve d'Ascq, France

09:45 **Closing remarks Symposium M - Poster Prizes (Mario Ruben)**

12:00 **LUNCH**

16:00 **PLENARY SESSION**

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM N

Converging technology for nanobio applications

Symposium Organizers:

Geneviève Pourroy, CNRS, Strasbourg, France

Carsten Weiss, Karlsruher Institut for Technology, Germany

Prasad Shastri, University of Freiburg, Germany

Witold Łojkowski, Instytut Wysokich CiśnieśPAN, Warszawa , Poland

Published in Beilstein Journal of Nanotechnology

26 May 2014

09:00 **Functionalised nanoparticles for biological imaging across the scales** **N.I 1**
Raphaël Lévy
Biosciences Building, Crown Street, University of Liverpool, Liverpool L69 7ZB, UK

09:30 **Bright and stable CdSe/CdS@SiO2 nanoparticles suitable for long term cell labeling** **N.I 2**
Daniel Wassmuth (1,2), Tangi Aubert (1,2), Stefaan J. Soenen (2,3), Kevin Braeckmans (2,3), Zeger Hens (1,2)
Physics and Chemistry of Nanostructures, Ghent University, Belgium (1); Center for Nano- and Biophotonics (NB-Photonics), Ghent University, Belgium (2); Laboratory of General Biochemistry and Physical Pharmacy, Ghent University, Belgium (3)

09:50 **Gold nanoparticle radiosensitization: what's new about mechanisms ?** **N.I 3**
Emilie Brun, Manon Gilles, Cécile Sicard-Roselli
Laboratoire de Chimie Physique, Université Paris-Sud, 91405 Orsay, France

10:10 **Coffee break**

10:30 **Nanoparticles Functionalised with Metal Complexes for Luminescence Imaging Applications** **N.I 4**
Zoe Pikramenou
School of Chemistry, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK

11:00 **Self-assembly of DNA-Cationic Polythiophenes for Hybridization Biosensors** **N.I 5**
J. Rubio-Magnieto,[1] A. Thomas,[1,2] S. Richeter,[1] A. Mehdi, Ph. Dubois,[3] R. Lazzaroni,[1] S. Clément,[2] and M. Surin[1]*
[1] Laboratory for Chemistry of Novel Materials, Center for Innovation in Materials and Polymers, University of Mons - UMONS, 20 Place du Parc, B-7000 Mons, Belgium. mathieu.surin@umons.ac.be [2] Institut Charles Gerhardt, Equipe Chimie Moléculaire et Organisation du Solide, Université de Montpellier 2 - CC1701, Place Eugène Bataillon, F-34095 Montpellier Cedex 05, France. [3] Laboratory for Polymeric and Composites Materials, Center for Innovation in Materials and Polymers, University of Mons - UMONS, 20 Place du Parc, B-7000 Mons, Belgium.

11:20 **Functional hybrid ordered nanomaterials for biomedical applications : elaboration from smart pH-responsive polymer micelles** **N.I 6**
E. Molina, J. Warnant, J. Reboul, G. Layrac, T. Cacciaguerra, M. In, C. J?r?me, P. Lacroix-Desmazes, N. Marcotte, C. G?rardin.
Institut Charles Gerhardt Montpellier, Laboratoire Charles Coulomb Montpellier, CERM Li?ge Belgique

11:40 **Dipl.-Chem.** **N.I 7**
Janine Broda, Annika Leifert, Yu Pan, Willhelm Jahnen-Dechent, Gerhard Müller-Newen, Ulrich Simon
Janine Broda; Annika Leifert; Ulrich Simon Institute of Inorganic Chemistry, RWTH Aachen University, Landoltweg 1, 52074 Aachen, Germany Yu Pan; Wilhelm Jahnen-Dechent Helmholtz Institute for Biomedical Engineering, Biointerface Laboratory, RWTH Aachen University, Pauwelsstr. 30, 52074 Aachen, Germany Gerhard Müller-Newen Institute of Biochemistry and Molecular Biology, University Hospital Aachen, RWTH Aachen University, Pauwelsstr. 30, 52074 Aachen, Germany

12:00 **Electrospinning of novel triaxial polymeric hollow nanofibers with controlled structural properties and surface functionalities** **N.I 8**
Burcu Saner Okan1, Jamal Zanjani2, Mehmet Yildiz2, Yusuf Menceloglu2
1Sabanci University Nanotechnology Research and Application Center, SUNUM, Tuzla, Istanbul 34956, Turkey; 2Faculty of Engineering and Natural Sciences, Sabanci University, Tuzla, Istanbul 34956, Turkey

12:20 **Lunch**

13:50 **Weakly luminescent upconverting nanocrystals that make exceptional single-molecule probes** **N.I 9**
Daniel J. Gargas, Emory M. Chan, Alexis D. Ostrowski, P. James Schuck, and Bruce E. Cohen
The Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA

14:20 **3D plasmonic nanoelectrodes for intracellular recording of large-scale neuronal networks** **N.I 10**
Michele Dipalo 1, Mario Malerba 1, Alessandro Simi 2, Hayder Amin 2, Alessandro Maccione 2, Luca Berdondini 2, Francesco De Angelis 1
1 Nanostructures Department. 2 Neuroscience and Brain Technologies Department. Istituto Italiano di Tecnologia, Genova, Italy

14:40 **Liposome-containing polymer coatings towards substrate-mediated drug delivery** **N.I 11**
Martin E. Lynge, Marina Fernandez Medina, Brigitte Stadler
Interdisciplinary Nanoscience Center, iNANO, Aarhus University, Gustav Wieds Vej 14, DK-8000 Aarhus C.

15:00 **Porous membrane design from nanoparticles by using the material-binding bispecific antibodies** **N.I 12**
Mitsuo Umetsu, Noriyoshi Manabe, Hikaru Nakazawa, Izumi Kumagai
Department of Biomolecular Engineering, Graduate School of Engineering, Tohoku University

15:20 **Coffee break**

15:50 **Toxicity evaluation of single layer of silver nanoparticles embedded in silica matrix to photosynthesis in Chlamydomonas reinhardtii** **N.I 13**
A. Pugliara1,2,3, K. Makasheva2,3, B. Despax2,3, M. Bayle1, R. Carles1, P. Benzo1, G. BenAssayag1, B. Pécassou1, M.-C. Sancho4, E. Navarro4, Y. Echegoyen5, I. Sanz6, F. Laborda6 and C. Bonafos1
1 Groupe Nanomat-CEMES (Centre d'Elaboration de Matériaux et d'Etudes Structurales)-CNRS, Université de Toulouse, 29 rue Jeanne Marvig, BP 94347,F-31055 Toulouse cedex 4, France; 2 Université de Toulouse; UPS, INPT; LAPLACE (LAboratoire PLAsma et Conversion d'Energie), 118 route de Narbonne, F-31062 Toulouse cedex 9, France; 3 CNRS; LAPLACE; F-31062 Toulouse, France; 4 Instituto Pirenaico de Ecología (CSIC) Avda. Montañana 1005, Zaragoza 50059, Spain; 5 I3A, Department of Analytical Chemistry, University of Zaragoza; C/ María de Luna 3, 50018, Zaragoza, Spain; 6 Group of Analytical Spectroscopy and Sensors (GEAS), Institute of Environmental Sciences (IUCA), University of Zaragoza, Pedro Cerbuna 12, Zaragoza 50009, Spain;

16:10 **Correlation of the mechanical properties of porous polymer coatings with the impact of the life processes of human cells** **N.I 14**
Roman Major, Franz Bruckert, Marek Sanak, Aldona Mzyk, Marcin Kot, Boguslaw Major
Institute of Metallurgy and Materials Science; Polish Academy of Sciences, 30-059 Cracow, Reymonta St.25, Cracow, Poland; Laboratoire des Matériaux et du Génie Physique, Grenoble Institute of Technology- Minatec, 3, Parvis Louis Néel, BP 257, 38016 Grenoble Cedex 1, France ; Department of Medicine, Jagiellonian University Medical College, 8 Skawinska Street, 31-066 Cracow, Poland Institute of Metallurgy and Materials Science; Polish Academy of Sciences, 30-059 Cracow, Reymonta St.25, Cracow, Poland; AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Al. Mickiewicza 30, 30-059 Cracow, Poland; Institute of Metallurgy and Materials Science; Polish Academy of Sciences, 30-059 Cracow, Reymonta St.25, Cracow, Poland;

16:30 **Bio-inspired Synthesis and Surface Modification of Metal Nanoparticles** **N.I 15**
Yuangang Zheng
Institute of Materials Research and Engineering, A*STAR 3 Research Link, Singapore 117602

16:50 **Non-toxic and stealth engineered-surface Metal-organic framework nanoparticles for drug delivery** **N.I 16**
E. Bellido,a T. Hidalgo,a M. V. Lozano,a M. Guillevic,a R. Simon-Vazquez,c J.M. Santander-Ortega,b C. Serre, A. Gonzalez-Fernandez,c M. J. Alonso,b P. Horcajada,a*
a. Institut Lavoisier, UMR CNRS 8180, Universit? de Versailles Saint-Quentin-en-Yvelines, 45 avenue des Etats-Unis, 78035 Versailles cedex, France. b Nanobiofar. Center for Molecular Medicine and Chronic Diseases (CIMUS), Universidad de Santiago de Compostela, Av. Barcelona s/n, Campus Vida, 15706 Santiago de Compostela, Spain. c Immunology, Biomedical Research Center (CINBIO), Universidad de Vigo, Campus Lagoas Marcosende, 36310 Vigo, Pontevedra. Spain.

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08:30 **Harnessing RNAi-based nanomedicines for precision medicine.** **N.II 1**
Dan Peer
Laboratory of NanoMedicine. Dept. of Cell Research and Immunology and Dept. of Materials Science and Engineering, Tel Aviv University

09:00 **Rapid nanoformulation and GMP preparation of antiretroviral drugs for oral HIV nanomedicines and human clinical dosing studies** **N.II 2**
Dr Marco Giardiello, Dr Tom O McDonald, Dr Philip Martin, Dr Niell Liptrott, Prof Andrew Owen, Prof Steve Rannard
Department of Chemistry, University of Liverpool, UK; Department of Molecular & Clinical Pharmacology, University of Liverpool, UK

09:20 **Simultaneous Photothermal and Photodynamic Therapy with a Single Nano-device** **N.II 3**
Eugenia Yeo, Dawn Neo, James Kah
Department of Biomedical Engineering, National University of Singapore, Singapore

09:40 **Shaping out the future impact of engineered nanoparticles on bio-nano interactions** **N.II 4**
Željka Krpetić, Marco Monopoli, Qi Cai, Jennifer Cookman, David Garry, Philip Kelly, Andre Perez Potti, Christoffer Aberg, Ann O'Connell, Kenneth A. Dawson
Centre for BioNano Interactions, School of Chemistry and Chemical Biology, University College Dublin, Belfield, Dublin, Ireland

10:00 **Coffee break**

10:30 **The effects of aggregation and protein corona on the cellular internalization of nanoparticles** **N.II 5**
N. Ould Moussa, L. Vitorazi, M. Safi, H. Conjeaud and J.-F. Berret
Mati?re et Syst?mes Complexes, UMR 7057 CNRS Universit? Denis Diderot Paris-VII, Batiment Condorcet, 10 Rue Alice Domon et L?onie Duquet, F-75205 Paris, France jean-francois.berret@univ-paris-diderot.fr

11:00 **High-resolution live-cell imaging of cascaded photoinduced drug delivery from lipid bilayer coated multifunctional mesoporous silica nanoparticles** **N.II 6**
Alexandra Schmidt, Stephan A. Mackowiak, Veronika Weiss, Martina Lichtnecker, Christian Argyo, Constantin von Schirnding, Kathrin Bader, C. Bräuchle* and T. Bein*
Department of Chemistry and Center for NanoScience (CeNS), Ludwig-Maximilians-University (LMU), Butenandtstr. 11 (E), 81377 Munich, Germany (email: alexandra.schmidt@cup.uni-muenchen.de)

11:20 **Oxygen Plasma Modified Nanoparticulate Scaffolds as Drug Nanocarriers for Cardiovascular Implants** **N.II 7**
V. Karagkiozaki1, A.M. Pappa1, P. Kavatzikidou1, S. Kassavetis1, D. G. Fatouros2, S. Logothetidis1
1. Nanomedicine Group, Lab for "Thin Films -Nanosystems & Nanometrology", Aristotle University of Thessaloniki, Greece 2. Department of Pharmaceutical Technology, School of Pharmacy, Aristotle University of Thessaloniki, GR-54124, Greece

11:40 **Light emitting silicon micro-particles as biocompatible and traceable drug delivery system** **N.II 8**
Nicola Daldosso (1), Ali Ghafarinazari (1), Paolo Cortelletti (2), Laura Marongiu (3), Marta Donini (3), Veronica Paterlini (1), Paolo Bettotti (2), Elena Froner (2), Stefano Dusi (3), Marina Scarpa (2)
1) Fluorescence Lab., Dep. of Computer Science, University of Verona, Verona (2) Laboratory of Nanoscience, Dep. of Physics, University of Trento, Trento (3) Division of General Pathology, Dep. of Pathology and Diagnostics, University of Verona, Verona

12:00 **Synthesis, Characterization, Cytocompatibility of Polysaccharide Functionalized Nanoparticles** **N.II 9**
Surya Lamichhane1, Neha Arya1, V Prasad. Shastri1,2
1Institute for Macromolecular Chemistry, University of Freiburg, 79104, Freiburg, Germany: 2BIOSS–Centre for Biological Signaling Studies, University of Freiburg, 79104, Freiburg, Germany

12:20 **Lunch**

13:50 **NANOCERIA FOR NANOMEDICINE** **N.II 10**
Victor Puntes
Catalan Institute of Nanoscience and Nanotechnology (ICN2) Edifici ICN2 08193 Bellaterra (Barcelona), Spain victor.puntes@icn.cat

14:20 **Nano/microstructured membranes for neuronal tailoring and peripheral nerve regeneration** **N.II 11**
Tonazzini I 1, Jacchetti E 1, Meucci S 1-2, Beltram F 1 and Cecchini M 1
1 NEST, Scuola Normale Superiore and Istituto Nanoscienze-CNR, Piazza San Silvestro 12, 56127 Pisa, Italy 2.Center for Nanotechnology Innovation@NEST, Istituto Italiano di Tecnologia, Piazza San Silvestro 12, 56127 Pisa, Italy

14:40 **Functionalized Graphene Oxide for theranostics applications** **N.II 12**
Cristina Satriano, Luisa D'Urso, Giuseppe Compagnini, Giuseppe Forte
University of Catania, Department of Chemistry

15:00 **Silicon Nanotweezers inside liquid for the real time characterization of DNA degradation under radiotherapy treatment** **N.II 13**
G.Perret, T.Lacornerie, M.Kumemura, N.Lafitte, H.Guillou, L.Jalabert, E.Lartigau, T.Fujii, F.Cleri, H.Fujita, D.Collard
LIMMS/CNRS-IIS, UMI2820, Japan; Centre Oscar Lambret, University of Lille 2, France; IEMN, UMR8520, CNRS, University of Lille 1, France; Institute of Industrial Science, The University of Tokyo, Japan

15:20 **Rapid Patterning of 1-D Collagenous Topography as an ECM Protein Fibril Platform** **N.II 14**
Yan Yan Shery Huang[1], Xia Li[1], Zhaoying Li[1], Niannan Xue[1], Cristina Bertulli[1], Amine Sadok[2]
[1] University of Cambridge; [2] Institute of Cancer Research London.

15:40 **Coffee break**

Poster session : Geneviève Pourroy

16:00 **Formation of biocompatible surface on titanium by ion implantation: combined XPS and DFT study** **NPI 1**
D.M. Korotin1,2, D.W. Bukhvalov3, A.I. Efremov1, E.Z.Kurmaev1, I.S. Zhidkov2, D.V. Gunderov4, R.Z. Valiev4, N.V. Gavrilov5 and S.O. Cholakh2
1Institute of Metal Physics, Russian Academy of Sciences-Ural Division, 620990 Yekaterinburg, Russia 2Ural Federal University, 19 Mira Str., 620002 Yekaterinburg, Russia; 3School of Computational Sciences, Korea Institute for Advanced Study (KIAS) Hoegiro 87, Dongdaemun-Gu, Seoul, 130-722, Korean Republic; 4Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa 450000, Russia; 5Institute of Electrophysics, Russian Academy of Sciences-Ural Division, 620016 Yekaterinburg, Russia

16:00 **QUALITY OF BUTTER, EVALUATION OF ADULTERATION. RAPID METHOD USING RAMAN AND PYCNOMETER TECHNIQUES.** **NPI 2**
Eduard Gatin1, 2, Catalin Luculescu3, Stefan Iordache4, Ruxandra Sfeatcu 2, Roxana R. Ilici2, Lidia Ciobanu5
1 University of Bucharest, Faculty of Physics, Materials Department, P.O. Box MG - 11, Magurele – Bucharest, Romania; 2 University of Medicine "Carol Davila", Faculty of Dentistry, Calea Plevnei 19, Sector 5, Bucharest, Romania; 3 INFLPR, National Institute for Laser, Plasma and Radiation Physics, P.O. Box MG- 36, Magurele – Bucharest, Romania; 4 University of Bucharest, 3Nano-SAE Research Centre, P.O. Box MG- 38, Magurele, Romania; 5 „St. Pantelimon" Hospital, Sos. Pantelimon Nr. 340 - 342, Sector 2, Bucharest, Romania.

16:00 **Nanodiamond-based drug carrier and imaging probe** **NPI 3**
Naoki Komatsu, Li Zhao, Tokuhiro Chano, Takahide Kimura
Shiga University of Medical Science

16:00 **Colloidal Gold for Non Thermal Photodynamic Cancer Therapy** **NPI 4**
S. Chadwick, M. Brust, M. Volk
Department of Chemistry, University of Liverpool, Liverpool, UK

16:00 **Semiconductor Quantum Dots in Optical Sensor for Screening Cadmium ions** **NPI 5**
N. Ben Brahim, N. Bel Haj Mohamed, M. Echabaane, M. Haouari, R. Ben Chaâbane and H. Ben Ouada
Laboratoire des Interfaces et Matériaux Avancés (LIMA)

16:00 **Diffraction gratings as optical filters in fluorescence based biosensors** **NPI 6**
Milan Kovačič, Janez Krč, Marko Topič
University of Ljubljana, Faculty of Electrical Engineering, Tržaška 25, 1000 Ljubljana

16:00 **In vitro targeting of amyloid fibrils with functionalized nanoparticles** **NPI 7**
P. Mowat1, M. Plissonneau2, N. Stransky-Heilkron3, E. Allémann3, X. Montet3, M. Dumoulin4, C. Louis5, F. Lux2, O. Tillement2, C. Marquette1, V. Forge1
1Laboratoire de Physico-Chimie des Matériaux Luminescents (LPCML), UMR 5620, Université Lyon 1, France ; 2Laboratoire de Chimie et Biologie des Métaux (CBM, AFFOND), UMR 5249, CEA Grenoble, France ; 3School of Pharmaceutical Sciences, University of Geneva, University of Lausanne, Geneva, Switzerland ; 4Centre d'ingénierie des protéines, Université de Liège, Belgique ; 5Nano-H SAS, Saint Quentin-Fallavier, France

16:00 **A Fluorescent Microbead Sensor for Detecting Nitric Oxide (NO)** **NPI 8**
Lan-Hee Yang, Eunhae Koo*
Advanced Materials Convergence Division, Korea Institute of Ceramic Engineering and Technology (KICET), Seoul 153-801, Korea

16:00 **Phenylboronic Acid-Modified Nanodiamond: Potential Antiviral Therapeutics** **NPI 9**
Manakamana Khanal,1 Thibaut Vausselin,2 Alexandre Barras,1 Mohammed Benazza,3 Rabah Boukherroub,1 Aloysius Siriwardena,3 Jean Dubuisson,2 Sabine Szunerits1
1 Institut de Recherche Interdisciplinaire (IRI, USR CNRS 3078), Université Lille 1, Parc de la Haute Borne, 50 Avenue de Halley, BP 70478, 59658 Villeneuve d'Ascq, France; 2Institut Pasteur de Lille, Center for Infection & Immunity of Lille (CIIL), F-59019 Lille, France; Inserm U1019, F-59019 Lille, France; CNRS UMR8204, F-59021 Lille, France; Université de Lille Nord de France, F-59000 Lille, France; 3Laboratoire des Glucides (FRE 3517 CNRS), Université de Picardie Jules Vernes, 33 rue saint Leu, 80039 Amiens, France.

16:00 **Photoactive nanofibers with surface modification** **NPI 10**
Petr Henke (1), Pavel Kubát (2), Jiří Mosinger (1,3)
(1) Faculty of Science, Charles University in Prague, Hlavova 2030, 128 43 Prague 2, Czech Republic; (2) J. Heyrovský Institute of Physical Chemistry, v.v.i., Academy of Sciences of the Czech Republic, Dolejskova 3, 18223 Prague 8, Czech Republic; (3) Institute of Inorganic Chemistry, v.v.i., Academy of Sciences of the Czech Republic, 250 68 Rez, Czech Republic

16:00 **THE INCORPORATION OF URSOLIC ACID IN THE LIPID BILAYER DOES NOT PREVENT THE FORMATION OF HEXAGONAL PHASE IN pH-SENSITIVE LIPOSOMES** **NPI 11**
LOPES, S.C.A.1, NOVAIS, M.V.M.1, FERREIRA, L.A.M1, BRAGA, F.C.1, PANIAGO, R.M.2, MALACHIAS, A.2, OLIVEIRA, M.C.
1Faculty of Pharmacy, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil. 2Institute of Exact Sciences, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

16:00 **porous silicon microarray platform for cell-based biosensing** **NPI 12**
Ying Zhu, Alexander H. Soeriyadi, Peter J. Reece, Katharina Gaus, J. Justin Gooding
School of Chemistry and the Australian Centre for NanoMedicine, University of New South Wales (UNSW), Sydney 2052, Australia, School of Chemistry and the Australian Centre for NanoMedicine, UNSW, Sydney 2052, Australia, School of Physics, UNSW, Sydney 2052, Australia, Centre for Vascular Research, UNSW, Sydney 2052, Australia, School of Chemistry and the Australian Centre for Nano-Medicine, UNSW, Sydney 2052, Australia

16:00 **Laminin-1 coating of nanostructured silica surfaces** **NPI 13**
N.Giamblanco, G.M.L.Messina, G.Marletta
Laboratory for Molecular Surfaces and Nanotechnology (LAMSUN), Dipartimento di Scienze Chimiche, Università di Catania and CSGI, Viale A. Doria 6, 95125 Catania, Italy

16:00 **CHITOSAN NANOPARTICLES, BIOACTIVE VECTOR FOR SILYMARIN COMPLEX DELIVERING** **NPI 14**
Cornelia Nichita1,2, Georgeta Neagu2, Adriana Balan1 and Ioan Stamatin1
1University of Bucharest, Faculty of Physics, 3Nano-SAE Research Centre PO Box MG-38, Bucharest-Magurele, Romania 2 National Institute for Chemical-Pharmaceutical Research and Development, 112 VitanStreet, 031299, Bucharest, Romania, e-mail: cornelianichita@yahoo.com

16:00 **INITIAL STUDIES TO EVALUATE THE INTERACTION BETWEEN IRON OXIDE NANOPARTICLES AND CAENORHABDITIS ELEGANS** **NPI 15**
Laura González1, Elisa Carenza1, Anna Roig1, Anna Laromaine1*
Group of Nanoparticles and Nanocomposites. Institut de Ciència de Materials de Barcelona, ICMAB (CSIC). Campus UAB, 08193 Bellaterra, Spain.

16:00 **Optical properties of chiral gold nanoparticle assemblies** **NPI 16**
Pascal K. Harimech,a Simon R. Gerrard,b Afaf H. Al-Sagheer,de Tom Brown,d and Antonios G. Kanaras,ac*
a Physics and Astronomy, b Chemistry, c Life Sciences, University of Southampton, Southampton, UK, SO171BJ; d Department of Chemistry,University of Oxford, 12 Mansfield Rd, Oxford,UK, OX13TA; e Chemistry Branch, Department of Science and Mathematics, Suez University, Suez, 43721, Egypt

16:00 **Photochemical Reactions on Gold Nanoparticles Capped by (Photoreactive) Peptides** **NPI 17**
Elena Colangelo, Martin Volk, Jonathan Hobley and Raphaël Lévy
Institute of Integrative Biology, University of Liverpool, UK Department of Chemistry, University of Liverpool, UK Institute of Materials Research and Engineering A*STAR, Singapore Institute of Integrative Biology, University of Liverpool, UK

16:00 **BIOHYBRIDS GRAPHENE/ GRAPHENE OXIDE- FLAVONOIDIC COMPOUNDS. ANTIOXIDANT ACTIVITY EVALUATION** **NPI 18**
Cornelia Nichita1,2, Adriana Balan1 and Ioan Stamatin1
1University of Bucharest, Faculty of Physics, 3Nano-SAE Research Centre PO Box MG-38, Bucharest-Magurele, Romania 2 National Institute for Chemical-Pharmaceutical Research and Development, 112 VitanStreet, 031299, Bucharest, Romania, e-mail: cornelianichita@yahoo.com

16:00 **Nanostructured doped hydroxyapatite coatings for biomedical applications** **NPI 19**
J.V. Rau1, I. Cacciotti2, A. De Bonis3, A. Santagata4, R. Teghil3
1) Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche, Via del Fosso del Cavaliere 100- 00133 Rome, Italy 2) Dipartimento di Ingegneria Industriale, Università di Roma "Tor Vergata", Via del Politecnico, 1-00133 Rome, Italy 3) Dipartimento di Scienze, Università della Basilicata, Via dell'Ateneo Lucano 10- 85100, Potenza, Italy. 4) Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche, U.O.S. di Tito, C.da Santa Loja, 85010 Tito Scalo – Tito (PZ) – Italy
*corresponding author: giulietta.rau@ism.cnr.it, tel.+39 06 4993 4086, fax +39 06 4993 4153.

16:00 **Structure and enzymatic activity of laser immobilized Ribonuclease A enzyme biomolecules** **NPI 20**
C. Popescu,1 A. C. Popescu1, I. Iordache1, M. Motoc1, D. Pojoga2, A. Simon-Gruita2, N. Constantin2, G. Duta Cornescu2, E. Gyorgy1,3
1National Institute for Lasers, Plasma and Radiations Physics, P. O. Box MG 36, 77125 Bucharest, Romania 2University of Bucharest, Faculty of Biology, Department of Genetics, 060101 Bucharest, Romania 3Consejo Superior de Investigaciones Científicas, Instituto de Ciencia de Materiales de Barcelona (CSIC-ICMAB), Campus UAB, 08193 Bellaterra, Spain

16:00 **Doxorubicin Photo-triggered Release in Living cells For Anticancer Therapy** **NPI 21**
K. Turcheniuk (1), V. Turcheniuk (1, 2), M. Khanal (1), S. Railyan (2), V. Zaitsev (2), R. Boukherroub (1), S. Szunerits (1)
(1) 1Institut de Recherche Interdisciplinaire (IRI), CNRS USR 3078, Université Lille1, Parc de la Haute Borne, 50 avenue de Halley, BP 70478, 59658 Villeneuve d'Ascq, France; (2) Taras Shevchenko University, 60 Vladimirskaya str., Kiev, Ukraine

16:00 **Solid-state Nanopores for Single Molecule Detection** **NPI 22**
Kyloon Chuah(1,2), Peter J. Reece(3), Adam P. Micolich(3) and J. Justin Gooding(1,2)
(1) School of Chemistry, University of New South Wales, Sydney, NSW 2052, Australia (2) Australian Centre for Nanomedicine, University of New South Wales, Sydney, NSW 2052, Australia (3) School of Physics, University of New South Wales, Sydney, NSW 2052, Australia

16:00 **Theoretical study of the basic mechanisms of DNA damage by therapeutic radiation beams** **NPI 23**
F. Manca(1) , S. Giordano (1,2) , P. L. Palla (1,3) G. Perret(1,4), E. Lartigau(5), D. Collard(4), H Fujita(6) and F. Cleri (1,3)
1. IEMN (UMR CNRS 8520), 59652 Villenueve d'Ascq, France; 2. LIA LEMAC/LICS, ECLille, 59652 Villenueve d'Ascq, France; 3. University of Lille I, 59652 Villenueve d'Ascq, France; 4. LIMMS/CNRS-IIS (UMI 2820), Tokyo, Japan; 5. Centre Oscar-Lambret 59000 Lille, France; 6. IIS, University of Tokyo, Japan;

16:00 **Surface modification of upconverting nanoparticles based on ligand exchange reaction** **NPI 24**
I. Mikalauskaitė 1, A. Beganskienė 1, V. Karabanovas 2, R. Kondrotas 3, R. Rotomskis 2, A. Kareiva 1
1 Department of Inorganic Chemistry, Faculty of Chemistry, Vilnius University, Naugarduko st. 24,LT- 03225 Vilnius, Lithuania; 2 Biomedical Physics Laboratory, Institute of Oncology, Vilnius University, Baublio 3B, LT-08406, Vilnius, Lithuania; 3 FTMC, Institute of Chemistry, A. Goštauto st. 9, LT-01108, Vilnius, Lithuania

16:00 **Functionalized Poly(lactide-co-glycolide) Nanoparticles for Sustained Drug Release: Effect of the Formulation Parameters on their Size and their Stability** **NPI 25**
A.M. Pappa1, V. Karagkiozaki1, S. Krol2, M. Seitanidou1, D. G. Fatouros3, S. Logothetidis1
1. Nanomedicine Group, Department of Physics, Lab for "Thin Films -Nanosystems & Nanometrology", Aristotle University of Thessaloniki, Greece 2. Fondazione IRCCS Neurologic Institute "Carlo Besta", IFOM-IEO-campus, Italy 3. Department of Pharmaceutical Technology, School of Pharmacy, Aristotle University of Thessaloniki, GR-54124, Greece.

16:00 **Separation of Cells in Multiphase Systems** **NPI 26**
Gokay Avci, Zekiye Pelin Guven, Ozge Akbulut
Sabanci University

16:00 **Influence of biocompatible hydrogel coatings on ZnO nanowire field effect transistors electrical characteristics** **NPI 27**
Camelia FLORICA (a), Mihaela OANCEA (a), Andreea COSTAS(a), Elena MATEI (a), Maria Eugenia Toimil Molares (b), Ionut ENCULESCU (a)
(a) National Institute of Materials Physics, PO Box MG-7, 77125, Magurele-Bucharest, Romania; (b) GSI, Helmholtz Centre, Planckstr. 1, D-64291, Darmstadt, Germany

16:00 **Iron oxide surface engineering: synthesis of magnetically retrievable nano-organocatalysts** **NPI 28**
E. Nehlig(1)*, L. Motte (1), E. Guénin (1)
Université Paris 13, Sorbonne Paris Cité, Laboratoire CSPBAT, UMR CNRS 7244 74 rue Marcel Cachin, bureau 330, 93017 Bobigny. T.+33 (0)1 48 38 76 21 F. +33 (0)1 48 38 85 28

16:00 **FIB/SEM Characterization of Nanostructured Particles** **NPI 29**
Paulina Lloret1, G.Gim?nez2, P.Granell2, G.Ybarra1, C.Moina1
1Centro de Procesos Superficiales, Instituto Nacional de Tecnolog?a Industrial, Buenos Aires, Argentina. 2Centro de Micro y Nano Electr?nica del Bicentenario, Instituto Nacional de Tecnolog?a Industrial, Buenos Aires, Argentina.

16:00 **Theoretical and experimental study of the role of particle-particle dipole interaction in dielectrophoretic devices at micro and nano scale: application to polynomial electrodes** **NPI 30**
M. Camarda, S. Baldo, G. Fisicaro, R. Anzalone, S. Scalese, A. Alberti, F. La Via, A. Ballo, G. Giustolisi, L. Minafra, F. P. Cammarata, V. Bravatà, G. I. Forte, G. Russo, M. C. Gilardi, A. La Magna,
CNR-IMM Sezione di Catania, Z.I. VIII Strada 5, I-95121 Catania, Italy; Dipartimento di Ingegneria Elettrica Elettronica e Informatica - Universita' degli Studi di Catania; Istituto di Bioimmagini e Fisiologia Molecolare (IBFM-CNR) - LATO, Cefalù PA Sicilia;

16:00 **Structure-Function analysis of the Syk protein by Surface Enhanced Raman Spectroscopy and Western Blot** **NPI 31**
Maximilien Cottat 1, Nadine Varin-Blank 2, Marc Lamy de la Chapelle 1, Nathalie Lidgi-Guigui 1, Christine Le Roy 2
1 Université Paris 13, Sorbonne Paris Cité, Laboratoire CSPBAT, CNRS, (UMR 7244), 93017, Bobigny, France Cachin, 93017 Bobigny, France; 2 Laboratoire UMR 978, INSERM-Université Paris 13, Labex Inflammex, PRES Sorbonne Paris-Cité, UFR-SMBH, 74 rue Marcel Cachin, 93017 Bobigny, France

16:00 **Synthesis of high-moment magnetic nano-particle Fe3O4 for bio-molecular detecting applications** **NPI 32**
Gao Zhiqiang, Hu Xuefeng, Yang Nan, Xu Meigui and Wei Zhang
Division of Sensor and Nanotechnology, State of Key Laboratory of Materials-oriented Chemical Engineering, Nanjing University of technology, Nanjing, Jiangsu, 21009, PR. China

16:00 **Development of iron oxide nanoparticles with recombinant single chain antibody fragments for active targeting of cancerous cells** **NPI 33**
C. Alric(1), K. Hervé Aubert(1), N. Aubrey(2), M. Juste(2), I. Dimier-Poisson(2), I. Chourpa(1)
(1) Nanomédicaments et Nanosondes, EA 6295, Faculté de Pharmacie, Université François Rabelais de Tours, 31 avenue Monge, 37200 Tours (2) Immunologie Parasitaire Vaccinologie et Biothérapie anti-infectieuse, IPVBAI, UMR Université-INRA ISP1282, Faculté de Pharmacie, 31 avenue Monge, 37200 Tours

16:00 **Impact of folic acid functionalisation of polymer-coated hybrid nanoparticles on their interaction with live immune and cancer cells** **NPI 34**
E. Allard-Vannier, A. Augé, K. KaaKi, A. Carrouée, K. Hervé-Aubert, I. Chourpa
EA 6295, Nanomédicaments et Nanosondes, Université F. Rabelais, Tours - France

28 May 2014

08:30 **Magnetic hyperthermia : what is working or not** **N.III 1**
Clément Guibert, Vincent Dupuis, Véronique Peyre, Jérôme Fresnais, Véronique Montembault, Laurent Fontaine,
Laboratoire PhENIX, UMR 8234 4 place Jussieu 75252 Paris cedex 05, Institut des Molécules et des Matériaux du Mans - UMR 6283 Av. Olivier-Messiaen - 72085 LE MANS Cedex 09

09:00 **Modulation of heating mechanisms in monodisperse and crystalline iron oxide nanoparticles by magnetic dipolar interactions** **N.III 2**
G. Salas1,2, J. G. Ovejero1,2, D. Cabrera1, J. Camarero1,3, M. Varela4,5, R. Ludwig6, H. Dahring6, I.Hilger6, R. Miranda1,3, M.P. Morales2, and F.J.Teran1,7
1- IMDEA Nanociencia, Campus Universitario de Cantoblanco, 28049 Madrid, Spain 2- Instituto de Ciencia de Materiales de Madrid-CSIC, C\Sor Juana Ines de la Cruz, 5 Campus Universitario de Cantoblanco, 28049 Madrid, Spain 3- Dpto. Fisica de la Materia Condensada, and Instituto Nicolas Cabrera, Universidad Autonoma de Madrid, Campus Universitario de Cantoblanco, 28049 Madrid, Spain 4- Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, United States 5- Dpt. Fisica Aplicada III & Instituto Pluridisciplinar, Universidad Complutense de Madrid, 28040 Madrid, Spain. 6- Institute for Diagnostic and Interventional Radiology I, Jena University Hospital - Friedrich Schiller University Jena, Bachstrasse 18, D-07740 Jena, Germany 7- Unidad Asociada de Nanobiotecnologia CNB-CSIC & IMDEA Nanociencia, Campus Universitario de Cantoblanco, 28049 Madrid, Spain

09:20 **The in vitro micro-environment interface: Macromolecular crowding meets tissue engineering by self-assembly** **N.III 3**
Abhigyan Satyam 1, Pramod Kumar 1,Xingliang Fan 1, Yury Rochev 1, Lokesh Joshi 2, Héctor Peinado 3, David Lyden 3, Benjamin Thomas 4, Brian Rodriguez 5, Michael Raghunath 6, Abhay Pandit 1 and Dimitrios Zeugolis 1
1. Network of Excellence for Functional Biomaterials (NFB), National University of Ireland Galway (NUI Galway), Galway, Ireland. 2. Alimentary Glycoscience Research Cluster, NUI Galway, Galway, Ireland. 3. Departments of Pediatrics, Cell and Developmental Biology, Weill Cornell Medical College, New York, USA. 4. Central Proteomics Facility, Sir William Dunn Pathology School, Oxford University, Oxford, UK. 5. Conway Institute of Biomolecular & Biomedical Research, University College Dublin, Dublin, Ireland. 6. Faculty of Engineering and Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

09:40 **New stimuli-responsive nanosystems based in Coordination Polymers Particles (CPPs) for bio-applications** **N.III 4**
Fabiana Nador (1), Fernando Novio (1,2), Daniel Ruiz-Molina (1,2).
(1) ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain. (2) CSIC - Consejo Superior de Investigaciones Cientificas, ICN2 Building, Campus UAB, 08193 Bellaterra (Barcelona), Spain.

10:00 **Coffee break**

10:30 **Iron oxide nanoparticles for magnetic mediated hyperthermia, controlled drug delivery and ovarian cancer tumor targeting** **N.III 5**
Teresa Pellegrino
Nanochemistry, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy National Nanotechnology Laboratory of CNR-NANO, via per Arnesano km 5, 73100 Lecce, Italy

11:00 **Iron oxide nanoparticles size effect on T1 and T2 MRI contrast** **N.III 6**
J. Bolley, M. Boucher; S. Meriaux;N. Pinna, L. Motte and Y. Lalatonne
a. CSPBAT (UMR7244), Université Paris 13 b. Neurospin, CEA c. Humboldt-Université, Berlin Institut de Chimie d. Hôpital Avicenne, Service de Médecine Nucléaire

11:20 **Shear stress regulated cellular uptake of drug delivery vehicles towards cancer treatment** **N.III 7**
Boon M. Teo, Brigitte Städler
Interdisciplinary Nanoscience Center, Aarhus University

11:40 **Capturing Circulating Tumor Cells onto Conducting Polymer-Based Micro/Nanorod Arrays with Chemical and Topographical Control** **N.III 8**
Chiung-Wen Kuo, Yu-Sheng Hsiao, Di-Yen Chueh,Peilin Chen
Research Center for Applied Sciences Academia Sinica

12:00 **Multilayer polymer microcontainers functionalized with silicon nanoparticles for controlled drug delivery** **N.III 9**
Yulia Maximenko, Dmitry Gorin, Noha Elhalawany, Zain Yamani, Siu-Tung Yau, Munir Nayfeh
Department of Physics, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801; Faculty of nano- and biomedical technologies, Saratov State University, Saratov, 410012, Russia; Polymers and Pigments Department, Chemical Industrial Division, National Research Center, Cairo 12311, Egypt; 45 Center of Excellence for Nanotechnology, KFUPM, Dhahran 31261, Saudi Arabia; Department of Electrical Engineering, Cleveland State University, Cleveland, Ohio 44115; Department of Physics, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

12:20 **Lunch**

13:50 **Palladium and gold nanoparticles for prostate brachytherapy, synthesized by a rapid procedure** **N.III 10**
Diane Djoumessi Lekeufack1,2, Pascale Chevallier2, Jean Lagueux2, Marie-France Cote2, and Marc-Andre Fortin1,2
1 Departement de genie des mines de la metallurgie et des materiaux - Universite Laval, Canada; Laboratoire de Biomateriaux pour l'Imagerie Medicale (BIM) 2 Centre de recherche du Centre hospitalier universitaire de Quebec (CR-CHUQ), Canada

14:20 **Peptide-mediated Intracellular Delivery of Luminescent Quantum Dots: Bypassing the Endocytotic Pathways** **N.III 11**
Malak Safi, Naiqian Zhan, Fadi Aldeek,Tatiana Domitrovic, John J. Johnson, and Hedi Mattoussi
Malak Safi: Florida State University, Department of Chemistry and Biochemistry, 95 Chieftan Way, Tallahassee, Florida 32306 and Institut d'Electronique Fondamentale, Université Paris Sud, Bât 220, 91445 Orsay, France; Naiqian Zhan:Florida State University, Department of Chemistry and Biochemistry, 95 Chieftan Way, Tallahassee, Florida 32306; Fadi Aldeek:Florida State University, Department of Chemistry and Biochemistry, 95 Chieftan Way, Tallahassee, Florida 32306; Tatiana Domitrovic:The Scripps Research institute, Department of Integrative Structural and Computational Biology, MB31, The Scripps Research Institute, La Jolla, CA 92037; John J. Johnson:The Scripps Research institute, Department of Integrative Structural and Computational Biology, MB31, The Scripps Research Institute, La Jolla, CA 92037; Hedi Mattoussi:Florida State University, Department of Chemistry and Biochemistry, 95 Chieftan Way, Tallahassee, Florida 32306

14:40 **Design and cellular response of bimodal MRI-SERS nanoprobes** **N.III 12**
Ambre CARROUEE 1 2, Emilie ALLARD-VANNIER 1, Sandra MEME 2, Jean-Claude BELOEIL 2, Igor CHOURPA 1
1 EA 6295, Nanomédicaments et nanosondes, Université F. Rabelais, Tours – France 2 UPR 4301, équipe « IRM, signaux, images et expression des gènes », CBM d'Orléans, France

15:00 **Surface Enhanced Raman Scattering based on gold deposited on rough porous silicon surface** **N.III 13**
H. Dridi1,2), A. Moadhen2), and L. Haji1)
(1) Universit? Europ?enne de Bretagne, CNRS-UMR 6082, BP 80518, ENSSAT 6 rue Kerampont, 22305 Lannion Cedex, France (2) Universit? de Tunis El Manar, Facult? des Sciences de Tunis. Unit? Nanomat?riaux et Photonique. 2092 El Manar-Tunis.Tunisia

15:20 **Specific and sensitive biosensor based on the Surface Enhanced Raman Scattering (SERS)** **N.III 14**
Maximilien Cottat 1, Natalia Malashikhina 2, Angela Sutton 3, Nathalie Charnaux 3, H. Shen 4, T. Toury 4, Valery Pavlov 2, Andrea Toma 5, Enzo Di Fabrizio 5, Marc Lamy de la Chapelle 1
1 Laboratoire CSPBAT-UMR7244, UFR Santé Médecine Biologie Humaine-Université Paris13, 74 rue Marcel Cachin, 93017 Bobigny, France; 2 Biofunctional Nanomaterials Department, CIC biomaGUNE, Parque Tecnológico de San Sebastian, Donostia, San Sebastian, Spain; 3 Laboratoire LI2P, UFR Santé Médecine Biologie Humaine-Université Paris13, 74 rue Marcel Cachin, 93017 Bobigny, France; 4 Université de technologie de Troyes, Laboratoire de Nanotechnologie et d'instrumentation Optique, Institut Charles Delaunay, FRE 2848, 12 rue Marie Curie, 10010 Troyes, France; 5 Istituto Italiano di Tecnologia (IIT). Via Morego, 30 16163 Genova, Italy.

15:40 **Coffee break**

29 May 2014

08:30 **Introduction to Magnetic Particle Spectroscopy and Imaging, its potential Applications, and the need for optimized and functionalized SPIO Contrast Agents** — N.IV 1
J Franke
Bruker BioSpin MRI GmbH, Germany

09:00 **New magnetic sensitive nanocomposite biopolymer-based networks: design and mechanical properties under magnetic field** — N.IV 2
A. Ponton, S. Gantz, C. Galindo Gonzalez, L. Ourry, F. Mammeri, S. Ammar-Merah
Matière et Systèmes Complexes (MSC) UMR 7057 CNRS & Université Paris Diderot-Paris 7 Laboratoire Interfaces Traitements Organisation et Dynamique des Systèmes (ITODYS) UMR 7086 CNRS & Université Paris Diderot-Paris 7

09:20 **Optical and magnetic dendronized iron oxide markers for the lymph node detection with a hand-held probe** — N.IV 3
J. Jouhannaud1, A. Garofalo1, D. Felder-Flesch1 . Simon2, K. Mohamadabadi6, C. Coillot3, P. Poulet4, D. Vonwil5, P. Shastri5 and G. Pourroy1
1 Institut de Physique et Chimie des Matériaux de Strasbourg IPCMS, UMR 7504 CNRS-ECPM-Université de Strasbourg, 23 rue du Loess BP 43, 67034 Strasbourg Cedex 2, France; 2 EURORAD, 2 rue Ettore Bugatti 67201 Eckbolsheim, France; 3 Laboratoire Charles Coulomb UMR 5221 CNRS-UM2-Université Montpellier 2, Place Eugène Bataillon - CC069, 34095 Montpellier Cedex 5, France; 4 Laboratoire d'Imagerie et Neurosciences Cognitives LINC, UMR 7237 CNRS-Université de Strasbourg, Institut de physique Biologique Faculté de Médecine 4, rue Kirschléger 67085 Strasbourg Cedex, France; 5 Institute for Macromolecular Chemistry Albert-Ludwigs University Freiburg, Stefan-Meier-Str. 31 79104 Freiburg-im-Breisgau., Deutschland;6Laboratoire de Physique des Plasmas - Ecole Polytechnique - Route de Saclay - 91128 Palaiseau

09:40 **Functional MRI Probe for ROS Detection** — N.IV 4
Pradeep P Wyss1, Shengnan Xiang1, Ralf Thomann1, V Prasad. Shastri1,2
1Institute for Macromolecular Chemistry, University of Freiburg, 79104, Freiburg, Germany; 2BIOSS?Centre for Biological Signalling Studies, University of Freiburg, 79104, Freiburg, Germany

10:00 **Coffee break**

10:30 **Dendritic nanoprobes for tumor targeting** — N.IV 5
Audrey PARAT,a Antonio GAROFALO,a Aurélie WALTER,a Julien Jouhannaud, a Pauline BONAZZA,b David KRYZA,b Jacqueline SIDI-BOUMEDINE,b Claire BILLOTEY, b,c Geneviève POurroy, a Sylvie BEGIN-COLIN,a and Delphine FELDER-FLESCH a
a Institut de Physique et de Chimie des Matériaux de Strasbourg, IPCMS b Université Claude bernard Lyon1, Hospices Civils de Lyon c Université Jean Monnet, Saint-Etienne

11:00 **Multimodal imaging of metal oxide nanoparticle interaction with cells en multi cellular organisms: qualitative and quantitative approaches** — N.IV 6
Q. Le Trequesser1,2,3, G. Devès2,3, G. Saez2,3, Ph. Barberet2,3, C. Habchi2,3, H. Seznec2,3 M-H. Delville1*
1 ICMCB/CNRS, Universite de Bordeaux, Pessac, France 2 Univ. Bordeaux, CENBG, UMR 5797, F-33170 Gradignan, France 3 CNRS, IN2P3, CENBG, UMR 5797, F-33170 Gradignan, France

11:20 **Ultra-high-frequency (UHF) surface-acoustic-wave (SAW) induced streaming in sub-nanoliter droplets: a new route towards truly portable, high-efficiency sensing and diagnostics** — N.IV 7
Shilton R.(1), Travagliati M.(1,2), Beltram F.(2), and Marco Cecchini (2)
1. Center for Nanotechnology Innovation@NEST, Istituto Italiano di Tecnologia, Piazza San Silvestro 12, I 56127 Pisa, Italy. 2. NEST, Scuola Normale Superiore and Istituto Nanoscienze-CNR, Piazza San Silvestro 12, I 56127 Pisa, Italy.

11:40 **Facile routes to acquire Single DNA functionalized gold nanoarrays on Silicon chip** — N.IV 8
Ragavendran Sivakumarasamy, Elodie Richard, Christian Slomianny, Dominique Vuillaume, Yannick Coffinier and Nicolas Clément
Institute of Electronics, Microelectronics and Nanotechnology-CNRS, Avenue Poincaré, BP60069, 59652 Villeneuve d'Ascq, France; Interdisciplinary Research Institute-CNRS, 50, av de Halley-BP 70478, 59658 Villeneuve d'Ascq cedex, France; Centre Commun de Mesures Imagerie Cellulaire, Université de Lille 1 UFR de Biologie, bât.SN3, Cité scientifique, 59655 Villeneuve d'Ascq cedex, France

12:00 **Effect of the size, the density and the interface morphology of silicon nanowires on the nerve fibers regeneration** — N.IV 9
A.Korsak1, V. Likhodiyevskiy1, Yu. Chaikovsky1 , A. Klimovskaya2, N. Vysotskaya2, I. Lutsyshyn2, Yu. Pedchenko2, and I. Ostrovskii3
1 Bogomolets National Medical University, 01601 Kyiv, T. Shevchenko blvd., 13, Ukraine; 2 Lashkaryovs Institute of Semiconductor Physics, 03600 Kyiv, Nauki blvd., 41, Ukraine; 3 State University ?Lvivska Polytechnika?, 79013, Lviv, Bandery str., 12, Ukraine

12:20 **Lunch**

13:50 **Fully Functional Nanohybrids and Biosensors using High-Throughput Picosecond Laser Ablation** — N.IV 10
Dr. Laszlo Sajti Annette Barchanski Prof. Dr. Boris Chichkov
Laser Zentrum Hannover e.V. Nanotechnology Department Hollerithallee 8. 30419 Hannover, Germany

14:20 **Synthesis and characterization of Magnetic Bacterial cellulose films.** — N.IV 11
Muling Zeng, Anna Roig, Anna Laromaine
Institut Ciencia de Materials de Barcelona, Campus UAB, 08193 Bellaterra, Spain.

14:40 **Fibrous gelatin scaffolds for skin regeneration** — N.IV 12
Kaido Siimon, Paula Reemann, Martin Pook, Viljar Jaks, Martin Järvekülg
Kaido Siimon - Institute of Physics, University of Tartu; Paula Reemann - Department of Physiology, University of Tartu; Martin Pook, Viljar Jaks - Institute of Molecular and Cell Biology, University of Tartu; Martin Järvekülg - Estonian Nanotechnology Competence Centre.

15:00 **Low-cost PDMS-derived carbon nanodomains formation** — N.IV 13
Mariana Cerda Zorrilla, Juan Carlos Castro Alcántara, Mathieu Hautefeuille
Facultad de Ciencias, Universidad Nacional Autónoma de México, México

15:20 **Functional Porous Nanoparticles and Hydrogels for Efficient Antigen Delivery** — N.IV 14
Jaeyun Kim, Bom Yi Shin, Bong Guen Cha
School of Chemical Engineering, Sungkyunkwan University

15:40 **Coffee break**

Poster session : Geneviève Pourroy

16:00 **Mesoporous Silica Nanoparticles for Binuclear MRI studies (1H and 19F) and Cell Tracking Applications** — NPII 1
Meryem Bouchoucha1,2, Marc-Andre Fortin1 and Freddy Kleitz2
1Laboratoire de Biomateriaux pour l'Imagerie Medicale (BIM), Centre hospitalier universitaire de Quebec (CR-CHUQ), Axe Medecine Regeneratrice, Quebec, G1L 3L5, Canada 2Laboratoire des Materiaux Fonctionnels Nanoporeux, Departement de chimie et Centre de recherche sur les materiaux avances (CERMA), Universite Laval, Quebec, G1V 0A6, Canada

16:00 **Facile in Situ Fabrication of Organic-Inorganic Vesicular Hybrids by Assembly of Dendritic Amphiphiles: the Site-Selective Encapsulation of Nanoparticles** — NPII 2
Jung-Keun Kim, Inhye Kim, Yong-Jae Kim, Byoung-Ki Cho, Eunji Lee
Analytical Science and Tehchnology, Chungnam National University, Republic of Korea; Department of Chemistry, Dankook University, Republic of Korea

16:00 **Importance of physicochemical properties of proteins in affecting the protein corona around gold nanoparticles** **NPII 3**
Gokce Engudar, Abhijeet Patra, Thirumalai Venky Venkatesan, James Kah
Department of Biomedical Engineering, National University of Singapore, Singapore

16:00 **Nanoparticle physical properties and its influence on particle distribution in flow** **NPII 4**
Yan Teck Ho, James Kah
Department of Biomedical Engineering, National University of Singapore, Singapore

16:00 **Magnetic Core-Plasmonic Shell Dual Functional Nanoparticles as a Novel Cellular Probe for Bioapplications** **NPII 5**
Mari Takahashi, Priyank Mohan, Derrick Mott, Kazuaki Matsumura, Akiko Nakade, Tsutomu Hamada, Shinya Maenosono
School of Materials Science, Japan Advanced Institute of Science and Technology

16:00 **Study of Porous Silicon morphology effects on biomarker detection** **NPII 6**
V. Aiello I, A. Mombrun II, C. Leclech II, A. Bouamrani II, F. Gaillard I
ICEA, Leti, Minatec Campus, 17 rue des martyrs – F38054 Grenoble Cedex 9
IICEA, Leti, Clinatec, 17 rue des martyrs – F38054 Grenoble Cedex

16:00 **ALBUMIN-POLYETHYLENIMINE-siRNA NANOCOMPLEXES FOR IMPROVING siRNA DELIVERY EFFICIENCY** **NPII 7**
Elena Nicoli1,2; V. Prasad Shastri 2,3
1Dipartimento di Scienze del Farmaco, University of Eastern Piedmont, Novara, Italy; 2Institute for Macromolecular Chemistry Freiburg, Germany; 3BIOSS-Centre for Biological Signaling Studies, University of Freiburg, Freiburg, Germany.

16:00 **Nanoparticle/polymers interactions: formation of clusters for MRI applications** **NPII 8**
Casterou Gerald, Gauffre Fabienne, Kahn Myrtil
Institut des sciences chimique de Rennes, UMR6226, Rennes ; Laboratoire de chimie de coordination, UPR8241, Toulouse

16:00 **Amorphous supramolecular coordination polymers as nanomaterials for theranostics** **NPII 9**
Fernando Novio (1,2), Fabiana Nador (1), Karolina Wnuk (1,2), Julia Lorenzo (3), Daniel Ruiz-Molina (1,2)
(1) ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain; (2) CSIC - Consejo Superior de Investigaciones Cientificas, ICN2 Building, Campus UAB, 08193 Bellaterra (Barcelona), Spain; (3) Unitat d´Enginyeria de Proteïnes i Proteòmica Institut de Biotecnologia i Biomedicina Universitat Autònoma de Barcelona, 08193 Barcelona (Spain)

16:00 **Stimuli Responsive polymeric nanotubes for release and diffusion studies** **NPII 10**
Parveen Qureshi , Gozde Ozaydin-Ince.
Department of Materials Science and Engineering, Sabanci University,Orhanli,34956, Istanbul, Turkey

16:00 **Hybrid and biodegradable polymeric thin films effect on murine melanoma B16-F10 cells** **NPII 11**
V. Dinca1#, P. Florian2, M. Icrivezi2, L. Rusen1,3, A. Palla-Papavlu1, A. Roseanu2# and M. Dinescu1
1Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-16, Zip RO-077125, Magurele, Bucharest, Romania 2 Ligand –receptor Interaction Department, Institute of Biochemistry, Romanian Academy, 296 Splaiul Independentei, 060031 Bucharest 17, Romania 3Faculty of Physics, University of Bucharest, RO-077125, Magurele, Bucharest, Romania

16:00 **IN VITRO STUDIES OF 58S BIOGLASS COATING BY SOL-GEL PROCESS ONTO TITANIUM ALLOY SCAFFOLDS** **NPII 12**
S. Grandi, P. Mustarelli, G. Bruni, G. Cermola, F.Cristofaro, L.Visai
S. Grandi; P. Mustarelli; G. Bruni; G. Cermola; Dep. of Chemistry and INSTM, University of Pavia, V.le Taramelli 12, 27100 Pavia, Italy. G. Cermola; F.Cristofaro; L.Visai; Dep. of Biology and Biotechnology «L. Spallanzani «, University of Pavia, Via Bassi 21, 27100 Pavia, Italy

16:00 **Development of a Sensitive SERS Substrate for Biosensing of Oral Squamous Cell Carcinoma** **NPII 13**
N Phillipson(1), J O'Callaghan(2), P Owens(1), M Foley(1), I Keogh(3), M Olivo(1), G M O'Connor(1)
(1) School of Physics, National University of Ireland Galway; (2) Tyndall National Institute, Cork, Ireland; (3) University Hospital Galway, Ireland

16:00 **Improvement of the hydroxyapatite characteristics by SiC addition** **NPII 15**
M.Dinu1, A.Kiss1,B. Bakin2, T. Koc Delice2, U. Tiric2, V.Braic1, I.Pana1, A.Parau1, A.Vladescu1
1National Institute for Optoelectronics, 409 Atomistilor Str., Magurele, Romania 2 Dokuz Eylul University, Engineering Faculty, Metallurgical and Malerials Engineering Department,Tinaztepe Campus, 3516, Turkey

16:00 **Biosensor made by UV NanoImprint Lithography using Surface Enhanced Raman Spectroscopy (SERS)** **NPII 16**
Maximilien Cottat a, Nathalie Lidgi-Guiguia, Inga Tijunelytea, Frédéric Hamouda b, Philippe Gogol b, Abdelhanin Aassime b, Jean-Michel Lourtioz b, Bernard Bartenlian b, Divya Venkataramanc, Robert S. Marks c,d, Terry W.J. Steelec, Marc Lamy de la Chapellea
a Université Paris 13, Sorbonne Paris Cité, Laboratoire CSPBAT, CNRS, (UMR 7244), 93017, Bobigny, France; b IEF CNRS UMR8622, Univ. Paris-Sud, Orsay cedex, 91405, France ;c Division of Materials Technology, Nanyang Technological University, School of Materials Science & Engineering, College of Engineering, 50 Nanyang Drive Singapore; d The Avram and Stella Goldstein-Goren Department of Biotechnology Engineering, The National Institute for Biotechnology in the Negev, the Ilse Katz Institute for Nano-Science and Technology, Ben Gurion University of the Negev, Beer-Sheva, 84105, Israel

16:00 **High-sensitive TMR microarray for small amount CEA biomarker detection** **NPII 17**
Hu Xue Feng, Zhang PingPing, Tao Li□Yang Nan□Xu Meigui and Wei Zhang
Division of Sensor and Nanotechnology, State of Key Laboratory of Materials-oriented Chemical Engineering, Nanjing University of technology, Nanjing, Jiangsu, 21009, PR. China

16:00 **A New Coating Technology for Developing Glycosylated Polymers as Advanced Biofunctional Materials** **NPII 18**
M. Daniela Angione, Thomas Duff, Federico Zen, Eoin M. Scanlan,* Paula E. Colavita*
School of Chemistry, University of Dublin Trinity College, College Green, Dublin, Dublin D2, Ireland. Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), University of Dublin Trinity College, Dublin, DublinD2, Ireland

16:00 **Combination of MRI and SR-FTIR imaging techniques to evaluate the biodistribution and tolerance of PEGylated SPIONs in healthy mice** **NPII 19**
A. Carrouée ab, E. Allard-Vannier a, L. Douziech a, JC. Beloeil b, S. Même b, F. Jamme c, P. Dumas c, I. Chourpa a
(a) EA 6295 « Nanomédicaments et nanosondes», Université F. Rabelais de Tours, France (b) UPR 4301, équipe « IRM, signaux, images et expression des gènes », CBM d'Orléans, France (c) Synchrotron SOLEIL, L'Orme des Merisiers, Gif-sur-Yvette, France

16:00 **BIOIMAGING WITH NANOPARTICLES PREPARED FROM SILICON NANOWIRES** **NPII 20**
LIUBOV OSMINKINA, ELENA TOLSTIK, CHRISTIAN MATTH?US, RAINER HEINTZMANN, VLADIMIR SIVAKOV, VICTOR TIMOSHENKO
LIUBOV OSMINKINA, VICTOR TIMOSHENKO:Lomonosov Moscow State University, Department of Physics, 119991 Moscow, Russia; ELENA TOLSTIK, CHRISTIAN MATTH?US, RAINER HEINTZMANN: Leibniz-Institute of Photonic Technology, Albert-Einstein Street 9, Jena 07745, Germany,FRIEDRICH-SCHILLER-UNIVERSITY, INSTITUTE OF PHYSICAL CHEMISTRY, JENA/GERMANY; VLADIMIR SIVAKOV: Leibniz-Institute of Photonic Technology, Albert-Einstein Street 9, Jena 07745, Germany

16:00 **Hyperbranched Polydendrons: New branched dendritic-linear hybrid materials for nanomedicine development.** **NPII 21**
Steve Rannard, Fiona Hatton, Pierre Chambon, Andrew Dwyer, Hannah Rogers, Andrew Owen, Lee Tatham
Steve Rannard; Fiona Hatton; Pierre Chambon; Andrew Dwyer; Hannah Rogers; Department of Chemistry, Crown Street, University of Liverpool, L69 7ZD, UK
Andrew Owen; Lee Tatham; Department of Molecular and Clinical Pharmacology, University of Liverpool, Block H, 70 Pembroke Place, Liverpool , L69 3GF , UK

16:00 **Surface Modified Polymeric Nanopillars as Defined Substrates for Stem Cell Cultures** **NPII 22**

Chiung-Wen Kuo1, Di-Yen Chueh 1, Chu-Hua Lu 1 Shuhei Konagaya2, Hiroo Iwata2 and Peilin Chen1
1Research Center for Applied Sciences, Academia Sinica, 128, Section 2, Academia Road, Nankang, Taipei 115, Taiwan 2Institude for Frontier Medical Sciences, Department of Reparative Materials, Kyoto University, Kyoto 606-8507, Japan

16:00 **Nanobioarchitectures based on photopigments, artificial lipid bilayers and carbon nanotubes** **NPII 23**

Marcela Elisabeta Barbinta-Patrascu (a), Stefan Marian Iordache (b), Ana Maria Iordache (b), Nicoleta Badea (c), Camelia Ungureanu (c), Rodica Cristescu (d)
(a) University of Bucharest, Faculty of Physics, Department of Electricity, Solid-State Physics and Biophysics, 405 Atomistilor Street, PO Box MG-11, Bucharest-Magurele, 077125, Romania (b) University of Bucharest, 3Nano-SAE Research Center, PO Box MG-38, Bucharest-Magurele, Romania (c) University ?Politehnica? of Bucharest, Faculty of Applied Chemistry and Materials Science 1-7, Polizu Str., 011061, Bucharest, Romania (d) National Institute for Lasers, Plasma & Radiation Physics, Lasers Department, P.O. Box MG-36, Bucharest-Magurele, Romania

16:00 **Development of hydroxyapatite thermally sprayed coatings using different liquid feedstocks for biomedical applications** **NPII 24**

I. Georgiopoulos, G. Michanetzis, Z. Tatoudi, M. Vardavoulias, C. Andreouli, Y. Missirlis
I. Georgiopoulos; Z. Tatoudi; C. Andreouli : MIRTEC S.A, 72nd km Athens- Lamia National Road, P.O. Box 18646, 34100, Chalkida, Greece G. Michanetzis; Y. Missirlis: UNIVERSITY OF PATRAS, Laboratory of Biomedical Engineering and Biomechanics Department of Mechanical Engineering and Aeronautics, GR 26504 Rion Patras Greece M. Vardavoulias: PYROGENESIS S.A, Technological Park of Lavrio, 19500 Lavrio, Greece

16:00 **Synergic combination of sol-gel technique and a plasmonic device for biosensing** **NPII 26**

Cristiana Figus1*, Francesco Quochi1, Giovanni Bongiovanni1, Andrea Mura1, Michele Saba1, Francesco Floris2, Lucia Fornasari2, Maddalena Patrini2, Franco Marabelli2, Paola Pellecani3 and Andrea Valsesia3.
1Department of Physics – University of Cagliari, S.P. 8 Km 0.7, I-09042 Monserrato (CA), Italy. 2Department of Physics – University of Pavia, Via Agostino Bassi 6, I-27100 Pavia (PV), Italy. 3Plasmore S.r.l. – Via Grazia Deledda 4, I-21020 Ranco (VA), Italy.

16:00 **Biochips based on amorphous silicon-carbon alloy** **NPII 27**

J. Yang,1 A. C. Gouget-Laemmel,1 F. Ozanam1,, A. Siriwardena2, R. Boukherroub3, S. Szunerits3
1 Physique de la Mati?re Condens?e, Ecole Polytechnique-CNRS, France 2 Laboratoire des Glucides, Universit? de Picardie Jules Verne, France 3 Institut de Recherche Interdisciplinaire, Universit? Lille Nord de France, France

16:00 **One pot two steps synthesis of water soluble functionalized gold nanoparticles** **NPII 28**

Romain Aufaure, Yoann Lalatonne, Laurence Motte and Erwann Guénin
Laboratoire CSPBAT (UMR7244) ; LPBS ; Université Paris 13 ; France

16:00 **An investigation of the beta-amyloid aggregation on carbon allotropes thin films for sensing applications** **NPII 29**

C. Breazu1,2, F. Stanculescu2, N. Preda1, O. Rasoga1, M. Socol1, G. Socol, A. Stanculescu1
1National Institute of Materials Physics, 105 bis Atomistilor Street, P.O. Box MG-7, 077125, Bucharest-Magurele, Romania; 2University of Bucharest, Faculty of Physics, Str. Atomistilor nr.405, P.O. Box MG-11, Bucharest

16:00 **Alternative technique for calcium phosphate coating on titanium alloy implants** **NPII 30**

Van Quang Le1, Faerber Jacques1, Leandro Jacomine2, Thierry Roland2, Genevieve Pourroy1 and Adele Carrado1
1 Institut de Physique et Chimie des Materiaux de Strasbourg IPCMS, UMR 7504 CNRS-ECPM-Universite de Strasbourg, 23 rue du Loess BP 43, 67034 Strasbourg cedex 2; 2 Institut Charles Sadron (ICS) CNRS - Universite de Strasbourg (UPR 22). 23 rue du Loess, BP 84047. 67034 Strasbourg Cedex 2. France

16:00 **Superparamagnetic nanoparticles for RMI brain tumors molecular imaging** **NPII 31**

Sophie Richard 1, Amaury Herbet 2, Marianne Boucher 3, Yoann Lalatonne 1, Sébastien Mériaux 3, Jean-Philippe Hugnot 4, Didier Boquet 2, Laurence Motte 1
1 Université Paris 13, UMR 7244 CNRS, Bobigny, 93017, France ; 2 CEA de Saclay, iBiTecS, LIAS, Gif sur Yvette, 91191, France ; 3 CEA de Saclay, Neurospin, Gif sur Yvette, 91191, France ; 4 Institut de Neuroscience de Montpellier, INSERM U1051, Montpellier, 34091, France;

16:00 **Engineering breast cancer invasion models by Laser Direct-Write** **NPII 32**

D.B. Chrisey, T. Phamduy
D.B. Chrisey Tulane University; T. Phamduy Tulane University

16:00 **Modified Nano-Structure and Improved Dispersion Stability of Hydroxyapatite Nanopowder Functionalized in situ by Gluconic Acid using Microwave Technology** **NPII 33**

Dariusz Smolen12, Iwona Malka1, Elzbieta Pietrzykowska1, Stanislaw Gierlotka1, Adam Presz1, Cezariusz Jastrzebski3, Krzysztof Switkowsk3, Kamil Sobczak4, Witold Lojkowski1,5
1. Polish Academy of Science, Institute of High Pressure Physics, Sokolowska 29/37, 01-142 Warsaw 2. NanoVelos ltd, TraktLubelski 40a, 04-870 Warsaw, Poland, d.smolen@nanovelos.com 3. Warsaw University of Technology, Faculty of Physics, Koszykowa 75, 00-662 Warsaw 4. Polish Academy of Science, Institute of Physics, Al. Lotnikow 32/46. 02-668 Warsaw 5. Białystok University of Technology, Faculty of Management

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM O

Computational modelling of organic semiconductors: from the quantum world to actual devices

Symposium Organizers:

Egbert Zojer, Graz University of Technology, Austria

Leeor Kronik, Weizmann Institute of Science, Rehovoth, Israel

Georg Heimel, Institut für Physik, Humboldt-Universität zu Berlin, Germany

Scientific Computing & Modelling

26 May 2014

08:50 **Welcome**

Modelling non-covalent interactions : Egbert Zojer

09:00 **Van der Waals Interactions in Nanostructured Materials: Breaking Preconceived Notions** O.1 1
Alexandre Tkatchenko
Fritz-Haber-Institut der MPG, Berlin, Germany

09:30 **Investigation of structural and electronic properties of the DNTT and DNSS crystals using the DFT with van der Waals correction to the PBE functional** O.1 2
J. X. Cantuaria, R. Lelis-Sousa
Departamento de Ciências Naturais, Licenciatura em Física, Universidade Federal do Tocantins, Campus de Araguaína, Rua Paraguai S/N, CEP 77824-838, Araguaína, Brazil

09:45 **Electronic Properties of Surfaces and Interfaces with Self-Consistent van der Waals Functional** O.1 3
Nicola Ferri (1), Robert A. DiStasio Jr. (2), Roberto Car (2), Alexandre Tkatchenko (1), and Matthias Scheffler (1)
(1) Theory Department, Fritz-Haber-institut der MPG, Faradayweg 4-6, 14195, Berlin, Germany; (2) Department of Chemistry, Princeton University, Princeton, New Jersey 08544, USA

10:00 **Coffee Break**

Many-Body Perturbation-Theory : Leeor Kronik

10:30 **Excited States and Spectroscopy of Organic Semiconductors from Many-Body Perturbation Theory** O.2 1
Jeffrey B. Neaton
Department of Physics, University of California, Berkeley Molecular Foundry, Lawrence Berkeley National Laboratory Kavli Center for Energy Nanosciences at Berkeley

11:00 **Ab initio many-body perturbation theory for organic photo-voltaics** O.2 2
Ivan Duchemin (1), Carina Faber (2), Paul Boulanger (2), Xavier Blase (2,3)
(1) CEA-Grenoble/INAC/SP2M/L_Sim, UJF Grenoble; (2) Institut Neel CNRS Grenoble; (3) UJF Grenoble

11:15 **Accurate Description of the Electronic Structure of Organic Semiconductors by GW Methods** O.2 3
Noa Marom
Department of Physics and Engineering Physics, Tulane University, New Orleans, LA 70118, USA

11:30 **Effects of aggregation, defects and functionalization in conjugated C-based systems** O.2 4
Alice Ruini
Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Universita' di Modena e Reggio Emilia and Istituto CNR-NANO-S3, Modena, Italy

12:00 **Lunch Break**

DFT applications and challenges : Jeffrey Neaton

13:30 **Exploring the Limit of Density Functional Approximations for Modeling Organic Molecular Materials** O.3 1
Clemence Corminboeuf, Riccardo Petraglia, Eric Bremond, Peter Tentscher, Stephan Steinmann
Laboratory for Computational Molecular Design, Institute of Chemical Sciences and Engineering, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland

14:00 **Computational screening of functionalized porphyrins for dye sensitized solar cells** O.3 2
Kristian Baruël Ørnsø, Juan Maria Garcia-Lastra and Kristian Sommer Thygesen
Center for Atomic-scale Materials Design, Department of Physics, Technical University of Denmark

14:15 **Impurity related degradation of P3HT and PCBM. A first-principles study.** O.3 3
G. Volonakis (1), L. Tsetseris (2), S. Logothetidis (1)
(1) Lab for Thin Films, Nanosystems and Nanometrology, Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece; (2) Department of Physics, National Technical University of Athens, Athens, Greece

14:30 **Break**

14:45 **Optimally-tuned range-separated hybrid functionals for accurately predicting valence-electron spectra of organic heterocycles** O.3 4
David A. Egger (1,2), Shira Weissman (1), Sivan Refaely-Abramson (1), Sahar Sharifzadeh (3), Matthias Dauth (4), Roi Baer (5), Stephan Kümmel (4), Jeffrey B. Neaton (3), Egbert Zojer (2), Leeor Kronik (1)
(1) Weizmann Institute of Science, Israel; (2) Graz University of Technology, Austria; (3) Lawrence Berkeley National Laboratory, USA; (4) University of Bayreuth, Germany; (5) Hebrew University of Jerusalem, Israel

15:00 **Ultrafast charge generation in a photoexcited polymer-fullerene blend: insights from real-time TDDFT** O.3 5
C.A. Rozzi (1), M. Amato, A. Rubio (2), and E. Molinari (1,3)
(1) Istituto Nanoscienze - CNR, Centro S3, 41125 Modena, Italy; (2) Nano-Bio Spectroscopy Group and ETSF Scientific Development Centre, Universidad del País Vasco, Centro de Física de Materiales CSIC-UPV/EHU-MPC and DIPC, 20018 San Sebastián, Spain; (3) Dipartimento di Scienze Fisiche, Matematiche e Informatiche, Università di Modena e Reggio Emilia, via Campi 213a, 41125 Modena, Italy.

15:15 **Ultrafast non-adiabatic excited states dynamics in organic semiconductors for photovoltaic applications: insights from TDDFT calculations.** O.3 6
Daniele Fazzi, Mario Barbatti, Walter Thiel
Max-Planck-Institut für Kohlenforschung, Kaiser-Wilhelm-Platz 1, D-45470 Mülheim an der Ruhr.

15:30 **Ab initio Simulation of Optical Limiting: The Case of Metal-Free Phthalocyanine** O.3 7
Caterina Cocchi (1,2), Deborah Prezzi (1), Alice Ruini (1,3), Elisa Molinari (1,3), Carlo A. Rozzi (1)
(1) Centro S3, CNR-Istituto Nanoscienze, Via Campi 213A, I-41125 Modena, Italy; (2) Humboldt-Universität zu Berlin, Institut für Physik und IRIS Adlershof, Zum Grossen Windkanal 6, 12489 Berlin, Germany; (3) Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Università di Modena e Reggio Emilia, I-41125 Modena, Italy

15:45 **Coffee Break**

Electronic Structure of Molecular Solids : Elisa Molinari

16:15 **Solid-state molecular packing and the fundamental physical processes in organic electronic devices: Insight from quantum-chemical approaches** O.4 1
Chad Risko
Georgia Institute of Technology

16:45 **Gap renormalization of molecular crystals from density-functional theory** O.4 2
Sivan Refaely-Abramson (1), Sahar Sharifzadeh (2), Manish Jain (3), Roi Baer (4), Jeffrey B. Neaton (2), Leeor Kronik (1)
(1) Department of Materials and Interfaces, Weizmann Institute of Science, Rehovoth, Israel; (2) Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, California, USA; (3) Department of Physics, Indian Institute of Science, Bangalore, India; (4) Fritz Haber Center for Molecular Dynamics, Institute of Chemistry, Hebrew University, Jerusalem, Israel

17:00 **The electronic structure of quinacridone: Optimally tuned range-separated hybrid funtionals vs. GW results** **O.4 3**
Daniel Lueftner (1), Sivan Refaely-Abramson (2), Michael Pachler (1), Michael G. Ramsey (1), Leeor Kronik (2), Peter Puschnig (1)
(1) Institute of physics, University of Graz, Austria; (2) Department of Materials and Interfaces, Weizmann Institute of Science, Israel

17:15 **Break**

Modelling Charge Transfer and Charge-Transfer Excitations : Clemence Corminboeuf

17:30 **On the role of charge transfer excitations in mediating triplet diffusion, singlet fission and dissociation in organic materials** **O.5 1**
David Beljonne
Chemistry of Novel Materials University of Mons Place du Parc, 20 B-7000 Mons, Belgium

18:00 **Charge transfer states in organic photovoltaic cells: Comparison between electrical characterization, spectroscopy, and DFT calculations** **O.5 2**
Reinhard Scholz, Till Jägeler-Hoheisel, Johannes Widmer, Christian Koerner, Karl Leo
Institut für Angewandte Photophysik, Technische Universität Dresden, George-Bähr-Str. 1, D-01069 Dresden, Germany

18:15 **On the room temperature ferroelectricity of hydrogen-bonded charge transfer crystals** **O.5 3**
Gabriele D'Avino and Matthieu J. Verstraete
Université de Liège, Institut de Physique, Allée du 6 Août, 17 Sart-Tilman, B-4000 Liège, Belgium

27 May 2014

Modelling Interfaces I : Alice Ruini

09:00 **Modelling adsorption and assembly of molecules on ionic substrates** **O.6 1**
David Gao, Matthew Watkins, Alexander Shluger
Department of Physics and Astronomy, University College London, UK

09:30 **Unraveling the charge-transfer mechanism at metal/insulator/organic semiconductor interfaces** **O.6 2**
Oliver T. Hofmann (1), Viktor Atalla (1), Georg Heimel (2), Patrick Rinke (1), and Matthias Scheffler (1)
(1) Fritz-Haber-Institut der Max-Planck-Gesellschaft, Faradayweg 4-6, 14195 Berlin, Germany; (2) Institut für Physik, Humboldt-Universität zu Berlin, Newtonstr. 15, D-12489 Berlin, Germany

09:45 **The role of van der Waals interactions for bonding at interfaces between organic semiconductors and coinage metal surfaces** **O.6 3**
Elisabeth Wruss (1), David A. Egger (1), Yuli Huang (2,3), Tomas Bučko (4,5,6), Wissam A. Saidi (7), Satoshi Kera (3), Egbert Zojer (1)
(1) Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria; (2) Department of Physics, National University of Singapore, 2 Science Drive 3, 117542, Singapore; (3) Graduate School of Advanced Integration Science, Chiba University, 1-33 Yayoi-cho, Inage-ku, Chiba 263-8522, Japan; (4) Department of Physical and Theoretical Chemistry, Faculty of Natural Sciences, Comenius University, Mlynska Dolina, SK-84215 Bratislava, Slovakia; (5) Slovak Academy of Sciences, Institute of Inorganic Chemistry, Dubravska cesta 9, SK-84236 Bratislava, Slovakia; (6) Faculty of Physics, University of Vienna, Sensengasse 8/12, 1090 Vienna, Austria; (7) Department of Chemical and Petroleum Engineering, University of Pittsburgh, 1249 Benedum Hall, Pittsburgh, PA 15261, U.S.A.

10:00 **Coffee Break**

Modelling Charge Transport I : Hiroyuki Ishii

10:30 **Charge transport and dynamical disorder in organic materials** **O.7 1**
Gianaurelio Cuniberti Frank Ortmann Sebastian Radke
Institute for Materials Science, Max Bergmann Center of Biomaterials, and Center for Advancing Electronics Dresden, TU Dresden, 01062 Dresden, Germany

11:00 **Disorder and carrier mobility in organic semiconductors** **O.7 2**
Jacob Gavartin, Matthew Halls
Schrodinger Inc.

11:15 **Interplay between dynamic and static disorder in organic semiconductors** **O.7 3**
S. Ciuchi (1), S. Fratini (2)
(1) Dipartimento di Scienze Fisiche e Chimiche Universita` dell'Aquila, L'Aquila, Italy; (2) Inst. NEEL, F-38042 Grenoble, France

11:30 **Design rules for organic semiconductors for optoelectronic applications** **O.7 4**
Denis Andrienko
Max Planck Institute for Polymer Research

12:00 **Lunch Break**

Modelling Charge Transport II : Gianaurelio Cuniberti

13:30 **Large-scale charge transport simulation of disordered organic semiconductors: role of molecular vibrations, static disorder and polaron formations** **O.8 1**
Hiroyuki Ishii (1), Nobuhiko Kobayashi (2), Kenji Hirose (3)
(1) University of Tsukuba and JST-PRESTO; (2) University of Tsukuba; (3) NEC

14:00 **Wave packet dynamical calculations for complex sp2 carbon superlattices** **O.8 2**
P. Vancsó (1,4), G. I. Márk (1,4), D. Kvashnin (2), V. A. Demin (2), L. Chernozatonskii (2), Ph. Lambin (3), A. Mayer (3) and L. P. Biró (1,4)
(1) Institute of Technical Physics and Materials Science, Research Centre for Natural Sciences, PO Box 49, H-1525 Budapest, Hungary, www.nanotechnology.hu; (2) N.M.Emanuel Institute of Biochemical Physics, Russian Academy of Sciences (IBCP), 4 Kosygin St., Moscow, 119991, Russian Ferderation; (3) Department of Physics of Matter and Radiation, University of Namur (FUNDP) 61, Rue de Bruxelles, B-5000 Namur, Belgium; (4) Korean-Hungarian Joint Laboratory for Nanosciences, PO Box 49, H-1525 Budapest, Hungary

14:15 **Atomic-scale modelling of the metal-organic interface** **O.8 3**
Kurt Stokbro, Anders Blom, and Soren Smidstrup
QuantumWise A/S, Lerso Parkalle 107, 2100 Copenhagen, Denmark

Modelling Interfaces II : Alexandre Tkatchenko

14:45 **Forces and Dynamics in Aromatic Overlayers on Metal Surfaces** **O.9 1**
Kristen A. Fichthorn, Shafat Mubin
Department of Chemical Engineering; Department of Physics

15:15 **Fermi Level Pinning and Orbital Polarization Effects in Functional Molecular Junctions: The Role of Metal Induced Gap States** **O.9 2**
Jérôme Cornil, Victor Geskin, and Colin Van Dyck
University of Mons Laboratory for Chemistry of Novel Materials

15:30 **Impact of collective electrostatic effects on transport through molecular junctions** **O.9 3**
Veronika Obersteiner (1) , David A. Egger (1) , Georg Heimel (2), Egbert Zojer (1)
(1) Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria; (2) Institut für Physik, Humboldt-Universität zu Berlin, Brook-Taylor-Straße 6, 12489 Berlin, Germany;

15:45 **Coffee Break**

Posters : Heimel, Zojer, Kronik

16:15 **Nonadiabatic molecular dynamics modeling of the intrachain charge transport in conjugated diketopyrrolo-pyrrole (DPP) polymers** **O/P10 1**
Xing Gao, Hua Geng, Qian Peng, Yuanping Yi, Dong Wang, Zhigang Shuai
MOE Key Laboratory of Organic OptoElectronics and Molecular Engineering, Department of Chemistry, Tsinghua University, Beijing, 100084, P. R. China; Key Laboratory of Organic Solids, Beijing National Laboratory for Molecular Science (BNLMS), Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100190, P. R. China

16:15 **Understanding Lattice Strain Controlled Charge Transport in Organic Semiconductors: A Computational Study** **O/P10 2**
Xiaoyan Zheng, Dong Wang*, Zhigang Shuai*
Department of Chemistry, Tsinghua University

16:15 **Electron-phonon couplings and charge carrier transport in two-dimensional carbon materials from first-principles** **O/P10 3**
Jinyang Xi, Dong Wang, Zhigang Shuai
Department of Chemistry, Tsinghua University

16:15 **A theoretical XPS study of ZnO surface structures** **O/P10 4**
Navid Abedi , Georg Heimel
Institut für Physik, Humboldt-Universität zu Berlin

16:15 **High order of nongeminate recombination in organic bulk heterojunction solar cells** **O/P10 5**
Jedrzej Szmytkowski
Faculty of Applied Physics and Mathematics, Gdansk University of Technology, Gdansk, Poland

16:15 **How surface reconstructions, coverage, tail-group substitution and, van der Waals interactions affect the electronic and structural properties of self-assembled monolayers** **O/P10 6**
Elisabeth Verwüster, David A. Egger and Egbert Zojer
Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria

16:15 **Tuning the electronic properties of graphene through collective electrostatic effects** **O/P10 7**
Gernot J. Kraberger, David A. Egger, Egbert Zojer
Institute of Solid State Physics, Petersgasse 16, A-8010 Graz, Austria

16:15 **Mechanical properties of pristine and mono-substituted hexa-n-dodecyl-hexa-peri-hexabenzocoronene (HBC-C12) crystals: A Molecular Dynamics study** **O/P10 8**
O. G. Ziogos, D. N. Theodorou
Department of Chemical Engineering, National Technical University of Athens, 15780 Athens, Greece

16:15 **From ideal models to simulating experimental conditions: TDDFT with range separated hybrid functionals for low-gap systems under the influence of solvation** **O/P10 9**
Thiago B. de Queiroz, Stephan Kümmel
Theoretical Physics IV, University of Bayreuth

16:15 **Optical Spectra from Molecules to Solids: Insight from Many-Body Perturbation Theory** **O/P10 10**
Caterina Cocchi, Claudia Draxl
Humboldt-Universität zu Berlin, Institut für Physik and IRIS Adlershof, Berlin, Germany

16:15 **Simulating the electronic and structural properties of self-assembled monolayers with embedded dipoles** **O/P10 11**
Iris Hehn (1), Manuel Vieider (1), Otello Maria Roscioni (2), Luca Muccioli (2), David Egger (1), Swen Schuster (3), Michael Zharnikov (3), Claudio Zannoni (2), and Egbert Zojer (1)
(1) Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria; (2) Dipartimento di Chimica Industriale “Toso Montanari”, Università di Bologna; Viale del Risorgimento, 4, 40136 Bologna, Italy; (3) Applied Physical Chemistry, Heidelberg University, Im Neuenheimer Feld 253, 69120, Heidelberg, Germany

16:15 **First-principles study on ZnO surface structures** **O/P10 12**
Philipp Herrmann, Georg Heimel
Institut für Physik, Humboldt Universität zu Berlin

16:15 **Theoretical study of kinetics isomerization of polyacetylene with substituents of different strengths of donor and acceptor functional groups** **O/P10 13**
Bitam Said, Abdelbaki Djebaili
Faculty of Sciences, University of Batna, -05000, Algeria

16:15 **Mesoscopic modelling of Organic Solar Cells** **O/P10 14**
H.M.C. Barbosa, H.M.G. Correia, M.M.D. Ramos, L. Marques
Centre/Department of Physics, University of Minho Campus de Gualtar, 4710-057 Braga, Portugal

16:15 **Monte Carlo study of transient currents in organic semiconductors** **O/P10 15**
Haoyuan Li□Lian Duan* and Yong Qiu
Key Lab of Organic Optoelectronics & Molecular Engineering of Ministry of Education, Department of Chemistry, Tsinghua University, Beijing, 100084, China

16:15 **Trap effect in Carrier Transport of Organic Disorder Semi-conductors: From Shallow Trapping to Deep Trapping** **O/P10 16**
Chen Li, Lian Duan*, Haoyuan Li, Yongduo Sun, Yong Qiu
Key Lab of Organic Optoelectronics & Molecular Engineering of Ministry of Education, Department of Chemistry, Tsinghua University, Beijing, 100084, China

Multi-Scale Modelling : Zoltan Soos

09:00 **Multiscale Quantum Mechanics/Electromagnetics Method and Its Applications** O.11 1
Lingyi Meng
Collaborative Innovation Center of Chemistry for Energy Materials, Xiamen University, Xiamen 361005, P.R. China

09:30 **A multi-scale approach to the electronic structure of doped-semiconductor surfaces** O.11 2
Ofer Sinai (1), Oliver T. Hofmann (2), Georg Heimel (3), Patrick Rinke (2), Matthias Scheffler (2), Leeor Kronik (1)
(1) Department of Materials and Interfaces, Weizmann Institute of Science, Herzl 234, Rehovoth 7610001, Israel; (2) Fritz-Haber-Institut der Max-Planck-Gesellschaft, Faradayweg 4-6, D-14195 Berlin-Dahlem, Germany; (3) Institut für Physik, Humboldt-Universität zu Berlin, Newtonstr. 15, D-12489 Berlin, Germany

09:45 **Designing phthalocyanine «spacers» in nanocrystal superlattice arrays** O.11 3
Binit Lukose, Santoshkalyan Rayadhurgam and Paulette Clancy
School of Chemical & Biomolecular Engr., Cornell University Ithaca, NY 14853, U.S.A.

10:00 **Coffee Break**

Drift-Diffusion Simulations : Reinder Coehoorn

10:30 **Drift-diffusion modelling of organic solar cells: 1D and beyond** O.12 1
L.J.A. Koster
Zernike Institute for Advanced Materials University of Groningen Nijenborgh 4 9747 AG Groningen

11:00 **Impact of materials properties and device architecture on the contact resistance of organic thin film transistors: Insights from drift-diffusion modeling** O.12 2
Manfred Gruber (1), Egbert Zojer (2), Ferdinand Schuerrer (1), Karin Zojer (1)
(1) Graz University of Technology, Institute of Theoretical and Computational Physics, 8010 Graz, Austria; (2) Graz University of Technology, Institute of Solid State Physics, 8010 Graz, Austria

11:15 **Simulation of current flow in vertical organic triode structures** O.12 3
K. Gärtner (1), H. Doan (1), Th. Koprucki (1), A. Glitzky (1), A. Fischer (2), K. Leo (2), R. Scholz (2), B. Lüssem (3)
(1) Weierstrass Institute Berlin, Germany; (2) IAPP TU Dresden, Germany, (3) Kent State University, Ohio, USA

11:30 **Mathematical modeling of bio-hybrid devices: towards polymeric artificial retina** O.12 4
Matteo Porro (1), Sebastiano Bellani (2), Nicola Martino (2), Maria Rosa Antognazza (3), Riccardo Sacco (1), Guglielmo Lanzani (2)
(1) Dipartimento di Matematica, Politecnico di Milano - Center for Nano Science and Technology @PoliMi, Istituto Italiano di Tecnologia; (2) Dipartimento di Fisica, Politecnico di Milano - Center for Nano Science and Technology @PoliMi, Istituto Italiano di Tecnologia; (3) Center for Nano Science and Technology @PoliMi, Istituto Italiano di Tecnologia

11:45 **Influence of morphology on the efficiency of organic solar cells** O.12 5
D. Bartesaghi (1,2), M. Turbiez (3), L. J. A. K. Koster (1)
(1) Photophysics and Optoelectronics, Zernike Institute for Advanced materials, University of Groningen, Nijenborgh 4, NL-9747AG Groningen, The Netherlands; (2) Dutch Polymer Institute, P. O. Box 902, 5600AX Eindhoven, The Netherlands; (3) M. Turbiez: BASF Schweiz AG, Schwarzwaldallee 215, CH-4002 Basel, Switzerland

12:00 **Lunch Break**

Kinetic Monte-Carlo Simulations : Jan-Anton Koster

13:30 **Application of molecular-scale electronic and excitonic simulation methods to OLED layer stack development** O.13 1
R. Coehoorn (1,2), H. van Eersel (2,1), P.A. Bobbert (2,1) and R.A.J. Janssen (2,1)
(1) Philips Research Eindhoven, High Tech Campus 4, 5656 AE Eindhoven, The Netherlands; (2) Eindhoven University of Technology, P.O. 513, 5600 MB Eindhoven, The Netherlands

14:00 **Modeling the Absorption and Emission Spectra of Charge Transfer States in Organic Donor-Acceptor Blends** O.13 2
Michael C. Heiber (1), Vladimir Dyakonov (1,2), Carsten Deibel (1)
(1) Experimental Physics VI, Julius-Maximilians-University of Würzburg, 97074 Würzburg, Germany; (2) Bavarian Center for Applied Energy Research (ZAE Bayern), 97074 Würzburg, Germany

14:15 **Efficiency-limiting processes in organic light-emitting diodes: a kinetic Monte Carlo approach** O.13 3
Harm van Eersel (1,2), Peter Bobbert (1), René Janssen (1), Reinder Coehoorn (2,1)
(1) Eindhoven University of Technology; (2) Philips Research Eindhoven

14:30 **Break**

14:45 **Computational Prediction of Nanoscale Organic Solar Cell Performance from Morphology** O.13 4
Geoffrey Hutchison
Department of Chemistry University of Pittsburgh

15:15 **Effects of dynamic disorder on the electronic structure of crystalline poly-3-hexylthiophene** O.13 5
Marko Mladenovic, Nenad Vukmirovic
Scientific Computing Laboratory, Institute of Physics Belgrade, University of Belgrade

15:30 **Massively parallel kinetic Monte Carlo simulations of charge carrier transport in organic semiconductors** O.13 6
Niels J. van der Kaap, L. Jan Anton Koster
Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4 9747, AG, Groningen, The Netherlands

15:45 **Coffee Break**

Molecular-Dynamics Modelling : Paulette Clancy

09:00 **Simulating the molecular organization of organic materials and its effects on charge transport** — O.14 1
Claudio Zannoni
Dipartimento di Chimica Industriale “Toso Montanari”, Università di Bologna, Viale Risorgimento 4, 40136 Bologna, Italy.

09:30 **Development of an efficient non-adiabatic molecular dynamics method for the simulation of charge transport in organic semiconductors** — O.14 2
J. Spencer (1), F Gajdos (1), M Dupuis (2), J Blumberger (1)
(1) University College London, London, UK; (2) Pacific Northwest National Laboratory, Richland, USA

09:45 **Flory-Huggins theory applied to atomistic study of oligo(3-alkylthiophene)s solubility in tetrahydrofuran** — O.14 3
Claudia Caddeo (1,2), Alessandro Mattoni (2)
(1) Universita degli Studi di Cagliari, Dipartimento di Fisica, Cittadella Universitaria, 09042 Monserrato; (2) Istituto Officina dei Materiali del Consiglio Nazionale delle Ricerche (CNR-IOM), c/o Dipartimento di Fisica, Cittadella Universitaria, 09042 Monserrato

10:00 **Coffee Break**

Macroscopic and Electrostatic Models : Georg Heimel

10:30 **Modeling dipole-field sums and dielectric properties of organic molecular thin films as crystalline arrays of polarizable points** — O.15 1
Davide Vanzo, Benjamin J. Topham and Zoltán G. Soos
Department of Chemistry, Princeton University, Princeton, New Jersey 08544, USA

11:00 **Optical simulation of organic solar cell with graphene electrodes** — O.15 2
G. Ulisse, F. Brunetti
Department of Electronic Engineering, University of Rome «Tor Vergata»

11:15 **Liquid-Phase De-mixing in Functional Blends for Organic Electronics** — O.15 3
Jasper J. Michels (1), Ellen Moons (2), Natalie Stingelin (3), Gerwin H. Gelinck (1), René A. J. Janssen (4), Dago de Leeuw (5), Paul W. M. Blom (5)
(1) Holst Centre/TNO, High Tech Campus 31, 5656 AE Eindhoven, The Netherlands; (2) Department of Engineering and Physics, Karlstad Univeristy, SE-65188 Karlstad, Sweden; (3) Department of Materials and Centre for Plastic Electronics, Imperial College, SW7 2AZ London, UK; (4) Molecular Materials and Nanosystems, Eindhoven University of Technology, 5612 AZ Eindhoven, The Netherlands; (5) Max Planck Institut für Polymerforschung, 55128 Mainz, Germany

11:30 **PSPICE model for organic electrochemical transistor and inorganic electrochemical thin film transistor** — O.15 4
David Westerberg, Axel Lagerlöf, Peter Andersson Ersman, David Nilsson
Acreo Swesish ICT AB; EU FP7 project SmartEC

11:45 **Modelling the electronic and macromolecular structure of molecular diode devices** — O.15 5
Damien Thompson
Dept of Physics & Energy and Materials & Surface Science Institute, University of Limerick

12:00 **Lunch Break**

E-MRS 2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM P

Carbon materials: surface chemistry and biomedical applications

Symposium Organizers:

Nianjun Yang, University of Siegen, Germany

Jean-Charles Arnault, CEA LIST, Gif sur Yvette, France

Zhuang Liu, Soochow University, Jiangsu, China

Olga A. Shenderova, International Technology Center, Raleigh, USA

Naoki Komatsu, Shiga University of Medical Science, Otsu, Japan

Published in Physica Status Solidi (a).

26 May 2014

09:05 **opening and welcome**

Surface Chemistry : Nianjun Yang

09:15 **Simulation of Diamond Surface Chemistry - Reactivity and Properties** **P.S1 1**
Karin Larsson
Dept. Chemistry-Ångström Laboratory Uppsala University, Sweden

09:45 **Human osteoblast-like cells in cultures on nanocarbon-based materials for potential bone tissue engineering** **P.S1 2**
Lucie Bacakova 1, Jiri Vacik 2, Stanislav Blazewicz 3, Alexander Kromka 4
1 Institute of Physiology, Academy of Sciences of the Czech Republic, Videnska 1083, 14220 Prague 4-Krc, Czech Republic; 2 Nuclear Physics Institute, Academy of Sciences of the Czech Republic, 250 68 Rez near Prague, Czech Republic;
3 AGH University of Science and Technology, Faculty of Materials Science and Ceramics, Department of Biomaterials, Al. Mickiewicza 30, 30-059 Cracow, Poland;
4 Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnicka 10, 162 53 Prague 6, Czech Republic.

10:15 **Break**

Nanodiamond I : Lucie Bacakova

10:45 **Nanodiamond Particle Purification and Characterisation** **P.S2 1**
Oliver A Williams
School of Physics and Astronomy, Cardiff University, Queen?s Buildings, The Parade, Cardiff CF24 3AA, United Kingdom.

11:15 **Surface graphitization of ozone-treated detonation nanodiamonds** **P.S2 2**
T. Petit1, H. A. Girard1, C. Gesset1, M. Combis-Schlumberger1, O. Shenderova2, A. Koscheev3, I. Vlasov4, M. Sennour5, J. C. Arnault1
1CEA, LIST, Diamond Sensors Laboratory, France 2 International Technology Center, USA 3Karpov Institute of Physical Chemistry, Moscow, Russia 4General Physics Institute, RAS, Moscow, Russia 5Mines Paris, Paristech, France

11:30 **Solid state NMR: a valuable tool of investigation of functionalized nanodiamonds** **P.S2 3**
Danielle Laurencin, Charlène Presti, Johan Alauzun, Hubert Mutin
Institut Charles Gerhardt, Université de Montpellier 2, France

11:45 **Nanodiamond Additives for Cold Water Cleaning** **P.S2 4**
Haitao Ye
School of Engineering and Applied Science, Aston University, Birmingham, B4 7ET United kingdom

12:00 **Lunch**

Nanomedecine : Oliver Williams

13:30 **Application of Carbon Nanohorns in Nanomedicine** **P.S3 1**
Minfang Zhang1, Mei Yang1, Yoshio Tahara1, Sumio Iijima1 ,2, Masako Yudaska1
1National Institute of Advanced Industrial Science and Technology (AIST), Nanotube Research Center, Tsukuba, 305-8565, Japan; 2 Faculty of Science and Technology, Meijo University, Shiogamaguchi, Nagoya, 468-8502, Japan

14:00 **Binding interactions of small molecules to surface of carbon nanohorns as a route to drug delivery** **P.S3 2**
Marina Massaro, David T Hinds, Frederico Baptista, Andrew Barker and Susan J. Quinn
School of Chemistry and Chemical Biology, University College Dublin, Ireland

14:15 **Adhesion and Cytotoxicity of L929 mice fibroblasts and β-Thromboglobulin in contact with plain and porous a-C:H coatings** **P.S3 3**
Jan Heeg, Andreas Lampka, and Marion Wienecke
Hochschule Wismar University of Applied Sciences Technology, Business and Design PF 1210, 23952 Wismar, Germany

14:30 **Functionality of amorphous carbon nitroxide micropattered thin films in biomolecular and cellular devices** **P.S3 4**
M. Manso Silvan1,2, MA Parracino3, V. Spampinato3, P. Colpo3, G. Ceccone3, P. Pellacani1,2, A. Valsesia2, F. Rossi3
1Dept. Física Aplicada, Universidad Autónoma de Madrid, Madrid, Spain 2Plasmore Srl. Ranco (Va), Italy 3 European Commission, Joint Research Centre, Ispra (Va), Italy

14:45 **Graphene oxide and its derivatives selectively regulate the cell growth and cell cycle** **P.S3 5**
Yinchan Luo, Yonghui Wang, Ting Wang, Jia Tang, Xiaofang Tan, Qian Chen, Zhuang Liu, Rui Peng
Institute of Functional Nano & Soft Materials (FUNSOM) and Jiangsu Key Laboratory for Carbon-Based Functional Materials and Devices, Soochow University, Suzhou, Jiangsu, P. R. China

15:00 **Break**

Carbon dots I : Minfang Zhang

15:30 **Carbon dots: chemical synthesis and sensing applications** **P.S4 1**
Yuwu Chi, Chen Zhou, Yongqiang Dong, Ruixue Wang, Xiaomei Lin
Department of Chemistry, Fuzhou University

16:00 **Carbon based endogenous nanoparticles in biological fluids** **P.S4 2**
A.Kuznetsov1, A.Frorip1, J.Kozlova2, M.Ots-Rosenberg2
1 - AS Ldiamon, Tartu Science Park, 2 - Tartu University

16:15 **Solution-phase synthesis and characterisation of highly luminescent carbon quantum dots for optoelectronic and bioimaging applications** **P.S4 3**
Keith Linehan, Hugh Doyle
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

16:30 **Hole in One: the First Foolproof Evidence of a 1:1 Carbon-Nanoparticle/Protein Adduct** **P.S4 4**
Matteo Calvaresi, Francesco Zerbetto
Dipartimento di Chimica “G. Ciamician”, Alma Mater Studiorum Università di Bologna, Via F. Selmi 2, 40126 Bologna, Italy

16:45 **Break**

NV centers : Jean-Charles Arnault

17:15 **Bioimaging and quantum sensing using nitrogen-vacancy centers in nanodiamonds** **P.S5 1**
Huan-Cheng Chang
Institute of Atomic and Molecular Science, Academia Sinica, Taiwan

17:45 **The role of surface termination on the luminescence of the NV defect in diamond.** **P.S5 2**
Moloud Kaviani 1, Bálint Aradi 1, Thomas Frauenheim 1, Peter Deák 1, and Adam Gali 2,3
Bremen Center for Comp. Mater. Sci., University of 1. Bremen, P.O. Box 330440, D-28334 Bremen, Germany; 2. Wigner Research Centre for Physics, Hungarian Academy of Sciences, P.O. Box 49, H-1525, Hungary; 3. Department of Atomic Physics, Budapest University of Technology, Budafoki út 8., H-1111 Budapest, Hungary

18:00 **SELECTIVE FORMATION OF SiV COLOR CENTERS DURING the CVD GROWTH of DIAMOND** **P.S5 3**
Maria Letizia Terranova
Department of Chemical Science and Technology, University di Rome ‘Tor Vergata’, Via della Ricerca Scientifica, 00133 Rome, Italy

27 May 2014

Simulation : Karin Larsson

08:30 **Statisitical Modeling of Nanodiamond Ensembles** **P.S6 1**
Amanda S. Barnard
CSIRO Materials Science and Engineering

09:00 **Necessity of a New Carbon Raman Nomenclature.** **P.S6 2**
Stephane NEUVILLE
TCE

09:15 **Interaction of tetrakis-Schiff base compounds with graphene and carbon nanotubes from DFT: implications for charge transfer** **P.S6 3**
Sergey V. Pyrlin[1]; Nicholas D.M. Hine [2]; Marta M.D. Ramos [1]; Martha V. Escárcega-Bobadilla [3,4], Gustavo A. Zelada-Guillén [4].
1. Group of Computational and Theoretical Physics, Center of Physics and Department of Physics, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal; 2. Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, United Kingdom; 3. Institute of Chemical Research of Catalonia (ICIQ), Av. Països Catalans 16, 43007 - Tarragona, Spain; 4. Polymaterials AG. Innovapark 20, 87600 Kaufbeuren, Germany.

09:30 **Low-dose oxygen and nitrogen functionalisation of graphene: insights from simulation and experiment** **P.S6 4**
Peter Brommer, Alexander Marsden, Neil Wilson, Gavin Bell, David Quigley
Department of Physics, University of Warwick, Coventry, UK

09:45 **Kinetics of bias-assisted HF CVD diamond nucleation monitored by surface spectroscopy** **P.S6 5**
M. M. Larijani ($) and F. Le Normand (1, *)
1 : ICube/MaCEPV, CNRS/University of Strasbourg, FRANCE $: Present address : Nuclear Research Center for Agriculture and Medicine, Atomic Energy Organization of Iran, P.O.Box: 31485-498, KARAJ, IRAN, e-Mail: mmojtahedzadeh@nrcam.org * presenting author

10:00 **Break**

Fullerene : Amanda Barnard

10:30 **Protective Effect of C70-Carboxyfullerene against Oxidative-Induced Stress on Postmitotic Muscle Cells** **P.S7 1**
Chunru Wang *, Qiaoling Liu, Junpeng Zheng, Mirong Guan, Xiaohong Fang, and Chunying Shu
Institute of Chemistry, Chinese Academy of Sciences, 2 Zhongguancun Beiyijie, Beijing 100190, P.R. China

11:00 **Design of water soluble fullerene derivatives and their antiviral properties** **P.S7 2**
Pavel A. Troshin (1), Ekaterina A. Khakina (1), A. A. Kushch (2) and Jan Balzarini (3)
(1) Institute for Problems of Chemical Physics, Academician Semenov av. 1, Chernogolovka, Moscow region, 142432, Russia, troshin@icp.ac.ru (2) D.I. Ivanovsky Institute of Virology of the Ministry of Health and Social Development of the Russian Federation, Moscow, Russia. (3) Rega Institute for Medical Research, Minderbroedersstraat 10, B-3000, Leuven, Belgium

11:30 **Formation of the first Derivatives of Praseodymium-Containing Metallofullerenes via Regioselective Carbene Addition to Pr@C2v(9)-C82** **P.S7 3**
Yongfu Lian*,Qin Zhou, Hui Li, Yan Wang
School of Chemistry and Materials Science Heilongjiang University, Harbin 150080, (China)

11:45 **Lunch**

Graphene I : Chunru Wang

13:30 **The exfoliation of graphene in liquids by electrochemical, chemical and sonication-assisted techniques; a nano-scale study.** **P.S8 1**
Zhen Yuan Xia,1 Sergio Pezzini,2 Emanuele Treossi,1,3 Giuliano Giambastiani,4 Franco Corticelli,5 Vittorio Morandi,5 Alberto Zanelli,1 Vittorio Bellani,2 Vincenzo Palermo1*
1 Istituto per la Sintesi Organica e la Fotoreattività - Consiglio Nazionale delle Ricerche, via Gobetti 101, 40129 Bologna (Italy); 2 Dipartimento di Fisica and CNISM, Universitá degli Studi di Pavia, via Bassi 6, 27100 Pavia – Italy; 3 Laboratorio MIST.E-R Bologna, via Gobetti 101, 40129 Bologna (Italy); 4 Istituto di Chimica dei Composti OrganoMetallici - Consiglio Nazionale delle Ricerche, via Madonna del Piano 10, 50019 Sesto Fiorentino (Italy); 5 Istituto per la Microelettronica e Microsistemi - Consiglio Nazionale delle Ricerche, via Gobetti 101, 40129 Bologna (Italy);

14:00 **Nitrogen-doping processes of graphene by a versatile plasma-based method** **P.S8 3**
Yu-Pu Lin, Younal Ksari, Jai Prakash, Luca Giovanelli, Jean-Marc Themlin
Aix-Marseille Université, CNRS, IM2NP, UMR 7334, 13397 Marseille, France

14:15 **A green and high-yield synthesis of graphene nanoribbon** **P.S8 2**
Yan-Sheng Li 1 , Wei-Hung Chiang
Department of Chemical Engineering, National Taiwan University of Science and Technology

14:30 **Graphene/Metal Nanoparticle/Biomolecule Plasmonic Multifunctional Hybrid Platforms** **P.S8 4**
Maria Losurdo, Tong-Ho Kim, Maria M. Giangregorio, Giuseppe V Bianco, Pio Capezzuto, April S. Brown, Giovanni Bruno
1 Institute of Inorganic Methodologies and of Plasmas, IMIP-CNR, via Orabona 4, 70126 Bari, Italy 2 Electrical Computer Engineering Department, Duke University, 27708 Durham, North Carolina, US

14:45 **Fabrication and characterization of ordered nanoporous graphene-coated alumina membranes for integrated filter-sensor applications** **P.S8 5**
Hualin Zhan, Morteza Aramesh and Jiri Cervenka
School of Physics, The University of Melbourne, VIC, Australia

15:00 **Probing interactions and charge transfer at the interfaces between organic molecules and graphene field effect transistors** **P.S8 6**
Jiri Cervenka,1 Nikolai Dontschuk,1 Akin Budi,2 Anton Tadich,3 Kevin Rietwyk,4 Alex Schenk,4 Mark Edmonds,5 Yuefeng Ying,6 Nikhil Medhekar,6 and Chris Pakes4
1 School of Physics, The University of Melbourne, Victoria 3010, Australia 2 Nano-Science Centre, University of Copenhagen, Denmark 3 Australian Synchrotron, 800 Clayton, Victoria 3168, Australia 4 Department of Physics, La Trobe University, Victoria 3086, Australia 5 Department of Physics, Monash University, Victoria 3800, Australia 6 Department of Materials Engineering, Monash University, Victoria 3800, Australia

15:15 **Discussion/Break**

Poster I : Daiwen Pang, Vincenzo Palermo

16:00 **Insulin Loaded Iron Magnetic Nanoparticles-Graphene Oxide Composites: Synthesis, Characterization and Application for in vivo delivery of insulin** **P. PI 1**
Kostiantyn Turcheniuk,1 Svitlana Railyan, 2, Manakamana Khanal, 1 Vladimir Zaitsev, 2 Alain Martoriati, 3 Katia Cailliau, 3 Jean-Francois Bodart, 3 Rabah Boukherroub, 1 Sabine Szunerits 1
1 Institut de Recherche Interdisciplinaire (IRI, USR CNRS 3078), Université Lille 1, Parc de la Haute Borne, 50 Avenue de Halley, BP 70478, 59658 Villeneuve d'Ascq, France; 2 Taras Shevchenko University, 60 Vladimirskaya str., Kiev, Ukraine; 3 4EA 4479, IFR 147, Université Lille 1, 59658 Villeneuve d'Ascq, France

16:00 **Influence of chemical treatment on the microstructure of nanographite** **P. PI 2**
I. Ovsiienko1, O. Lazarenko1, L. Matzui1, O. Brusilovets2, F. Le Normand3, A. Shames4
Kyiv National Taras Shevchenko University, Departments of Physics1 and chemistry2, Volodymyrska Str., 64, 03310 Kyiv, Ukraine 3Institut de Physique et Chimie des Matériaux, 23 rue du Loess BP 43, 67037 Strasbourg, France 4Department of Physics, Ben-Gurion University of the Negev, Be'er-Sheva, Israel

16:00 **Surface Functionalization of Detonation Nanodiamonds by Phosphorylation** **P. PI 3**
Charlene Presti, Johan G. Alauzun, Danielle Laurencin, P. Hubert Mutin
Institut C. Gerhardt – CMOS, Université Montpellier 2, France

16:00 **Synthesis of Pt-Pd bimetallic Nanoparticles Anchored on Graphene for Highly Active Methanol Electro-oxidation** **P. PI 4**
Yuting Zhang, Gang Chang*, Honghui Shu, Munetaka Oyama, Xiong Liu, and Yunbin He*
Ministry-of-Education Key Laboratory for the Green Preparation and Application of Functional Materials, Faculty of Materials Science and Engineering, Hubei University, No.368 Youyi Avenue, Wuchang, Wuhan 430062, China; Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Nishikyo-ku, Kyoto 615-8520, Japan

16:00 **Synthesis of Boron-doped Graphene with Hierarchical Microstructure: Application for Electrochemical Detection of Hydrogen Peroxide** **P. PI 5**
Min-Hsin Yeha, Hui-Min Chuanga, Ta-Jen Lia, Yow-Au Leua,b, Jiang-Jen Linb, Wei-Hung Chiangc* and Kuo-Chuan Hoa,b *
a Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan b Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan c Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan *Corresponding author: kcho@ntu.edu.tw

16:00 **Photoluminescence, chemiluminescence and electrochemiluminescence of hydrazide group modified graphene quantum dots** **P. PI 6**
Yongqiang Dong, Ruiping Dai, Tongqing Dong, Yuwu Chi*, Guonan Chen
MOE Key Laboratory of Analysis and Detection Technology for Food Safety, Fujian Provincial Key Laboratory of Analysis and Detection Technology for Food Safety, and Department of Chemistry, Fuzhou University, Fujian, 350108, China

16:00 **Highly dispersed Pt nanoclusters supported on graphene and its application in non-enzymatic glucose biosensor** **P. PI 7**
Gang Chang a*, Honghui Shu a, Kai Ji a, Munetaka Oyama b, Xunzhong Shang a, Xiong Liu a, Yunbin He a*
a) Ministry-of-Education Key Laboratory for the Green Preparation and Application of Functional Materials, Faculty of Materials Science and Engineering, Hubei University, No.368 Youyi Avenue, Wuchang, Wuhan 430062, China; b) Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Nishikyo-ku, Kyoto 615-8520, Japan

16:00 **CNT surface modification with the attachment of Si nanoparticles in thermal plasma jet** **P. PI 8**
Ye-seul Na, Sooseok Choi, and Dong-Wha Park*
Department of Chemistry & Chemical Engineering and Regional Innovation Center for Environmental Technology of Thermal Plasma (RIC-ETTP), Inha University, 100 Inha-ro, Nam-gu, Incheon 402-751, Republic of Korea

16:00 **The Effect of Irradiation on Electrical and Electrodynamic Properties of Nanocarbon-Epoxy Composites** **P. PI 9**
L. Matzui (a, *), L. Vovchenko (a) , O.Lazarenko (a), V. Oliynyk (a), V. Launetz (a), F. Antoni (b), D. Muller (b), F. Le Normand (b)
a) Kyiv National Shevchenko University, Departments of Physicsa, Volodymyrska Str., 64, 03310 Kyiv, Ukraine b) ICube/MaCEPV, CNRS, 23 rue du Loess BP20, 67037 Strasbourg, France

16:00 **Study of mechanical and antibacterial properties of Ag:DLC films** **P. PI 10**
P. Písařík 1,2,*, M. Jelínek 1,2, T. Kocourek 1,2, J. Mikšovký 1,2, J. Remsa 1,2, M. Zezulová 1,2, K. Jurek 2
1 Czech Technical University in Prague, Faculty of Biomedical Engineering, nam. Sitna 3105, 272 01 Kladno, Czech Republic 2 Institute of Physics ASCR v.v.i., Na Slovance 2, 182 21 Prague 8, Czech Republic * E-mail: petr.pisarik@fbmi.cvut.cz, tel.:+420 312 608 223, fax.: +420 312 608 204

16:00 **Functionalization of carbon-based nanomaterials for magnetic drug delivery applications** **P. PI 11**
S. Papazoglou1, S. Samothrakitis1, I. Theodorakos1, A. Ntziouni2, K. Kordatos2, A. Klinakis3, I. Zergioti1
1National Technical University of Athens, Physics Department, Iroon Polytehneiou 9, 15780 Zografou, Athens, Greece 2National Technical University of Athens, Department of Chemical Engineering, Iroon Polytehneiou 9, 15780 Zografou, Athens, Greece 3Biomedical Research Foundation Academy of Athens, 4 Soranou Ephessiou St., 115 27, Athens, Greece

16:00 **Control of protein adsorption at carbon surfaces using carbohydrate coatings** **P. PI 12**
Federico Zen, Thomas Duff, M. Daniela Angione, Ronan J. Cullen, James Behan, Eoin M. Scanlan,* Paula E. Colavita*
School of Chemistry, University of Dublin Trinity College, College Green, Dublin, Dublin D2, Ireland

16:00 **Covalent grafting of amorphous carbon nanopowders on Si(100) surface** **P. PI 13**
E. Smecca,1,2 A. Motta,1 G. Pellegrino,2 G. G. Condorelli1* * Corresponding Author: guido.condorelli@unict.it
1 Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR di Catania, V.le A. Doria 6 95125 Catania, Italy 2 CNR-IMM , Zona industriale, Strada VIII 5, 95121, Catania, Italy

16:00 **Theoretical studies of HCl, HBr and HF adsorption on boron- and nitrogen-doped single-walled carbon nanotubes** **P. PI 14**
Borysiuk V.I., Gubanov V.A., Nedilko S.G., Hizhnyi Yu.A.
Taras Shevchenko National University of Kyiv, Volodymyrska Street 64/13, 01601, Kyiv, Ukraine

16:00 **Electrochemical Generation of Graphene Sheets with low oxygen content** **P. PI 15**
Man Zhao,*,1,2 Rene Hoffmann, 2 Nianjun Yang, 2 Fang Gao, 2 XiangyunGuo,1Christoph E. Nebel2
Institute of Coal Chemistry (ICC), Chinese Academy of Sciences (CAS), Taiyuan 030001, China; 2 Fraunhofer Institute for Applied Solid State Physics (IAF), Freiburg 79108, Germany

16:00 **NITROGEN-DOPED GRAPHENE BY PLASMA AND THERMAL TREATMENT** **P. PI 16**
Catalin Ceaus(1), Adriana Balan(1), *Ioan Stamatin(1), Alexandru Marin(2), Loredana Preda(2) Petre Osiceanu(2)
(1)University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Atomistilor 405, P.O 38, Bucharest-Magurele, Romania, 077125 (2)Institute of Physical Chemistry, Romanian Academy of Sciences, Bucharest *corresponding author: istarom@3nanosae.org

16:00 **Preparation and properties of fused silica glass coated by boron doped diamond nanostructures** **P. PI 17**
R. Bogdanowicz1, M. Sawczak2, P. Zieba3, M. Sobaszek1, A. Cirocka3, T. Ossowski3
1 Department of Metrology and Optoelectronics, Gdansk University of Technology, 11/12 Narutowicza Str., 80-233 Gdansk, Poland; 2 Polish Academy of Sciences, The Szewalski Institute of Fluid-Flow Machinery, 14 Fiszera Str., 80-231 Gdańsk, Poland; 3 Analytical Chemistry, Faculty of Chemistry, University of Gdansk, Wita Stwosza 63 Str., 80-308 Gdansk, Poland

16:00 **Screen printed electrodes based on metallo-porphyrine for evaluation of biogenic amines** **P. PI 18**
S.-M. Iordache(1), A.-M. Iordache(1,*), I. Stamatin(1), A. A. Ciucu(2), E. Fagadar-Cosma(3), R. Cristescu(4)
(1) 3Nano-SAE Research Centre, University of Bucharest, PO Box MG-38, Bucharest-Magurele, Romania (2) University of Bucharest, Department of Analytical Chemistry, Bucharest, ROMANIA (3) Institute of Chemistry Timisoara of Romanian Academy, Department of Organic Chemistry, 300223, Timisoara, Romania
(4) National Institute for Lasers, Plasma & Radiation Physics, Lasers Department, P.O. Box MG-36, Bucharest-Magurele, Romania *Corresponding author: anaducu@3nanosae.org

16:00 **Carbon aerogels synthesized in centrifugal fields** **P. PI 19**
A.M.I. Trefilov, L. Popovici, S. M. Iordache, A. Balan, C.E. Serban, I. Stamatin
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Atomistilor 405, P.O. Box 38, Bucharest-Magurele, Romania

16:00 **Electrochemical degradation of reactive dyes using a flow reactor with the boron doped electrode; the influence of dopant level.** **P. PI 20**
A. Fabiańska1, P. Boike1, P. Zieba2, A. Cirocka2, T. Ossowski2, R. Bogdanowicz3, E.M. Siedlecka1
1 Environmental Engineering, Department of Chemistry University of Gdańsk, Wita Stwosza 63, 80-952 Gdańsk, Poland; 2 Analytical Chemistry, Faculty of Chemistry, University of Gdansk, Wita Stwosza 63, 80-952 Gdansk, Poland; 3 Department of Metrology and Optoelectronics, Gdansk University of Technology, G. Narutowicza Str. 11/12, 80 233 Gdansk, Poland

16:00 **THEORETIC ANALYSIS OF SPIROGRAPHENE QUANTUM DOTS** **P. PI 21**
A. Zubarev*, A.-M. Iordache, I. Stamatin
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Atomistilor 405, P.O. Box 38, Bucharest-Magurele, Romania, 077125 *Corresponding author: alxzubarev@gmail.com

16:00 **NANOCARBON SYNTHESIS BY ELECTRICAL DISCHARGE IN CARBON CONTAINING LIQUIDS** **P. PI 22**
A.- M. Iordache(1), A. Zubarev(1,*), S.-M. Iordache(1), S. Stamatin(1,2), I. Stamatin(1)
(1)University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Atomistilor 405, P.O. Box 38, Bucharest-Magurele, Romania, 077125 (2)University of Southern Denmark, Campusvej 55, DK-5230 Odense, Denmark *Corresponding author: alxzubarev@gmail.com

16:00 **SPIROGRAPHENE THE NEW EXOTIC MATERIAL** **P. PI 23**
I. Stamatin(1,*), A. Zubarev(1), A.- M. Iordache(1), S.-M. Iordache(1), S. Stamatin(1,2)
1University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Atomistilor 405, P.O. Box 38, Bucharest-Magurele, Romania, 077125 2University of Southern Denmark, Campusvej 55, DK-5230 Odense, Denmark *Corresponding author: istarom@3nanosae.org

16:00 **Ultrafine dispersed nanodiamonds : effects on molecular processes in the cell.** **P. PI 24**
O.M.Yakymchuk1, O.M.Perepelytsina1, A.D.Rud2, I.N.Kirjan2, Beliy N.M.3, M.V.Sydorenko1
1 GO “Department for biotechnical problems of diagnostic Institute for problems of cryobiology and cryomedicine NAS Ukraine”. 2 G.V. Kurdyumov Institute for Metal Physics of NAS Ukraine, Kiev, Ukraine. 3 Taras Shevchenko` National University of Kiev, prosp. Academic Glushkov, 4, bild.1, Ukraine.

16:00 **A sensitive biosensor for α-fetoprotein based on single walled carbon nanotubes-poly-L-lysine nanocomposite** **P. PI 25**
Yanying Wang, Ying Qu, Chunya Li □
College of Chemistry and Materials Science, South?Central University for Nationalities, Wuhan 430074,China

16:00 **Plasmachemical modification of carbon nanotubes for improvement of electrochemical sensors** **P. PI 26**
P. Majzlikova, J. Prasek, M. Elias, O. Jasek, L. Zajickova
Brno University of Technology, Brno, Czech Republic; Brno University of Technology, Brno, Czech Republic; Masaryk University, Brno, Czech Republic; Masaryk University, Brno, Czech Republic; Masaryk University, Brno, Czech Republic;

16:00 **The evolving structure of graphene upon oxygen functionalisation** **P. PI 27**
Alexander Marsden, Helen Thomas, James Mudd, Mark Dyson, Ana Sanchez, Robert Cooke, Maria Asensio, Jose Avila, Ana Levy, Peter Brommer, David Quigley, Jonathan Rourke, Gavin Bell, Neil Wilson
Department of Physics, University of Warwick, Coventry, CV4 7AL; Synchrotron Soleil, L’Orme des Merisiers, Saint-Aubin, 48 91192 Gif-sur-Yvette Cedex, France; Department of Chemistry, University of Warwick, Coventry, CV4 7AL

16:00 **Room temperature synthesis and characterisation of blue/green luminescent carbon quantum dots** **P. PI 28**
Keith Linehan, Hugh Doyle
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

16:00 **Bubbles in epitaxial graphene** **P. PI 29**
A. Ben Gouider Trabelsi (1,2), F. V. Kusmartsev (2), B. J. Robinson (3), A. Ouerghi (4), O. E. Kusmartseva (2), O. V. Kolosov (3), R. Mazzocco (3), Marat. B. Gaifullin (2) and M. Oueslati (1)
1-Unité des Nanomatériaux et Photonique, Faculté des Sciences de Tunis, Université de Tunis El Manar Campus Universitaire, El Manar, 2092 Tunis, Tunisia. 2- Department of Physics, Loughborough University, Loughborough, LE11 3TU, United Kingdom 3- Department of Physics, Lancaster University, Lancaster LA1 4YB, United Kingdom 4- CNRS- Laboratoire de Photonique et de Nanostructures (LPN), Route de Nozay, 91460 Marcoussis, France

16:00 **High-rate Synthesis of Boron Doped Diamond by Hot Filament CVD Method and Its Electrochemical Properties** **P. PI 30**
T Miyamoto(1) , H Nagasaka(2) , T Shimizu(1) , Y Teranishi(2) , T Watanabe(2) , M Yang(1)
(1) Tokyo Metropolitan University, 1-1, Minami-Osawa, Hachioji, Tokyo, Japan; (2) Tokyo Metropolitan Industrial Technology Research Institute, 2-4-10, Aomi, kotoku, Tokyo, Japan

28 May 2014

08:00 **Discussion/Break**

Diamond : Xin Jiang

08:30 **Dissociative adsorption of molecular deuterium on poly-crystalline diamond films induced by medium temperature annealing** **P.S9 1**
Sh. Michaelson, T. Berkovitz, R. Akhvlediani and A. Hoffman
Schulich Faculty of Chemistry, Technion, Haifa 32000, Israel.

09:00 **Copper (I) Catalyzed Click Reactions on Phenylazide Functionalized Boron-doped Diamond by Electrografting.** **P.S9 2**
W.S. Yeap 1, M.S. Murib 1, W. Cuypers 1, X.J. Liu 2, B. van Grinsven 1 , W. Maes 1,3, M. Fahlman 2, P. Wagner 1,3, and K. Haenen 1,3
1 Hasselt University, Institute for Materials Research (IMO), B-3590 Diepenbeek, Belgium; 2 Linköping University, Department of Physics, Chemistry and Biology, S-58183 Linköping, Sweden; 3 IMEC vzw, IMOMEC, B-3590 Diepenbeek, Belgium

09:15 **Amination of diamond film by ammonia microwave plasma treatment** **P.S9 3**
J.J. Wei, L.F. Hei, J.L. Liu, Ch.M. Li
Institute of Advanced Materials and Technology, University of Science and Technology Beijing, Beijing 100083, China

09:30 **Odorant binding protein modified diamond MEMS for chemical trace detection** **P.S9 4**
R. Manai* 1, E. Scorsone 1, J-C. Arnault 1, L. Rousseau 2, F. Ghassemi 2, S.Nazeer 2, G. Lissorgues 2, N. Tremillon 4, H. Ginistry 4, E. Tuccori 3, M. Bernabei 3, K. Cali 3, K. Persaud 3, P. Bergonzo 1
1 CEA, LIST, Diamond Sensor Laboratory, 91191, Gif-sur-Yvette, FRANCE; 2 ESIEE-Paris, ESYCOM University Paris-EST, Cit? Descartes BP99, 93162 Noisy le Grand Cedex; 3 The University of Manchester, School of Chemical Engineering and Analytical Science, Oxford Road, Manchester, M13 9PL, United Kingdom; 4 GTP Technology, Immeuble Biostep, 436 Rue Pierre et Marie Curie, 31670 Lab?ge, FRANCE

09:45 **UltraNanoCrystalline diamond as a biocompatible interfacial material for implantable devices** **P.S9 5**
Hongjun Zeng, Prabhu U. Arumugam and John A. Carlisle
Advanced Diamond Technologies, Inc.

10:00 **Break**

Nanodiamond II : Huan-Cheng Chang

10:30 **The Pathway to Biocompatible Monodisperse Fluorescent Nanodiamonds** **P.S10 1**
Petr Cigler
Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic

11:00 **Study of ions and DNA molecules adsorption by nanodiamonds surface using optical spectroscopy** **P.S10 2**
K.A.Laptinskiy1, S.A.Burikov1, T.V.Laptinskaya1, J.M.Rosenholm2, O.A.Shenderova3, I.I.Vlasov4, T.A.Dolenko1
1 Physical Department, Moscow State University, 1/2, Leninskie gory, 119991 Moscow, Russia; 2 Center of Functional Materials, Laboratory of Physical Chemistry, Department of Natural Sciences, Abo Akadmi University, 20500 Turku, Finland; 3 International Technology Center, Raleigh, North Carolina 27617, United States; 4 General Physics Institute, Russian Academy of Sciences, 119991 Moscow, Russia

11:15 **Fluorescent nanodiamods as nanosensors for remote real-time monitoring of biological processes** **P.S10 3**
Vladimira Petrakova, Veronika Benson, Ivan Rehor, Petr Cigler, Jan Stursa, Miroslav Ledvina, Milos Nesladek
FBE, CTU, Kladno, Czech Republic; Institute of Microbiology, AS CR; Institute of Organic Chemistry and Biochemistry, AS CR; Institute of Organic Chemistry and Biochemistry AS CR; Nuclear Physics Institute, AS CR; Institute of Organic Chemistry and Biochemistry, AS CR; IMOMEC, IMEC, Hasselt University

11:30 **Plasma hydrogenation of nanodiamonds: from fundamentals to bioapplications** **P.S10 4**
H. A. Girard, T. Petit, C. Gesset, J.C. Arnault
CEA, LIST, Diamond Sensors Laboratory, 91191 Gif sur Yvette, France

12:00 **Lunch**

Electrochemistry : Petr Cigler

13:30 **Recent development on electrochemical application of boron-doped diamond electrodes** **P. S11 1**
Yasuaki Einaga
Department of Chemistry, Keio University

14:00 **Diamond Foam as a Novel Material for High Performance Supercapacitors** **P. S11 2**
Fang Gao, Georgia Lewes-Malandrakis, Marco Wolfer, Rene Hoffmann, Nianjun Yang, Christoph E. Nebel
Fraunhofer-Institute for Applied Physics (IAF)

14:15 **Diamond-based Multi Electrode Array biosensors: systematic detection of exocytosis from cultured and single chromaffin cells** **P. S11 3**
A. Battiato 1-2-5*, E. Bernardi 1-2-5, V. Carabelli 3-5, E. Carbone 3-5, S. Gosso 3,5, P. Olivero 1-2-5, A. Pasquarelli 4, F. Picollo 2-1-5 , E. Vittone 1-2-5
1 Physics Department and NIS Inter-departmental Centre, University of Torino, via P. Giuria 1, 10125 Torino, Italy; 2 INFN sect. Torino, via P. Giuria 1, 10125 Torino, Italy; 3 Department of Drug Science and Technology and NIS Inter-departmental Centre ,University of Torino, Corso Raffaello 30, 10125 Torino, Italy; 4 Institute of Electron Devices and Circuits, Ulm University, 89081 Ulm, Germany; 5 Consorzio Nazionale Inter-universitario per le Scienze fisiche della Materia (CNISM), Section of Torino

14:30 **Nanocrystalline {001} TiO2 /carbon aerogel electrode with high surface area and enhanced photoelectrocatalytic oxidation capacity** **P. S11 4**
Ya-nan Zhang, Yefei Jin , Xiaofeng Huang , Huijie Shi , and Guohua Zhao *, Hongying Zhao
Department of Chemistry, Tongji University

14:45 **Cubic Silicon Carbide for trace heavy metal ion analysis** **P. S11 5**
Hao Zhuang, Xin Jiang
University of Siegen

16:00 **PLENARY SESSION**

29 May 2014

Novel Structures : Yasuaki Einaga

08:30 **CVD growth of carbon nanostructures** **P. S11 1**
Xin Jiang
Institute of Materials Engineering, University of Siegen

09:00 **Controllable synthesis of heteroatom-doped carbon nanomaterials at atmospheric pressure** **P. S11 2**
Guan–Lin Chen, Wei-Hung Chiang
Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan

09:15 **Surface transformations of carbon (graphene, graphite, diamond, carbide, …) grown on polycrystalline nickel by hot filaments chemical vapour deposition.** **P. S11 3**
S. REY(1) and F. LE NORMAND (1,*)
1: ICube/maCEPV, CNRS/University of Strasbourg, FRANCE *: Presenting author

09:30 **Synthesis of a biosensor using pyrolyzed photoresist film on Silicon Carbide** **P. S11 4**
Julien Pezard, Mihai Lazar, Naoufel Haddour, Francois Buret
Ecole centrale de Lyon; Ecole centrale de Lyon; Ecole centrale de Lyon; Ecole centrale de Lyon

09:45 **Heterogeneous charge transfer at the carbon/solution interface: effect on spontaneous and potential driven reactions** **P. S11 5**
Paula E. Colavita, Michael E.G. Lyons, Deirdre M. Murphy, Ronan J. Cullen, Dilushan R. Jayasundara, Stefania Marzorati, Richard L. Doyle
School of Chemistry and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College Dublin, College Green, Dublin 2, Ireland

10:00 **Break**

Carbon Nanotube : Naoki Komatsu

10:30 **Increasing selectivity of carbon nanotubes-based chemical and biological sensors** **P. S12 1**
K.F. Ahmadishina, I.I. Bobrinetskiy, I.A. Komarov, A.M. Malovichko, V. K. Nevolin
National Research University of Electronic Technology (MIET), Russia

10:45 **Biomotor Powered Transportation Along Multi-Walled Carbon Nanotube Tracks** **P. S12 2**
A. Sikora 1, J. Ramón-Azcón 1, K. Kim1, K. Reaves 1,2, H. Nakazawa 3, M. Umetsu 3, I. Kumagai 3, T. Adschiri 1, H. Shiku 1,4, T. Matsue 1,4, W. Hwang 5,6 and W. Teizer 1,2,7
1 WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University 2 Materials Science and Engineering, Texas A&M University, USA 3 Department of Biomolecular Engineering, Graduate School of Engineering, Tohoku University 4 Graduate School of Environmental Studies, Tohoku University 5 Department of Biomedical Engineering, Texas A&M University, USA 6 School of Computational Sciences, Korea Institute for Advanced Study, Korea 7 Department of Physics and Astronomy, Texas A&M University, USA

11:00 **Selective assembly of one-dimensional nanostructures: from the directed placement of DNA-origami on surfaces, to the controlled formation of Carbon Nanotubes junctions in aqueous solution** **P. S12 3**
Matteo Palma, Erika Penzo, Risheng Wang, Ming Zheng, James Hone, Colin Nuckolls, Shalom Wind
Queen Mary University of London, Columbia University, Columbia University, National Institute of Standards and Technology, Columbia University, Columbia University, Columbia University

11:15 **Hyperspectral Raman imaging of biological samples using Raman tags made of J-aggregated dyes encapsulated inside carbon nanotubes.** **P. S12 4**
Nicolas Cottenye, Nathalie Y-Wa Tang, Etienne Gaufrès, Richard Martel
Regroupement Québécois sur les Matériaux de Pointe and Département de Chimie, Université de Montréal, Montréal, Québec H3C 3J7, Canada

11:30 **Surface functionalization and characterization of carbon nanotubes for enhanced atmospheric pollutants detection** **P. S12 5**
Amadou L. Ndiaye1,2, Christelle Varenne1,2, Jérôme Brunet1,2, Abhishek kumar1,2, Alain Pauly1,2
(1) Clermont Université, Université Blaise Pascal, Institut Pascal, BP 10448, F-63000 Clermont-Ferrand, (2) CNRS, UMR 6602, Institut Pascal, F-63171 Aubière,

11:45 **Pd/SnO2/CNT sensor for carbon monoxide detection** **P. S12 6**
Qinghua Hu , Shantang Liu*
School of Chemical Engineering and Pharmacy, Wuhan Institute of Technology

12:00 **Aminated CNT meshes for energy-efficient CO2 capture** **P. S12 7**
Mengmeng Deng, Hyung Gyu Park
Nanoscience for Energy Technology and Sustainability, Department of Mechanical and Process Engineering, ETH Zurich

12:15 **Lunch**

Graphene II : Maria Letizia Terranova

13:30 **GRAPHENE BASED HYBRID AND CONCENTRATING SOLAR POWER** **P. S13 1**
Dieter M. Gruen
Argonne Distinguished Fellow, Emeritus Downers Grove, IL., USA

14:00 **Graphene-based electrically reconfigurable microwave surfaces** **P. S13 2**
Osman Balci, Emre O. Polat, Coskun Kocabas
Bilkent University, Department of Physics, 06800 Ankara, Turkey

14:15 **Effective Photocatalytic activity of Graphene Supported Copper Nanoparticles for organic transformations** **P. S13 3**
Xiao-Ning Guo, Xi-Li Tong Xiang-Yun Guo
State Key Laboratory of Coal Conversion, Institute of Coal Chemistry, Chinese Academy of Sciences, Taiyuan 030001, China

14:30 **Broadband optical modulators based on graphene supercapacitors** **P. S13 4**
Emre O. Polat, Coşkun Kocabaş
Bilkent University, Department of Physics, 06800, Ankara, Turkey

14:45 **Graphene Nanostructures from Block Copolymer Self-assembly for Electronic & Energy Applications** **P. S13 5**
Jeong Gon Son
Photo-electronic Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea

15:00 **Contrasting Elastic Properties of Heavily B- and N-doped Graphene with Random Impurity Distributions Including Aggregates** **P. S13 6**
Karolina Z. Milowska, Magdalena Woińska, Małgorzata Wierzbowska,
1)Photonics and Optoelectronics Group, Ludwig-Maximilians-Universität München, Amalienstr. 54, D-80799 Munich, Germany 2)Nanosystems Initiative Munich (NIM), Schellingstr. 4, D-80799 Munich, Germany; Faculty of Chemistry, University of Warsaw, ul. Pasteura 1, PL-02-093 Warszawa, Poland; Faculty of Physics, University of Warsaw, ul. Hoza 69, PL-00-681 Warszawa, Poland

15:15 **Discussion/Break**

Poster II : Yuwu Chi, Pavel Troshin

16:00 **Graphene Functionalized with β-Cyclodextrin for Sensitive Determination of Triclosan** **P. PII 1**
Beibei Li,a, Qijin Wan,a, Wei Wei,a, Yi Liu,a, Nianjun Yang, a.b
a Key Laboratory for Green Chemical Process of Ministry of Education, Hubei Key lab of Novel Reactor & Green Chemical Technology, Wuhan Institute of Technology, Wuhan 430074, China b Fraunhofer Institute for Applied Solid State Physics, Freiburg 79108, Germany

16:00 **Chitosan Modified Graphene for Voltammetric Sensing of Nonylphenol** **P. PII 2**
Zhipeng Qiu, Hui Cai, Qijin Wan,a, Yi Liu,a Jing Zou,a Nianjun Yanga,b,
a School of Chemical Engineering & Pharmacy, Key Laboratory for Green Chemical Process of Ministry of Education, Hubei Key Lab of c Novel Reactor & Green Chemical Technology, Wuhan Institute of Technology, b Fraunhofer-Institute for Applied Solid State Physics (IAF), Freiburg 79108, Germany

16:00 **Graphene and Horseradish Peroxidase Based Biosensors** **P. PII 3**
Xi Luo, Hao Shu, Qijin Wan,a, Zhaohao Wang,a Nianjun Yanga,b,
a School of Chemical Engineering & Pharmacy, Key Laboratory for Green Chemical Process of Ministry of Education, Hubei Key Lab of Novel Reactor & Green Chemical Technology, Wuhan Institute of Technology, Wuhan 430073, China b Fraunhofer-Institute for Applied Solid State Physics (IAF), Freiburg 79108, Germany

16:00 **Functional Graphene Quantum Dots for Cell Imaging and Co-delivery of Gene** **P. PII 4**
Wenhao Dai
Haifeng Dong;Xueji Zhang*

16:00 **Electrochemical determination of 4-aminophenol based on three-dimensionally ordered macroporous l-cysteine oxide film modified electrode** **P. PII 5**
Jinshou Wang, Zhen Shi, Shenghui Zhang*
Department of Chemistry, Hubei University for Nationalities, Enshi, Hubei 445000, China

16:00 **AFM study of DNA adsorption on organic nanopatterns on graphite** **P. PII 6**
E.V. Dubrovin, N.V. Kuzmina, I.V. Yaminsky
M.V.Lomonosov Moscow State University

16:00 **Synthesis, characterization, and biomedical applications of polyglycerol-functionalized nanodiamond** **P. PII 7**
Naoki Komatsu, Li Zhao, Takahide Kimura
Shiga University of Medical Science

16:00 **Host-guest chemistry of carbon nanotubes with diporphyrin nanotweezers and nanocalipers for the structural separation** **P. PII 8**
Naoki Komatsu, Gang Liu, Takahide Kimura
Shiga University of Medical Science

16:00 **An Improvement of Electrical Properties of Diamond Thin Film Surface by a Control of Surface Termination and Its Application to RF Devices for Hard Electronics** **P. PII 9**
Young Yun, Jang-Hyeon Jeong, Jeong-Hoon Kim, Ki-Jun Son
Dep. of Radio Communication Engineering, Korea Maritime and Ocean University

16:00 **Electrochemical Hydrogenation and Characterization of Nitrogen-doped N-Type Ultrananocrystalline Diamond Films** **P. PII 10**
Ying Xiong, Bing Wang, Wenyuan Hu, Li Dai
State Key Laboratory Cultivation Base for Nonmetal Composites and Functional Materials, Southwest University of Science & Technology, Mianyang 621010, P. R. China

16:00 **Sensitive and selective determination of pentachlorophenol using ceria-graphene nanocomposite electrode** **P. PII 11**
Jing Zou, LuLi,Jinai Ma, Yuanxiao Zhang, Wanyun Gong
School of Chemical Engineering and Pharmacy, Key Laboratory for Green Chemical Process of Ministry of Education, Wuhan Institute of Technology, Wuhan 430073,P.R. China.

16:00 **Electrochemical determination of 4-aminophenol based on three-dimensionally ordered macroporous l-cysteine oxide film modified electrode** **P. PII 12**
Jinshou Wang, Zhen Shi, Shenghui Zhang
Department of Chemistry, Hubei University for Nationalities, Enshi, Hubei 445000, China

16:00 **Sensitivity and selectivity determination of pentachlorophenol using ceria-graphene nanocomposites modified glassy carbon electrode** **P. PII 13**
Jing Zou, LuLi, Jinai Ma, Yuanxiao Zhang, Wanyun Gong
School of Chemical Engineering and Pharmacy; Key Laboratory for Green Chemical Process of Ministry of Education; Wuhan Institute of Technology,

16:00 **Graphene prepared by one-step solvent exfoliation as a highly sensitive platform for electrochemical sensing** **P. PII 14**
Can Wu, Kangbing Wu
Key Laboratory for Large-Format Battery Materials and System, Ministry of Education, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

16:00 **Positive magnetoresistance observed in Co doped a-C/silicon heterostructions** **P. PII 15**
Yucheng Jiang, Ju Gao
Yucheng Jiang - The University of Hong Kong; Ju Gao - The University of Hong Kong

16:00 **Electro-Synthesis of Dimethyl Carbonate by MOF/Graphite Oxide Hybrid Catalysts** **P. PII 16**
Gan Jia, Wen Zhang, Yanfang Gao*
College of Chemical Engineering, Inner Mongolia University of Technology

16:00 **Fabrication of many-layered nonwoven nanosheets consisting of multiwalled carbon nanotubes** **P. PII 17**
Heon Ham1,4,, Eun-Hye Koo2, Sang-Yong Ju2, No-Hyung Park3,Yong Jung Kwon4, Hong Yeon Cho4, Han Gil Na4, Kwang Bo Shim4, Hyoun Woo Kim4,*
1Department of Liberal Arts and Sciences, and Nanomaterial Research Center, H&H Co. LTD, Korea National University of Transportation, 50 University-Road, Chungju-Si, Chungbuk, 330-702, Korea ; 2Department of Chemistry, Yonsei University, Seoul 120-749, Korea ; 3Department of Textile Convergence of Biotechnology & Nanotechnology, Korea Institute of Industrial Technology 1271-18 Sa 3-dong, Sangnok-gu, Ansan-Si, Gyeonggi-Do, 426-910, Korea ; 4Department of Materials Science and Engineering, Hanyang University, 222 Wangsimni-ro, Seongdong-Gu, Seoul, 133-791, Korea

16:00 **Preparation of three-dimensionally ordered macroporous polycysteine film and application in sensitive detection of 4-chlorophenol** **P. PII 18**
Zhen Shi, Jinshou Wang, Shenghui Zhang
School of Chemistry and Environmental Engineering, Hubei Minzu University, Enshi 445000, China

16:00 **pH sensors based on partially ammoniated diamond surfaces obtained by micro wave treatment** **P. PII 19**
J.L. Liu, C.M. Li, J.J. Wei, L.X. Chen, L.F. Hei, J.J. Wang, Z.H. Feng, H. Guo
School of Materials Science and Engineering ,University of Science and Technology Beijing, Beijing 100083, P.R. China; Science and Technology on ASIC Laboratory, Hebei Semiconductor Research Institute, Shi Jia Zhuang 050051, P.R. China; Institute of Laser, Academy of Science of Hebei Province, Shi Jia Zhuang 050000, P.R. China

16:00 **Theoretical study of the formation of NV centers in diamond.** **P. PII 20**
Peter Deák1 , Bálint Aradi1, Moloud Kaviani1 ,Thomas Frauenheim1 , and Adam Gali2,3
1 Bremen Center for Comp. Mater. Sci., University of Bremen, P.O. Box 330440, D-28334 Bremen, Germany; 2. Wigner Research Centre for Physics, Hungarian Academy of Sciences, P.O. Box 49, H-1525, Hungary ; 3. Department of Atomic Physics, Budapest University of Technology, Budafoki út 8., H-1111 Budapest, Hungary

16:00 **Cyclopropylamine plasma polymerization for biosensing applications** **P. PII 21**
Anton Manakhov, Lenka Zajícková, Petr Skladal, Jan Cechal
Plasma Technologies, Central-European Institute of Technology, Masaryk University; Department of Physical Electronics, Faculty of Science, Masaryk University; Research group Nanobiotechnology - Centre for Structural Biology - Central-European Technology Institute; Central-European Institute of Technology, Brno University of Technology

16:00 **Diamond synthesis on a centrifuge** **P. PII 22**
Ryo Nishimura, Yuko Inatomi, Yoshiki Takagi
Teikyo University of Science & Technology

16:00 **Development of carbon nanotube-polymer composites with oriented distribution of CNT induced by electric field** **P. PII 23**
Olena Yakovenko, Ludmila Matzui, Alexander Zhuravkov, Ludmila Vovchenko
Taras Shevchenko National University of Kyiv

16:00 **New concept graphene oxide synthesis** **P. PII 24**
Won kyu Park1,2, Hyeongkeun Kim1, Dae Ho Yoon2, Woo Seok Yang1
1 Electronic Materials and Device Research Center, Korea Electronics Technology Institute 2 School of Advanced Materials Science and Engineering, Sungkyunkwan University

16:00 **Effects of a cooling condition on high quality graphene synthesized by using low pressure chemical vapor deposition** **P. PII 25**
Dong Soo Choi1,2, Hyeongkeun Kim1, Yena Kim1,2, Hee Jin Kim1,2, Dae Ho Yoon2, Woo Seok Yang1
1 Electronic Materials and Device Research Center, Korea Electronics Technology Institute 2 School of Advanced Materials Science and Engineering, Sungkyunkwan University

16:00 **The influence of chemical treatments to remove polymer residue and water-mark on transferred graphene films** **P. PII 26**
Yena Kim1,2, Hyeongkeun Kim1, Dong Soo Choi1,2, Hee Jin Kim1,2, Dae Ho Yoon2 and Woo Seok Yang1
1 Electronic Materials and Device Research Center, Korea Electronics Technology Institute (KETI) 2 School of Advanced Materials Science and Engineering, Sungkyunkwan University

16:00 **Molecular Dynamics Study on Sliding Behavior of Graphene-Nanoflake on Graphene Nanoribbon Surface** **P. PII 27**
Sang-Hoon Cho, Sun-Young Kim, Jin-Soo Ko, Jeong-Won Kang*
Korea National University of Transportation

16:00 **Synthesis of Pt-Pd bimetallic Nanoparticles Anchored on Graphene for Highly Active Methanol Electro-oxidation** **P. PII 28**
Yuting Zhang a, Gang Chang a*, Honghui Shu a, Munetaka Oyama b, Xiong Liu a, and Yunbin He a*
a) Ministry-of-Education Key Laboratory for the Green Preparation and Application of Functional Materials, Faculty of Materials Science and Engineering, Hubei University, No.368 Youyi Avenue, Wuchang, Wuhan 430062, China; b) Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Nishikyo-ku, Kyoto 615-8520, Japan

16:00 **The Effect of Irradiation on Electrical and Electrodynamic Properties of Nanocarbon-Epoxy Composites** **P. PII 29**
L. Matzui (a,*), L. Vovchenko (a) , O.Lazarenko (a), V. Oliynyk (a), V. Launetz (a), F. Antoni (b), D. Muller (b), F. Le Normand (b)
a) Kyiv National Shevchenko University, Departments of Physicsa, Volodymyrska Str., 64, 03310 Kyiv, Ukraine b) ICube/MaCEPV, CNRS, 23 rue du Loess BP20, 67037 Strasbourg, France

16:00 **VAPOR DEPOSITION OF DIAMONDOIDS: FUNCTIONALIZATION CONTROLS THE MICROSTRUCTURE** **P. PII 30**
Maria A. Gunawan(1,3), Didier Poinsot(1), Bruno Domenichini(2), Peter R. Schreiner(3), Jean--Cyrille Hierso(1,4)
Université de Bourgogne, (1) Institut de Chimie Moléculaire (UMR--CNRS 6302) et (2) Laboratoire Interdisciplinaire Carnot de Bourgogne (UMR--CNRS 6303), Dijon, FRANCE (3) Justus Liebig Universität, Institut für Organische Chemie, Giessen, GERMANY (4) Institut Universitaire de France (IUF) E--mail: jean--cyrille.hierso@u--bourgogne.fr

30 May 2014

Carbon Dots II : Hugues Girard

08:30 **Photoluminescence Tunable Carbon Nanodots: Surface-State Energy Gap Tuning** **P. S14 1**
Lei Bao, Cui Liu, Zhi-Ling Zhang, Jing-Ya Zhao, Dai-Wen Pang*
Key Laboratory of Analytical Chemistry for Biology and Medicine (Ministry of Education), College of Chemistry and Molecular Sciences, and State Key Laboratory of Virology, Wuhan University, Wuhan, 430072, P. R. China

09:00 **Photothermal property of nanocarbon complexes for nanobiotechnological applications** **P. S14 2**
Eijiro Miyako
Nanotube Research Center (NTRC), National Institute of Advanced Industrial Science and Technology (AIST)

09:15 **Dendronized carbon nanoparticles: the effect of light antenna** **P. S14 3**
Qun Wang 1, Siu-Fung Lee2, Changyu Tang 1, Ken Cham-Fai Leung*2, Ka-Wai Wong*1
1 Chengdu Green Energy and Green Manufacturing Technology R&D Center, Chengdu Development Center of Science and Technology; 2 Department of Chemistry and Institute of Creativity, The Hong Kong Baptist University

09:30 **Functionnalisation of macroporous and nanowire arrays grooved in micro-particles of Si powder for biosensing applications** **P. S14 4**
R. OUERTANI , A. HAMDI , C. AMRI , M. KHALIFA , H. EZZAOUIA.
Laboratoire de Photovoltaïque, Centre de Recherches et des Technologies de l'Energie,Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisia.

09:45 **Break**

Graphene III : Dieter Gruen

10:15 **Functional Graphene Quantum Dots for Cell Imaging and Co-delivery of Gene** **P. S15 1**
Haifeng Dong, Wenhao Dai, Xueji Zhang
Beijing Key Laboratory for Bioengineering and Sensing Technology, University of Science & Technology Beijing

10:45 **An immunosensor for prostate specific antigen based on graphene-silk peptide nanosheets** **P. S15 2**
Ying Qu, Yanying Wang, Chunya Li □
College of Chemistry and Materials Science, South–Central University for Nationalities, Wuhan 430074,China

11:00 **Controlled chemical modification of graphene for applications in biosensing** **P. S15 3**
Marco R. Bobinger,Max Seifert,Anna Cattani-Scholz,Jose A. Garrido
Walter Schottky Institut;Technische Universität München;Germany

11:15 **Hydrogen adsorbtion and desorbtion on carbon and silicon nanoparticles** **P. S15 4**
S.A. Usmanova, G.A. Holmatova, D. Nuritdinov, A.P. Mukhtarov, K.M. Abdiraimova
S.A. Usmanova, G.A. Holmatova, D. Nuritdinov, National University of Uzbekistan, 100214 Tashkent, Uzbekistan; A.P. Mukhtarov, Institute of Nuclear Physics AN RUz, 100214 Tashkent, Uzbekistan; K.M. Abdiraimova, Tashkent Institute of Railway Engineering, 100214 Tashkent, Uzbekistan

11:30 **Closing remarks**

12:00 **Lunch**

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM Q

Hybrid materials engineering in biology, chemistry and physics

Symposium Organizers:

Fabrice Leroux, CNRS, Aubière, France

Pierre Rabu, CNRS, Strasbourg, France

Nico A.J.M. Sommerdijk, Eindhoven University of Technology, The Netherlands

Andreas Taubert, Institute of Chemistry, Golm, Germany

26 May 2014

09:00 **OPENING Fabrice Leroux**

SESSION Q.I : Fabrice Leroux

09:20 **Precisely controlled deposition of silica layer on nanoparticle surface** **Q.1 1**
Makoto OGAWA
Department of Earth Sciences and Graduate School of Creative Science and Engineering, Waseda University, 1-6-1 Nishiwaseda, Shinjuku-ku, Tokyo 169-8050, Japan

09:50 **New tools for the programmed assembly of DNA -coated nanoparticles** **Q.1 2**
Amelie Heuer-Jungemann (1), Robert Kirkwood (1), Afaf H. El-Sagheer (2), (3) Tom Brown (2), (4) and Antonios G. Kanaras (1), (4)
(1) Physics, Faculty of Physical Sciences and Engineering, University of Southampton, Southampton, UK, SO171BJ (2) Chemistry, Faculty of Natural Sciences and Engineering, university of Southampton, Southampton, UK, SO171BJ (3) Chemistry Branch, Department of Science and Mathematics, Faculty of Petroleum and Mining Engineering, Suez University, Suez 43721, Egypt. (4) Institute for Life Sciences, University of Southampton, Southampton, SO17 1BJ, UK

10:10 **COFFEE BREAK**

10:40 **Stabilization of magnetic microbubbles by negatively-charged cobalt ferrite nanoparticles and an anionic perfluoroalkyl surfactant** **Q.1 3**
A. Kovalenko1,2, J. Jouhannaud2,E. Lima2, P. Polavarapu1, M.P. Krafft1, G. Waton1, G. Pourroy2
1 Système Organisés Fluorés à Finalités Thérapeutiques (SOFFT) Institut Charles Sadron (ICS) CNRS - Université de Strasbourg (UPR 22). 23 rue du Loess, BP 84047. 67034 Strasbourg Cedex 2. France; 2 Institut de Physique et Chimie des Matériaux de Strasbourg IPCMS, UMR 7504 CNRS-ECPM-Université de Strasbourg, 23 rue du Loess BP 43, 67034 Strasbourg cedex 2 France

11:00 **Controlling the self-assembly strategies by tailored hydrophobic and oleophobic surfaces** **Q.1 4**
Ermanno Miele1, Mario Malerba1, Michele Dipalo1, Eliana Rondanina1, Andrea Toma1, Francesco De Angelis1,*
1Nanostructures Department, Istituto Italiano di Tecnologia, Genova, Italy

11:20 **New (porous) crystalline hybrid solids containing naturally occurring carboxy-phenolate ligands** **Q.1 5**
Lucy Cooper, Thomas Devic, Nathalie Guillou, Charlotte Martineau, Christian Serre,
Institut Lavoisier, UMR CNRS 8180, Université de Versailles St-Quentin-en-Yvelines, Versailles, France

11:40 **Silver Metal phosphonates for bactericidal application: synthesis, structural characterisation and silver release.** **Q.1 6**
Jean-Michel Rueff1, Bernard Raveau1, Marion Galmiche1, Olivier Perez1, Hélène Couthon-Gourvès2, Mathieu Berchel2, Paul-Alain Jaffrès2
1 CRISMAT, CNRS UMR 6508, ENSICAEN-Caen. 2 Université de Brest, CNRS, UMR 6521, CEMCA.

12:00 **LUNCH**

SESSION Q.2 : Jose Kenny

14:00 **Self-Assembly in Hybrid Materials** **Q.2 1**
Verónica de Zea Bermudez
Chemistry Department and CQ-VR, University of Trás-os-Montes e Alto Douro, 5000-801 Vila Real, Portugal

14:30 **UNLOCKING THE POTENTIAL OF UV LIGHT FOR THE SYNTHESIS OF MESOSTRUCTURED INORGANIC and HYBRID FILMS** **Q.2 2**
Abraham Chemtob1, Héloïse De Paz-Simon1, Céline Croutxé-Barghorn1, Séverinne Rigolet2, Laure Michelin2, Loïc Vidal2, Bénédicte Lebeau2
1 Laboratory of Macromolecular Photochemistry and Engineering, University of Haute-Alsace, ENSCMu, 3 bis rue Alfred Werner, 68093 Mulhouse Cedex, France
2 Institut de Science des Matériaux de Mulhouse, UMR-CNRS 7361, University of Haute-Alsace, 3 rue Alfred Werner 68093, Mulhouse Cedex, France

14:50 **Highly luminescent Au(I)-thiolate coordination polymers** **Q.2 3**
Christophe Lavenn,1 Nathalie Guillou,2 Gilles Ledoux,3 Christophe Dujardin,3 Aude Demessence*1
1. Institut de Recherches sur la Catalyse et l'Environnement de Lyon, UMR 5256, CNRS / Université Lyon 1 - Villeurbanne, France. 2. Institut Lavoisier de Versailles, UMR 8180, CNRS / Université de Versailles St-Quentin - Versailles, France. 3. Institut Lumière Matière, UMR5306, CNRS / Université Lyon 1 - Villeurbanne, France.

15:10 **Micro-carbon and nano-gold composite particles: their preparation, characterisation and applications** **Q.2 4**
Susan J. Quinn, Paul Duffy, Andrew D. Ward, Paula Colavita, David Hinds
School of Chemistry and Chemical Biology, University College Dublin, Belfield, Dublin 4, Ireland; School of Chemistry Trinity College Dublin College Green Dublin 2, Ireland; Rutherford Appleton Laboratory Harwell Oxford Didcot Oxfordshire, OX11 0QX; School of Chemistry Trinity College Dublin College Green Dublin 2, Ireland; School of Chemistry and Chemical Biology, University College Dublin, Belfield, Dublin 4, Ireland.

15:30 **Oligopeptide grafting in MOF for enantioselective applications** **Q.2 5**
Jonathan Bonnefoy a, Jérôme Canivet a, E. Alessandra Quadrelli b, David Farrusseng a
a Institut de Recherches sur la Catalyse et l'Environnement de Lyon-Université Lyon 1, UMR CNRS 5256, Avenue Albert Einstein 2, 69626, Villeurbanne, France. b Chemistry, Catalysis, Polymers and Processes, UMR 5265, CPE Lyon, 43 Bd du 11 Nov. 1918, 69616, Villeurbanne Cedex, France

15:50 **COFFEE BREAK**

SESSION Q.3 : Guido Kickelbick

16:20 **From 2D Monolayers to 3D Heterostructured Nanohybrids: A Novel Lattice Engineering Route to Nanostructured Functional Materials** **Q.3 1**
Seong-Ju Hwang
Department of Chemistry and Nano Science, Ewha Womans University, Seoul 120-750, Korea

16:50 **Structural evolution of Sol-Gel derived Thiol-functionalized Si-based Nano Building Blocks** **Q.3 2**
Evgeny Borovin*, Sandra Diré*, Emanuela Callone*, Francois Ribot 1,2,3
* Dipartimento di Ingegneria Industriale, Università di Trento, via Mesiano 77, 38123 Trento, Italia 1 Sorbonne Universités, UPMC Univ Paris 06, UMR 7574, Chimie de la Matière Condensée de Paris, F-75005, Paris, France 2 CNRS, UMR 7574, Chimie de la Matière Condensée de Paris, F-75005, Paris, France 3 Collège de France, UMR 7574, Chimie de la Matière Condensée de Paris, F-75005, Paris, France

17:10 **Asymmetric Organic–Inorganic Hybrid Membrane Formation via Block Copolymer–Nanoparticle Co-Assembly** **Q.3 3**
Yibei Gu, Rachel M. Dorin, Ulrich Wiesner
Department of Materials Science and Engineering, Cornell University

17:30 **Control the Integration of Single Janus-type Gold Nanoparticles and e-Beam Lithographically Defined Nanogaps** **Q.3 4**
N. Babajani (1), C. Kaulen (2), M. Homberger (2), U. Simon (2), R. Waser (1), S. Karthäuser (1)
(1) Peter Grünberg Institut (PGI-7) and JARA-FIT, Forschungszentrum Jülich GmbH, Germany; (2) Institute of Inorganic Chemistry (IAC) and JARA-FIT, RWTH Aachen University, Germany

17:50 **BioInspired Solvatochromic Responsive Photonic Crystal based on Spontaneous self-assembly of Adhesive Core@Soft Shell Building Blocks** **Q.3 5**
Charles Deleuze, Christophe Derail, Laurent Billon
IPREM/EPCP, UMR 5254, UPPA, 2 Avenue Angot, 64053 PAU, France.

18:10 **Dispersibility in solvents, liquid crystal phase, and structural color of fluorohectorite clay colloid ion-exchanged with organic cations** **Q.3 6**
Nobuyoshi Miyamoto, Shinya Yamamoto, Atsushi Miharaya
Department of Life, Environment, and Materials Science, Graduate School of Fukuoka Institute of Technology

27 May 2014

SESSION Q.4 : Uli Wiesner

08:30 **Self-Healing Inorganic-Organic Hybrid Nanocomposites** **Q.4 1**
Tom Engel, Lucie Struncová, Guido Kickelbick
Saarland University, Inorganic Solid State Chemistry, Am Markt Zeile 3, 66125 Saarbrücken, Germany

09:00 **Hybrid elastomers, based on poly(butyl acrylate), with self healing properties** **Q.4 2**
F. Ribot [1,2,3], F. Potier [1,2,3], C. Sanchez [1,2,3], A. Guinault [4], S. Delalande [5], L. Rozes [1,2,3]
[1] Sorbonne Universités, UPMC Univ Paris 06, UMR 7574, Chimie de la Matière Condensée de Paris, F-75005, Paris, France; [2] CNRS, UMR 7574 Chimie de la Matière Condensée de Paris, F-75005, Paris, France; [3] Collège de France, UMR 7574, Chimie de la Matière Condensée de Paris, F-75005, Paris, France; [4] Arts et Métiers ParisTech, UMR 8006, Procédés et Ingénierie en Mécanique et Matériaux, F-75013, Paris, France; [5] PSA Peugeot Citroën, F-78140, Velizy Villacoublay, France.

09:20 **Star-shaped iron oxide/polymer hybrid materials** **Q.4 3**
Virginie VERGNAT, Benoît HEINRICH, Michel RAWISO,* René MULLER,° Geneviève POURROY, Patrick MASSON
Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, CNRS UMR 7504, 23 rue du Lœss, BP 43, F-67034 Strasbourg Cedex 2, France *Institut Charles Sadron, CNRS UPR 22, 23 rue du Lœss, BP 84047, F-67034 Strasbourg Cedex 2, France °Ecole de Chimie, Polymères et Matériaux, 25 rue Becquerel, F-67087 Strasbourg Cedex 2, France

09:40 **Al-infiltrated Spider Dragline Silk and Its Molecular Deformation Behavior** **Q.4 4**
Seung-Mo Lee, 1,2,* Eckhard Pippel,3 Oussama Moutanabbir,4 Jae-Hyun Kim, 1,2 Hak-Joo Lee, 1 and Mato Knez5,6
1 Department of Nanomechanics, Nano-Mechanical Systems Research Division, Korea Institute of Machinery & Materials (KIMM), 156 Gajungbukno, Yuseong-gu, Daejeon, 305-343, Korea 2 Nano Mechatronics, University of Science and Technology (UST), 217 Gajeong-ro, Yuseong-gu, Daejeon 305-333, South Korea 3 Max Planck Institute of Microstructure Physics, Weinberg 2, D-06120 Halle, Germany 4 Department of Engineering Physics, Ecole Polytechnique de Montreal, C.P. 6079, Succ. Centre-Ville, Montréal, Québec, H3C 3A7 Canada 5 CIC nanoGUNE Consolider, Tolosa Hiribidea 76, E-20018 Donostia - San Sebastian, Spain 6 IKERBASQUE, Basque Foundation for Science, Alameda Urquijo 36-5, E-48011 Bilbao, Spain

10:00 **COFFEE BREAK**

SESSION Q.5 : Makoto Ogawa

10:30 **Stimuli-responsive Magnetic Materials** **Q.5 1**
Eugenio Coronado, Gonzalo Abellán, Mónica Giménez-Marqués, Mauricio López-Jordá Guillermo Mínguez-Espallargas, Miguel Clemente-León
Instituto de Ciencia Molecular. Universidad de Valencia. (Spain)

11:00 **Elaboration of organic-inorganic photosensible hubrid materials for photonic applications** **Q.5 2**
Pavlo GORBOVYI a, Mamadou TRAORE a, Luc MUSEUR b, Andréi KANAEV a
a Laboratoire des Sciences des Procédés et Matériaux UPR-CNRS 3407 b Laboratoire des Physiques des Lasers UMR-CNRS 7538

11:20 **Tailoring magnetism and ferroelectricity in perovskite-like organic-inorganic hybrids** **Q.5 3**
A.O.Polyakov, G.R.Blake, M.E.Kamminga, N.Akhtar, P.Rudolf, T.T.M.Palstra
Zernike Institute for Advanced Materials, University of Groningen

11:40 **Solution Processed Silver Nanowire/Graphene Hybrids for High Performance Inexpensive Transparent Electrodes** **Q.5 4**
I. Jurewicz, P Lyons, R.J. Smith, A. Fahimi, J.N. Coleman, A.B. Dalton
I. Jurewicz; A. Fahimi; A.B. Dalton - Department of Physics, Faculty of Engineering & Physical Sciences, University of Surrey, Guildford GU2 7XH, United Kingdom
J.N. Coleman; P Lyons; R.J. Smith School of Physics, Trinity College Dublin, Dublin, Ireland

12:00 **Rational design of Nanocarbon/Te nanowire composites for flexible and stable thermoelectric materials** **Q.5 5**
Heesuk Kim*, Sang-Soo Lee, Jang Yeol Lee, Jaeyoo Choi
Photo-electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul, Korea

12:20 **LUNCH**

SESSION Q.6 : Andreas Taubert

14:10 **Bio-Inspired Approaches to Crystals with Composite Structures** **Q.6 1**
Yi-Yeoun Kim1, Alex Kulak1, Mona Semsarilar2, Pengcheng Yang2, Steven P. Armes2, Fiona C. Meldrum1
1 School of Chemistry, University of Leeds, Leeds, UK 2 Department of Chemistry, University of Sheffield, Sheffield, UK

14:40 **Bionic Monolayers Interfacing Cells, Enzymes and Peptides** **Q.6 2**
Shlomo Yitzchaik
Institute of Chemistry and The Nanoscience and Nanotechnology Center, The Hebrew University of Jerusalem, Jerusalem 91904, Israel.

15:00 **Functional hybrid surfaces and interfaces based on bioinspired catechols** **Q.6 3**
J. Saiz-Poseu1, B. García2, J. Sedó1, J. Hernando3, F. Busqué3 and D.Ruiz-Molina1
1Centro de Investigación en Nanociencia y Nanotecnología, Campus UAB, 08193, Cerdanyola del Valles,Spain 2Fundación Privada ASCAMM, Unidad de Nanotecnología, ParcTecnològic del Vallès, Av. UniversitatAutònoma, 23 - 08290 Cerdanyola del Vallès, Spain 3Chemistry Department, Universitat Autònoma de Barcelona, Campus UAB 08193, Cerdanyola del Vallès, Spain,

15:20 **Sidechain control of porosity closure in single and multiple peptide-based porous materials by cooperative folding** **Q.6 4**
Carlos Martí-Gastaldo, Mathew J. Rosseinsky
Department of Chemistry, University of Liverpool, Crown Street, Liverpool, L697ZD, United Kingdom

15:40 **Combining self-assembling peptide materials with hybrid organic-inorganic photostructurable materials towards biomedical applications** **Q.6 5**
A. Mitraki (1,2) *, K. Terzaki (1,2), E. Kalloudi (1), M. Vamvakaki (1,2), M. Chatzinikolaidou (1,2), M. Farsari (2)
1) Department of Materials Science and Technology, University of Crete, Heraklion, Greece; and 2) Institute of Electronic Structure and Laser (IESL) FORTH, Greece

16:00 **COFFEE BREAK**

POSTER SESSION I : First Session

16:20 **Mesoporous silica equipped with pH-sensitive nanovalves for controlled liberation of para-aminobenzoic acid** **Q.PI 1**
N.V. Roik, L.A. Belyakova, M.O. Dziazko
Chuiko Institute of Surface Chemistry of NAS of Ukraine, 17 General Naumov Str., Kiev, 03164, Ukraine

16:20 **Prediction of Compatible Hydrophilic Polysulfone (PSf)-Based Biomaterials.** **Q.PI 2**
Tien Jung Huang
Industrial Technology Research Institute Material and Chemical Research Laboratories

16:20 **Formation and properties of polyethyleneimine/sodium carboxymethyl cellulose multilayers** **Q.PI 3**
I.V. Paribok, V.E. Agabekov
Institute of Chemistry of New Materials of NAS of Belarus

16:20 **Micro energy-dispersive X-ray fluorescence spectrometry analysis of human and bovine dentin-adhesive layer** **Q.PI 4**
Ana Maria do Espírito Santo 1 Luís Eduardo Silva Soares 2
1 Universidade Federal de São Paulo, UNIFESP, Departamento de Ciências Exatas e da Terra 2 Universidade do Vale do Paraíba, UNIVAP, Dental Materials and Operative Dentistry Department, Research and Development Institute, IP&D

16:20 **Zn-Cr layered double hydroxide/graphene nanocomposite: Facile synthesis and enhanced visible-light-induced photocatalytic performance** **Q.PI 5**
Meng Lan, Guoli Fan, Feng Li
State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, P.R.China.

16:20 **Ionogels by electrospinning** **Q.PI 6**
Christian Bagdahn; Andreas Taubert
Institute of Chemistry, University of Potsdam, D-14476 Potsdam

16:20 **Calcium phosphate mineralization control by polycations and by surfaces and interfaces** **Q.PI 7**
Mathias Junginger; Doreen Hentrich; Andreas Taubert
Institute of Chemistry, University of Potsdam, D-14476 Potsdam

16:20 **Template-assisted self-assembly of Gold nanoparticles into helicoidal superstructures** **Q.PI 8**
J. Cheng,1 E. Pouget, 1 S. Lecomte, 1 P. Barois, 2A. Aradian, 2 Marie-Hélène Delville3 and Reiko Oda 1
1CBMN-IECB 5248, Chimie et Biologie des Membranes et Nano-objets, Institut Européen de Chimie et Biologie, 2 Rue Robert Escarpit, 33607 Pessac France; 2CRPP Centre de Recherche Paul Pascal, Centre de Recherche Paul Pascal.115 Avenue Schweitzer, 33600 Pessac France; 3ICMCB 9048, Institut de Chimie de la Matiere Condensee de Bordeaux, 87 Av du Dr Schweitzer, 33608 Pessac France

16:20 **Preparation of Porous n-HA/PVA/CS composite hydrogel and biological evaluation** **Q.PI 9**
ZHOU Li, LUO Zhongkuan*, OUYANG Jun-jun, HU Huiyuan, HU Juguang
Department of Applied Chemistry, College of Chemistry and Chemical Engineering, Shenzhen University, Shenzhen518060, Guangdong, China

16:20 **Performance of polyamide membrane reached by ZnO nanoparicles for ground water purification** **Q.PI 10**
J. El Ghoul (a,b,*), A. S. AL-Hobaib (c), and L. El Mir (a,b)
a Laboratory of Physics of Materials and Nanomaterials Applied at Environment (LaPhyMNE), Gabes University, Faculty of Sciences in Gabes, Gabes, Tunisia. b Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Department of Physics, Riyadh 11623, Saudi Arabia. c Institute of Atomic Energy Research, King Abdulaziz City for Science And Technology (KACST), 11442 P.O. Box 6086 Riyadh, Saudi Arabia.

16:20 **INFLUENCE OF LIGHT CURING PROTOCOL ON VOLUMETRIC DIMENSIONAL CHANGE OF DENTAL RESIN COMPOSITES** **Q.PI 11**
Eduard Gatin1, 2, Catalin Luculescu3, Stefan Iordache4, Roxana R. Ilici2, Ruxandra Sfeatcu 2, Lidia Ciobanu5, Patrascu Ioan2
1 University of Bucharest, Faculty of Physics, Materials Department, P.O. Box MG - 11, Magurele – Bucharest, Romania; 2 University of Medicine “Carol Davila”, Faculty of Dentistry, Calea Plevnei 19, Sector 5, Bucharest, Romania; 3 INFLPR, National Institute for Laser, Plasma and Radiation Physics, P.O. Box MG- 36, Magurele – Bucharest, Romania; 4 University of Bucharest, 3Nano-SAE Research Centre, P.O. Box MG- 38, Magurele, Romania; 5 „St. Pantelimon” Hospital, Sos. Pantelimon Nr. 340 - 342, Sector 2, Bucharest, Romania.

16:20 **One-dimensional Au nanoparticles arrays: size and inter-particle distance optimization for healthcare devices** **Q.PI 12**
G. Cacciato, M. Zimbone, F. Ruffino, G. D’Arrigo, A. Sciuto, M. G. Grimaldi
G. Cacciato, M. Zimbone, F. Ruffino, M. G. Grimaldi Dipartimento di Fisica ed Astronomia-Università di Catania and MATIS IMM-CNR, via S. Sofia 64, 95123 Catania, Italy; G. D’Arrigo, A. Sciuto Consiglio Nazionale delle Ricerche – Istituto per la Microelettronica e Microsistemi (CNR-IMM) VIII Strada 5, 95121 Catania, Italy;

16:20 **Synthesis and characterization of barium hexaferrite powder** **Q.PI 13**
Ludmila Vovchenko, Ludmila Matzui, Oleksiy Brusilovets, Alexander Shames
Kyiv National Taras Shevchenko University, Departments of Physics1 and Chemistry2 Kiev, Ukraine; Department of Physics, Ben-Gurion University of the Negev, Be'er-Sheva, Israel

16:20 **Capture of radionuclides in aluminum-based Metal-Organic Frameworks** **Q.PI 14**
C. Falaise, C. Volkringer, R. Giovine, M. Huve, T. Loiseau
Unité de catalyse et de chimie du solide, UMR8181- Lille- France

16:20 **Hydrothermal synthesis of organically templated metal phosphates materials: Experimental approach** **Q.PI 15**
Radia Bagtache, Yasmina Roumila, Djaafar Meziani, Kaïssa Abdmeziem*
USTHB, Faculté de Chimie, Laboratoire d'Electrochimie-Corrosion, Métallurgie et Chimie Minérale, Equipe de Chimie Inorganique, BP 32 El Alia, Bab-Ezzouar, 16111 Alger, Algérie

16:20 **Polymer-graphene hybrids for 3D field emission elements** **Q.PI 16**
D. Konios1, G. Viskadouros1, C. Petridis1, M.M. Stylianakis1, E.Stratakis1,2, E. Kymakis1
1. Center of Materials Technology and Photonics & Electrical Engineering Department, Technological Educational Institute (TEI) of Crete, Heraklion 71004 Crete, Greece 2. Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, P.O. Box 1527, 711 10 Heraklion Crete, Greece

16:20 **Interface structure and mechanical properties of polypropylene-based grapheme hybrid by molecular dynamics simulation** **Q.PI 17**
Tien-Jung Huang , Shin-Pon Ju , Chien-Chia Chen, and Hsin-Lung Chen
Material & Chemical Research laboratories, Industrial Technology Research Institute, Hsinchu, TAIWAN; Department of Chemical Engineering, National Tsing Hua University, Hsinchu 300, Taiwan ; Department of Mechanical and Electro-Mechanical Engineering, National Sun Yat-Sen University, Kaohsiung, TAIWAN *70 Lienhai Rd., Kaohsiung 80424, TAIWAN

16:20 **Encapsulation of quantum dot in a polymeric/inorganic hybrid microcapsule for protection from thermal and oxidative degradation : application to phototransformation films** **Q.PI 18**
Hyo-Sun Kim, Young-Soo Seo
Department of Nano Science & Technology, Sejong University, 209 Neungdong Ro, Gwangjin, Seoul 143-747, Rep. of Korea

16:20 **Preparation of Porous n-HA/PVA/CS composite hydrogel and biological evaluation** **Q.PI 19**
ZHOU Li, LUO Zhongkuan* , OUYANG Jun-jun, HU Huiyuan, HU Juguang
Department of Applied Chemistry, College of Chemistry and Chemical Engineering Shenzhen University

16:20 **NEW LAYERED FUNCTIONALIZED CERIUM(IV) PHENYLPHOSPHONATES** **Q.PI 20**
Klára Melánová 1, Ludvík Beneš 2, Jan Svoboda 1, Vítězslav Zima 1, Milan Vlček 1
1 Institute of Macromolecular Chemistry of Academy of Sciences of the Czech Republic, v.v.i., Heyrovský Sq. 2, 162 06 Prague 6, Czech Republic; 2 University of Pardubice, Faculty of Chemical Technology, Studentská 95, 532 10 Pardubice, Czech Republic

16:20 **Intercalation of π-conjugated organic compounds into layered hosts with acidic groups** **Q.PI 21**
Klára Melánová 1, Ludvík Beneš 2, Jan Svoboda 1, Vítězslav Zima 1, Petr Knotek 2
1 Institute of Macromolecular Chemistry of Academy of Sciences of the Czech Republic, v.v.i., Heyrovský Sq. 2, 162 06 Prague 6, Czech Republic; 2 University of Pardubice, Faculty of Chemical Technology, Studentská 95, 532 10 Pardubice, Czech Republic

16:20 **Pseudomorphic transformation of hybrid layered simple hydroxides into Prussian Blue Analogue nano-structures** **Q.PI 22**
Marina Lang,1 Emilie Delahaye,1 Driss Ihiawakrim,1 Ovidiu Ersen,1 Dominique Foix,2 Jean-Marc Grenèche,3 Guillaume Rogez,1 Pierre Rabu1
1 Institut de Physique et Chimie des Matériaux de Strasbourg, UMR7504 CNRS-UNISTRA and NIE, 23 rue du Loess, B.P. 43, 67034 Strasbourg cedex 2, France. 2 IPREM-ECP (UMR5254), 2, avenue du Président Angot, 64053 Pau cedex 9, France. 3 Institut des Molécules et Matériaux du Mans (IMMM), UMR CNRS 6283, Université du Maine, 72085 Le Mans Cedex 9 France

16:20 **Co2Al-ABTS/graphene oxide Layered Double Hydroxide: toward the development of an O2/lactate biofuel cell** **Q.PI 23**
Pierre Vialat, Fabrice Leroux, Christine Mousty
Clermont Université, Université Blaise Pascal, Institut de Chimie de Clermont-Ferrand, UMR-CNRS 6296, BP 80026, F-63171 Aubière Cedex, France

16:20 **X-ray diffraction and rheology cross-study of polymer chain penetrating surfactant tethered layered double hydroxide resulting into intermixed structure with polypropylene, poly(butylene)succinate and poly(dimethyl)siloxane** **Q.PI 24**
Fabrice Leroux,1* Antoine Dalod,1 Mohammed Hennous,1,2 Laura Sisti,3 Grazia Totaro,3 Annamaria Celli,3 Christian Coehlo,1 Vincent Verney1
1Institut de Chimie de Clermont-Ferrand (ICCF), UMR 6296, Blaise Pascal University, 24 av des Landais, 63177 Aubière, France 2Laboratoire de physico chimie des Matériaux,Oran University–BP 1505 El M'naouer, Oran 31000, Algeria 3Dipartimento di Ingegneria Civile, Chimica, Ambientale e dei Materiali, Bologna University, via Terracini 28, 40131 Bologna, Italy

16:20 **Electrical and structural properties of TiO2 nanotube-Metallophthalocyanine heterojunctions** **Q.PI 25**
Necmettin Kilinc*, Erdem Sennik*, Devrim Atilla**, Ayşe Gul Gürek**, Vefa Ahsen**, Zafer Ziya Ozturk*
*Gebze Institute of Technology, Faculty of Science, Department of Physics, 41400 Gebze-Kocaeli, Turkey; **Gebze Institute of Technology, Faculty of Science, Department of Chemistry, 41400 Gebze-Kocaeli, Turkey

16:20 **Structural, optical and electrical features of material composed by nanocellulose and silicon nanoparticles** **Q.PI 26**
Pikulev V. B., Loginova S. V., Prokopovich P.F., Gurtov V. A.
Petrozavodsk State University

16:20 **Microwave assisted post-synthesis modification of layered simple hydroxides** **Q.PI 27**
Oleg Palamarciuc, Emilie Delahaye, Pierre Rabu, Guillaume Rogez
IPCMS (CNRS-Université de Strasbourg, UMR7504)

16:20 **pH-Responsive Calcium Carbonate Mineralized Nanoparticles for Efficient Intracellular Protein Delivery** **Q.PI 28**
Ahn Na Koo, Sang Cheon Lee
Department of Maxillofacial Biomedical Engineering Kyung Hee University

16:20 **Characteristics and biological responses of hybrid coatings containing TiO2 and manganese by electrochemical methods** **Q.PI 29**
Yen-Ting Liu (1), Kuan-Chen Kung (2), Yu-Chi Li (3), Tzer-Min Lee (2,4), Truan-Sheng Lui (1)
(1) Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan. (2) Institute of Oral Medicine, National Cheng Kung University, Tainan, Taiwan. (3) Institute of Manufacturing Information and Systems, National Cheng Kung University, Tainan, Taiwan. (4) Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan.

16:20 **Improved the biological performance of hybrid porous coatings of Ta2O5 and Sr-Ca-P coatings on titanium through plasma electrolysis oxidation** **Q.PI 30**
Yu-Chi Li (1), Yen-Ting Liu (2), Kuan-Chen Kung (3), Tzer-Min Lee (3,4), Ching-Cheng Wang (1)
(1) Institute of Manufacturing Information and Systems, National Cheng Kung University, Tainan, Taiwan. (2) Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan. (3) Institute of Oral Medicine, National Cheng Kung University, Tainan, Taiwan. (4) Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan.

16:20 **Porous coatings containing strontium and titanium oxide on biomedical implants** **Q.PI 31**
Kuan-Chen Kung (1), Yen-Ting Liu (2), Yu-Chi Li (3), Tzer-Min Lee (1,4), Truan-Sheng Lui (2)
(1) Institute of Oral Medicine, National Cheng Kung University, Tainan, Taiwan. (2) Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan. (3) Institute of Manufacturing Information and Systems, National Cheng Kung University, Tainan, Taiwan. (4) Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan.

16:20 **Smart Windows with Counterion-Mediated Reversibly Tunable Transparency** **Q.PI 32**
(1) Ho Sun Lim, (2) Jeong Ho Cho
(1) Electronic Materials and Device Research Center, Korea Electronics Technology Institute; (2) SKKU Advanced Institute of Nanotechnology (SAINT) and Center for Human Interface Nano Technology (HINT), School of Chemical Engineering, Sungkyunkwan University

16:20 **Novel Linker-Mediated Hybrid-Type Photocatalysts of CdS-Zn-Cr-LDH with High Photocatalytic Activity for Visible-Light-Induced H2 Production** **Q.PI 33**
Jang Mee Lee, Jayavant L. Gunjakar, Seong-Ju Hwang
Department of Chemistry and Nano Sciences, Ewha Womans University

16:20 **Controlled Synthesis Mesoporous Calcium Silicates with Ultrahigh Drug Loading Capacity and Their pH-Triggered Release Behaviors** **Q.PI 34**
Md. Shahinul Islam, Won San Choi, Ha-Jin Lee
Jeonju Center, Korea Basic Science Institute, 20 Gunjiro, Dukjin-gu, Jeonju, 561-180, Republic of Korea; Department of Chemical and Biological Engineering, Hanbat National University, 125 Dongseodaero, Yuseong-gu, Daejeon, 305-719, Republic of Korea; Jeonju Center, Korea Basic Science Institute, 20 Gunjiro, Dukjin-gu, Jeonju, 561-180, Republic of Korea

16:20 **X-Ray Photoelectron Spectroscopy of Nanostructures** **Q.PI 35**
Salvatrice Millesi, G. G. Condorelli, Antonino Gulino
Dipartimento di Scienze Chimiche, Universit? di Catania and I.N.S.T.M. UdR of Catania, Viale Andrea Doria 6, 95125 Catania, Italy.

16:20 **Nylon11-b-PEG multiblock copolymer/graphene oxide hybrid nanocomposites with infrared triggered shape memory effects for potential biomedical applications** **Q.PI 36**
Myung Chan Choi, Tae-Hyun Kim, Young-Wook Chang
Department of Chemical Engineering, Hanyang University

16:20 **First investigation in ScGaAs ternary and superlattice** **Q.PI 37**
L. Boudaoud1,3, N. Sekkal1, F. Tair2
(1) Département de Physique-Chimie, Ecole Normale Supérieure de l'Enseignement d'Oran (2) Département de Physique, Université des Sciences et Technologie Mohamed Boudiaf d'Oran. (3) Unité de recherche en énergie renouvelables au milieu saharen, centres de développement des énergies renouvelables Alger

16:20 **Self-Healing Inorganic-Organic Hybrid Nanocomposites based on Core-Shell Nanoparticles** **Q.PI 38**
Tom Engel, Guido Kickelbick
Saarland University, Inorganic Solid State Chemistry, Am Markt Zeile 3, 66125 Saarbrücken, Germany

16:20 **Application of protective thiourea/poly(dimethylsiloxane) sol-gel coatings on electronic boards** **Q.PI 39**
A. Šurca Vuk1, A. Rauter1, M. Rodošek1, L. Slemenik Perše1, M. Koželj1, B. Orel1, O. Sunetci2, B. Bengű2
1 National Institute of Chemistry, Hajdrihova 19, SI-1000 Ljubljana, Slovenia 2 Arcelik R&D, 34950 Cayirova Campus - Tuzla/Istanbul, Turkey E-mail: angela.surca.vuk@ki.si

16:20 **A molecular simulation study on the electrical conductivity and deformation of polymer/CNT microfibers** **Q.PI 40**
Hyun Woo Cho, Bong June Sung
Department of Chemistry, Sogang University

16:20 **Hybrid multilayers: insertion layer in Schottky diode devices** **Q.PI 41**
V. Torrisi1, F. Ruffino2, I. Crupi2, M.G. Grimaldi2, G. Marletta1
1Laboratory for Molecular Surface and Nanotechnology (LAMSUN), Department of Chemical Sciences, University of Catania and CSGI, Viale A. Doria 6, 95125, Catania, Italy; 2Dipartimento di Fisica ed Astronomia-Università di Catania, and MATIS IMM-CNR, via S. Sofia 64 95128 Catania, Italy.

16:20 **Designing hybrid organic-inorganic interface for spintronics using pulsed laser deposition** **Q.PI 42**
Sayani Majumdar, Sebastiaan van Dijken, Katarzyna Grochowska, Mirek Sawczak and Gerard Sliwinski
Nanospin, Department of Applied Physics, Aalto University School of Science, FI-00076, Finland; Photophysics Department, Szewalski Institute of Fluid Flow Machinery, Polish Academy of Sciences, 80-952 Gdansk, Poland

16:20 **Perspective electroluminescent hybrid materials** **Q.PI 43**
Olga Petrova, Roman Avetisov, Andrew Khomyakov, Rasim Saifutyarov, Igor Avetissov
D.Mendeleyev University of Chemical Technology of Russia

16:20 **Fabrication of Free-Standing Gyroidal Mesoporous Multifunctional Core-Shell Nanocomposites** **Q.PI 44**
Jorg G. Werner (1), Maik R. J. Scherer (2), Ulrich Steiner (2), Ulrich Wiesner (1)
(1) Department of Materials Science and Engineering, Cornell University, Ithaca NY, USA (2) Cavendish Laboratory, Department of Physics, University of Cambridge, Cambridge, UK

16:20 **Study on hybrid PVC–SiO2 membrane materials prepared by sol–gel method** **Q.PI 45**
Wang Jiyuan, Guo Feng
Research Institute of Sinopec Yangzi Petrochemical Co., Ltd., Nanjing 210048, Jiangsu, China

16:20 **Co-intercalation of Acid Blue 129 and an UV absorbent into layered double hydroxides: Improvement of photostability** **Q.PI 47**
Pinggui Tang, Leilei Qian, Yongjun Feng, Dianqing Li*
State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology

16:20 **Organic-inorganic nanohybrid materials having controlled arrangement of dye molecules inside the 2-dimensional layered structure** **Q.PI 48**
Ji-Yeong Lee1, Tae-Hyun Kim1, Won-Jae Lee2, Seung-Min Paek2*, Jae-Min Oh1*
1Department of Chemistry and Medical Chemistry, College of Science and Technology, Yonsei University,Wonju, Gangwondo 220-710, South Korea; 2Department of Chemistry, Kyungpook National University,Taegu 702-701, South Korea

16:20 **Development of surface treatment device by serpentine plasma system equipped with UV irradiation** **Q.PI 49**
Shi-ichi AOQUI, Kazuhiro NAGAHAMA, Fumiaki MITSUGI
Department of Computer & Information Sciences, Sojo Univ., Department of Applied Microbial Tech., Sojo Univ., Graduate School of Science & Tech., Kumamoto Univ.

16:20 **Development of Superhydrophobic Films via Controlling Surface Chemistry and Physics** **Q.PI 50**
Jaeseok Yoo, Sanghee Park, Kyoung-Youl Baek, Hoichang Yang
Department of Applied Organic Materials Engineering, Inha University, Incheon 402-751 (Korea), Center for Materials Architechturing, Korea Institute of Science and Technology, Seoul 136-794 (Korea)

16:20 **Rattle-type core@shell particles** **Q.PI 51**
Won San Choi, Do Xuan Huy, Ha-Jin Lee
Hanbat National University

16:20 **The damping property of graphene/polyurethane nanocomposites** **Q.PI 52**
Shaojie Lu, Ziqing Cai, Xiaoyu Meng, Qiong Zhou*, Lishan Cui
College of Science, China University of Petroleum, Beijing 102249, China. Beijing Key Laboratory of Failure, Corrosion and Protection of Oil/gas Facilities, Beijing 102249, China.

16:20 **Luminescence Conversion from Ultraviolet to White Light in Rare-earth-free Nanocomposites.** **Q.PI 53**
Pin-Chun Shen, Hung-Jen Kao, Chieh-Nan Tseng, Jhih-Siang Yang, Kuan-Yu Chen, Chien-Ting Liu, Yu-Wen Cheng, Hao-Yu Wu and Ching-Fuh Lin
Graduate Institute of Photonics and Optoelectronics, National Taiwan University

16:20 **Electrical properties and nanostructuring of poly(3-hexylthiophene) / single wall carbon nanotubes hybrid material** **Q.PI 54**
Gianfranco Sfuncia [1], Francesco Ruffino [2], Isodiana Crupi [2] and Giovanni Marletta [1]
[1] Laboratory for Molecular Surface and Nanotechnology (LAMSUN), Dipartimento di Scienze Chimiche, Università di Catania e CSGI, viale A. Doria 6, 95125, Catania, Italy. [2] Dipartimento di Fisica ed Astronomia-Università di Catania, and MATIS IMM-CNR, via S. Sofia 64, 95128, Catania, Italy.

16:20 **Influence of the reactive function's position on a thiophene ring on the synthesis and structure of hybrid materials.** **Q.PI 55**
Marion Galmiche1- 2, Paul-Alain Jaffrès3, Bernard Nysten2, Olivier Perez1, Jean-Michel Rueff1
1CRISMAT, CNRS UMR6508 Ensicaen-Caen ; 2IMCN/BSMA Université catholique de Louvain – Belgique ; 3CEMCA, CNRS UMR6521, Université de Bretagne Occidentale - Brest

16:20 **Inverse electron demand Diels-Alder (iEDDA) reactions used for the preparation of polymer-grafted dipyrido(pyridazines) and their metal-binding ability** **Q.PI 56**
Astrid-Caroline Knall (1,2), David Reishofer (1), Manuel Hollauf (1), Sebastijan Kovacic (1,3) and Christian Slugovc (1)
(1) Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria; (2) Department of Chemistry, Imperial College London, South Kensington Campus, Exhibition Road, SW7 2AZ, United Kingdom; (3) National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia

16:20 **Fabrication of sub-10nm functional nanochannels based on organic/inorganic hybrid materials** **Q.PI 57**
Jeong Hwan Kim, Sung Woong Lee, Jae-Sung Yoon, Doo-Sun Choi, and Yeong-Eun Yoo
Department of Nano Manufacturing Technology, Korea Institute of Machinery and Materials (KIMM), Daejeon 305-343, Republic of Korea

16:20 **Synthesis and Characterization of Zn-Al-AG Nanohybrid Polymer Nanocomposite.** **Q.PI 58**
Abdullah Aljaafari
Physics Department King Fisal University

16:20 **Exfoliation and reassembling route to new nanostructured titanium dioxide-perovskite hybrids** **Q.PI 59**
Ji Hoon Jang, Won-Jae Lee, Seung-Min Paek
Department of Chemistry, Kyungpook National University, Taegu 702-701, Korea

16:20 **Electrochemical performance of cobalt hydroxide nanosheets formed by the delamination of layered cobalt hydroxide in water** **Q.PI 60**
B. Schneiderova (a,b), J. Demel (a), J. Plestil (c), H. Tarabkova (d), J. Bohuslav (d,e) and K. Lang (a)
(a) Institute of Inorganic Chemistry of the AS CR, v. v. Rez, Czech Republic (b) Faculty of Science, Charles University in Prague, Praha , Czech Republic (c) Institute of Macromolecular Chemistry of the AS CR, v. v. i., Praha, Czech Republic (d) J. Heyrovsk? Institute of Physical Chemistry of the AS CR, v. v. i., Praha, Czech Republic (e) Institute of Chemical Technology, Praha, Czech Republic

16:20 **Towards the understanding of the gel-to-sol transition in a new class of cyclodextrin-based hydrogel** **Q.PI 61**
B.Rossi1, V. Allodi2, V. Crupi3, G. Guella1, D. Majolino3, G. Mariotto2, A. Mele4, L. Melone4, C. Punta4, F. Trotta5, V. Venuti3
1Department of Physics – University of Trento, Via Sommarive 14, 38123 Povo, Trento, Italy 2Department of Computer Science, University of Verona, Strada le Grazie 15, 37134 Verona, Italy 3Department of Physics and Earth Sciences, University of Messina, CNISM UdR Messina, Viale Ferdinando Stagno D'Alcontres 31, 98166 Messina, Italy 4Department of Chemistry, Materials and Chemical Engineering "G. Natta", Politecnico di Milano, Piazza L. da Vinci 32, 20133, Milano, Italy 5Department of Chemistry, University of Torino, Via Pietro Giuria 7, 10125 Torino, Italy

16:20 **Effect of Polymer Matrix on the Structure and Luminescence Properties of Barium Zirconate (BaZrO3) nanocrystals** **Q.PI 62**
O. Aksimentyeva (1), V. Savchyn (2), I. Opaynych(1), P. Demchenko(1), Yu. Horbenko(1), V. Pankratov (3) and A.I. Popov (3,4)
(1) Dept. of Chemistry, Ivan Franko National University of Lviv, 79005, Lviv, Ukraine, (2) Dept of Electronics, Ivan Franko National University of Lviv, 79005, Lviv, Ukraine, (3) Institute of Solid State Physics, University of Latvia, LV-1063, Riga, Latvia; (4) Institute Laue-Langevin, F-38042 Grenoble, France;

16:20 **Plasmonic effect design for hybrid DNA biomedical sensors supported on semi-regular Au nanoarrays** **Q.PI 63**
Katarzyna Grochowska, Gerard Sliwinski
Photophysics Department, The Szewalski Institute, Polish Academy of Sciences, 14 Fiszera St, 80-231 Gdansk, Poland

16:20 **Fabrication and properties of hybrid materials containing CdS:Mn nanoparticles and organic polymer** **Q.PI 64**
A.I. Savchuk, I.D. Stolyarchuk, O.A. Savchuk, V.V. Makoviy, O.A. Shporta
Department of Physics of Semiconductors and Nanostructures, Chernivtsi National University, 2 Kotsubynsky Str., 58012 Chernivtsi, Ukraine

16:20 **Performance of organic and inorganic solar cells under different solar spectrum variations** **Q.PI 65**
A. Guechi , M. Chegaar , A. Merabet
Institute of Optics and Precision Mechanics, Ferhat Abbas University, 19000, Setif, Algeria; Department of Physics, Faculty of Sciences, Ferhat Abbas University, 19000, Setif, Algeria

16:20 **Interface Control on Thermal Stability of Molten salts/Carbon Composite at Multiple Phase Transitions** **Q.PI 66**
M. Hadjieva*, Z. Nenova*, M. Konstantinova*, Ts. Tsacheva** R. Kirilov*
Bulgarian Academy of Sciences; *CL SENES , 72 "Tzarigradsko schosse", 1784 Sofia **Institute of Physical Chemistry, G. Bonchev, 1113 Sofia

16:20 **Effect of tetrabutyl phosphonium bromide ionic liquid on the thermal, mechanical and ion-exchange properties of sulfonated poly(ether ether ketone) membranes** **Q.PI 67**
Vijay Shankar Rangasamy 1*, Savitha Thayumanasundaram 1, Niels De Greef 2, Jin Won Seo 2, Jean-Pierre Locquet 1
(1) Department of physics and Astronomy, KU Leuven, Celestijnenlaan 200D, 3001 Heverlee, Belgium (2) Department of Metallurgy and Materials Engineering, Kasteelpark Arenberg 44, B-3001 Leuven, Belgium

16:20 **Alkoxide-intercalated CoFe-layered double hydroxides as precursors of colloidal nanosheet suspensions: structural, magnetic and electrochemical properties** **Q.PI 68**
Jose A. Carrasco, Gonzalo Abellán, Eugenio Coronado, Jorge Romero, María Varela.
Instituto de Ciencia Molecular (ICMol) Universidad de Valencia; Oak Ridge National Laboratory, Materials Science and Technology Division, Oak Ridge USA; Universidad Complutense de Madrid, Dpt. Fisica Aplicada III & Instituto Pluridisciplinar. Madrid.

16:20 **Polymer electrolytes based on PVA/PAA blend for room temperature lithium ion batteries** **Q.PI 69**
Savitha Thayumanasundaram 1* , Vijay Shankar Rangasamy 1, Niels De Greef 2, Jin Won Seo 2, Jean-Pierre Locquet 1
1. Department of Physics and Astronomy, Celestijnenlaan 200D, B-3001 Leuven, Belgium. 2. Department of Metallurgy and Materials Engineering, Kasteelpark Arenberg 44, B-3001, Leuven, Belgium

16:20 **Solvent-free elastomers with clay nano-platelets as crosslinker** **Q.PI 70**
Strachota B., Hodan J., Šlouf M., Matějka L.
Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic v.v.i. Heyrovského nám. 2, CZ-162 06 Praha 6, Czech Republic

16:20 **Controlled USPIO size towards highly sensitive MRI contrast agent** **Q.PI 71**
J. Bolley, M. Boucher, S. Meriaux; N. Pinna, L. Motte, Y. Lalatonne
a. CSPBAT (UMR7244), Université Paris 13 b. Neurospin, CEA c. Humboldt-Université, Berlin Institut de Chimie d. Hôpital Avicenne, Service de Médecine Nucléaire

16:20 **Spectroscopic characterization of protein-wrapped single-wall carbon nanotubes and quantification of their cellular uptake in multiple cell generations** Q.PI 72
C Bertulli, HJ Beeson, T Hasan, YYS Huang
University of Cambrdge

SESSION Q.7 : Nico Sommerdijk

08:30 **Biomineralization-Inspired Organic/Inorganic Hybrid Materials** Q.7 1
Takashi Kato
Department of Chemistry and Biotechnology, School of Engineering, The University of Tokyo, Tokyo, 113-8656, Japan

09:00 **Hybrid nano-helix: from the organic self-assembly to the design of functional nanostructures** Q.7 2
Emilie Pouget1, Dymtro Dedovets1,4, Jiaji Cheng1, Yutaka Okazaki1, Jacques Leng2, Philippe Barois3, Sophie Lecomte1, Rajat K. Das1, Omar F. Zouani1, Marie-Christine Durrieu1, Marie-Hélène Delville4, Reiko Oda1
1 Chimie et Biologie des Membranes et des Nano-objets, allée de St Hilaire, 33600 Pessac, France ; 2 Laboratory Of Future, 178 av. Schweitzer, 33608 Pessac, France ; 3 Centre de Recherche Paul-Pascal, 115 av. Schweitzer, 33600 Pessac, France ; 4 Institut de Chimie de la Matière Condensée de Bordeaux, 87 av. Schweitzer, 33600 Pessac, France

09:20 **Design of Smart Nanofiber Mesh that Allows the Simultaneous Use of Chemo- and Thermo-therapy** Q.7 3
Mitsuhiro Ebara, Young-Jin Kim, Koichiro Uto, Takao Aoyagi
Biomaterials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science

09:40 **Development of the first hybrid formulations of benzoxaborole drugs** Q.7 4
Saad Sene, Sylvie Bégu, Hubert Mutin, Christel Gervais, Danielle Laurencin
Institut Charles Gerhardt de Montpellier, UMR 5253, France; Laboratoire de Chimie de la Matière Condensée, UMR 7574, Université Pierre et Marie Curie, Paris, France

10:00 **COFFEE BREAK**

SESSION Q.8 : Fiona Meldrum

10:30 **Fine-tuning the functionality of inorganic surfaces using phosphonate chemistry: biological applications** Q.8 1
Bruno BUJOLI
CEISAM, UMR 6230 Université de Nantes-CNRS, 2 Rue de la Houssinière, BP 92208, 44322 Nantes Cedex 03, France

11:00 **Medical applications of drug/calcite hybrid crystals: from targeted delivery carriers to active scaffolds** Q.8 2
Matteo Di Giosia, Matteo Calvaresi, Giuseppe Falini
Dipartimento di Chimica “G. Ciamician”, Alma Mater Studiorum Università di Bologna, Via F. Selmi 2, 40126 Bologna, Italy

11:20 **Toward a new generation of targeted fluorescent nanoparticles for the prostate cancer diagnosis** Q.8 3
Nadège Francolon1, Lia Leccia2, Damien Boyer1, Laurent Morel2, Rachid Mahiou1
1 Clermont Université, Institut de Chimie de Clermont-Ferrand, UMR 6296 CNRS / UBP / ENSCCF, 24, avenue des Landais, BP 80026, F-63171 AUBIERE 2 Clermont Université, Génétique Reproduction et Développement, CNRS, UMR 6293, INSERM, 1103, BP 10448, F-63000 CLERMONT-FERRAND

11:40 **Peptide hydrogel decorated with growth factors and self-assembling adhesive sequences: covalent grafting on TiO2 surfaces investigated by SR-XPS, Angular Dependent NEXAFS and IR.** Q.8 4
C. Battocchio[1], F. Porcaro[1], G. Iucci[1], M. Dettin[2], A. Zamuner[2], G. Polzonetti[1]
[1]Department of Sciences, University “Roma Tre”, Roma, 00146, Italy. [2]Department of Industrial Engineering, University of Padova, Padova, 35131, Italy.

12:00 **LUNCH**

SESSION Q.9 : Veronica de Zea Bermudez

14:00 **Hybrid silica nanoparticles as pH-sensitive and autonomous carriers** Q.9 1
Carole CARCEL, Christophe THERON, Simon Giret, Michel WONG CHI MAN
Institut Charles Gerhardt Montpellier (UMR 5253, CNRS-UM1-UM2-ENSCM) AM2N, ENSCM, 8 rue de l'Ecole Normale, 34296 Montpellier Cedex 5, France.

14:20 **Liquid phase synthesis of magnetic iron nanoparticles for MRI contrast** Q.9 2
Richard d Tilley
School of Chemical and Physical Sciences and MacDiarmid Institute, Victoria University of Wellington, New Zealand.

14:40 **Devlopment of nanoplateform for multimodal imaging of brain tumors** Q.9 3
Sophie Richard 1, Amaury Herbet 2, Marianne Boucher 3, Yoann Lalatonne 1, Sébastien Mériaux 3, Jean-Philippe Hugnot 4, Didier Boquet 2, Laurence Motte 1
1 Université Paris 13, UMR 7244 CNRS, Bobigny, 93017, France; 2 CEA de Saclay, iBiTecS, LIAS, Gif sur Yvette, 91191, France; 3 CEA de Saclay, Neurospin, Gif sur Yvette, 91191, France; 4 Institut de Neuroscience de Montpellier, INSERM U1051, Montpellier, 34091, France;

15:00 **Colon-targeted drug delivery systems based on pectin@chitosan-LDH bionanocomposite beads** Q.9 4
Lígia N. M. Ribeiro, Ana C. S. Alcântara, Margarita Darder,* Pilar Aranda, Fernando M. Araújo-Moreira and Eduardo Ruiz-Hitzky
L.N.M. Ribeiro, A.C.S. Alcântara, M. Darder, P. Aranda, E. Ruiz-Hitzky, Instituto de Ciencia de Materiales de Madrid, CSIC, Cantoblanco, 28049 Madrid, Spain; L.N.M. Ribeiro, F. M. Araújo-Moreira, Universidade Federal de São Carlos, Monjolinho,13565-905 - São Carlos, SP, Brazil

15:20 **INITIAL STUDIES TO EVALUATE THE INTERACTION BETWEEN IRON OXIDE NANOPARTICLES AND CAENORHABDITIS ELEGANS** Q.9 5
Laura González1, Elisa Carenza1, Anna Roig1, Anna Laromaine1*
Group of Nanoparticles and Nanocomposites. Institut de Ciència de Materials de Barcelona, ICMAB (CSIC). Campus UAB, 08193 Bellaterra, Spain.

15:40 **COFFEE BREAK**

16:00 **PLENARY SESSION**

19:30 **CONFERENCE RECEPTION SOCIAL EVENT**

SESSION Q.10 : Pierre Rabu

08:30 **Functional Materials on the Basis of Elemental Strategy** Q.10 1
Hiroshi Kitagawa
Division of Chemistry, Graduate School of Science & Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University

09:00 **A highly versatile and powerful preparation route of polymer-functionalized mesoporous silica** Q.10 2
E. Molina, P. Lacroix-Desmazes, M. In, N. Marcotte, C. Gérardin
Institut Charles Gerhardt, ENSCM Montpellier, Laboratoire Charles Coulomb, Université de Montpellier 2, Montpellier, France

09:20 **Designing Novel Nanodevices** Q.10 3
Nyevero Simbanegavi, Lindsey J. Munro, Paul Birkett
Manchester Metropolitan University

09:40 **Tetrazole Ring as an Anchoring Group to Post-functionalize Titanium Dioxide Porous Thin Films: A New Method to Process Efficient Dye-Sensitized Solar Cells** Q.10 4
Julien Massin,a Céline Olivier,a Laurent Ducasse,a Lionel Hirsch,b Thierry Toupancea*
a Université de Bordeaux, Institut des Sciences Moléculaires, UMR 5255 CNRS, 351 Cours de la Libération, F-33405 Talence Cedex, France. b Université de Bordeaux, Laboratoire de l'Intégration du Matériau au Système, UMR 5218 CNRS, 16 Avenue Pey-Berland, 33607 Pessac Cedex, France.

10:00 **COFFEE BREAK**

SESSION Q.11 : Takashi Kato

10:30 **Atomic-scale investigation of perovskite oxide thin films using scanning tunneling microscopy** Q.11 1
Taro Hitosugi
Tohoku University

11:00 **The electronic and chemical structure of ZnSe/Ir(4-tBupiq)2(acac) and Ir(4-tBupiq)2(acac)/ZnSe interfaces and ZnSe+Ir(4-tBupiq)2(acac) co-evaporated films derived from photoelectron spectroscopy measurements** Q.11 2
M. Dimamay, G. Hadziioannou, T. Mayer, W. Jaegermann
Materials Science Institute, Technische Universität Darmstadt, Darmstadt, Germany; Laboratoire de Chimie des Polymères Organiques, CNRS, Université Bordeaux 1, Pessac, France

11:20 **Investigations on PVP/Pechini derived Y3BO6:Eu3+, a red luminescent composite suitable for new lighting devices based on UV-LEDs** Q.11 3
Nathalie Pradal (a,b), Anthony Chapel (b,c), Damien Boyer (a,b), Geneviève Chadeyron (a,b), Sandrine Therias (b,c), Rachid Mahiou (b,c)
(a) Clermont Université, ENSCCF, Institut de Chimie de Clermont-Ferrand, BP 10448, F-63000 CLERMONT-FERRAND; (b) Clermont Université, Université Blaise Pascal, Institut de Chimie de Clermont-Ferrand, BP 10448, F-63000 CLERMONT-FERRAND; (c) CNRS, UMR 6296, ICCF, BP 80026, F-63171 AUBIERE

11:40 **Mesoporous nanocomposites for the detection of molecules at low concentration by SERS effect: coupling thermodynamic and Raman Spectroscopy** Q.11 4
Virginie Hornebecq 1, David Bergé-Lefranc 2, Déborah Fernand 1, Trang Phan 3, Cédric Pardanaud 4
MADIREL Laboratory UMR 7246, Aix-Marseille University, Marseille France; 2 IMBE Laboratory UMR 6263, Faculty of Pharmacy, Aix-Marseille University, Marseille, France; 3 ICR, UMR 7273, Aix-Marseille University, Marseille France; 4 PIIM Laboratory UMR 7345, Aix-Marseille University, Marseille France

12:00 **LUNCH**

SESSION Q.12 : Eugenio Coronado

14:00 **Engineering properties of Au and Pd nanoclusters through their ligand shell: Computational insights** — Q.12 1
F. Remacle
University of Liege, Belgium

14:20 **An innovative plasma-based deposition route for the production of hybrid nano-sized parylene-based materials** — Q.12 2
Gianluigi Maggioni, 1,2 Sara Carturan, 1,2 Ignazio Castagliuolo, 3 Marco Giarola, 4 Gino Mariotto, 4
1 Department of Physics and Astronomy G. Galilei, University of Padova, Via Marzolo, 8, 35100 Padova, Italy 2 Laboratori Nazionali di Legnaro, Istituto Nazionale di Fisica Nucleare, Viale dell'Università, 2, 35020 Legnaro, Padova, Italy 3 Department of Molecular Medicine, University of Padova, Via Gabelli 63, 35121 Padova, Italy 4 Department of Computer Science, University of Verona, Strada le Grazie 15, I-37134 Verona, Italy

14:40 **All-Metal Nanoporous Materials: Synthesis and Applications** — Q.12 3
Yusuke Yamauchi
International Center for Materials Nanoarchitectnics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan

15:00 **Absolute ionisation potentials of metal-organic frameworks** — Q.12 4
Christopher H. Hendon, Keith T. Butler, Aron Walsh
University of Bath, United Kingdom

15:20 **Composite Organic Conductors with Memory** — Q.12 5
J. R. Galan-Mascaros, Y. S. Koo
Institute of Chemical Research of Catalonia (ICIQ); Catalan Institution for Research and Advanced Studies (ICREA)

16:00 **Strategies for assembling metal-organic complexes on metals and manipulation of their magnetic properties** — Q.12 6
Pietro Gambardella
Department of Materials, ETH Zurich, CH-8093 Zurich, Switzerland

16:30 **COFFEE BREAK**

POSTER SESSION II : Second Session

16:30 **Iron oxide surface engineering: synthesis of magnetically retrievable nano-organocatalysts** — Q.PII 1
E. Nehlig(1)*, L. Motte (1), E. Guénin (1).
(1) Université Paris 13, Sorbonne Paris Cité, Laboratoire CSPBAT, UMR CNRS 7244 74 rue Marcel Cachin, bureau 330, 93017 Bobigny.

16:30 **Hydrothermal liquefaction as a route to transform microalgae residues in bio-asphalt** — Q.PII 2
Clémence Queffélec,a Emmanuel Chailleux,b Mariane Audo,b Maria Paraschiv,c Jack Legrand,c Olivier Lépine,d Bruno Bujoli,a
a Chimie et Interdisciplinarité : Synthèse, Analyse, Modélisation (CEISAM) 2 Rue de la Houssinière, BP 92208,44322 Nantes Cedex 03, FRANCE b Institut Français des Sciences et Technologies du Transport, de l'Aménagement et des Réseaux (IFSTTAR) Route de Bouaye, 44340 Bouguenais, FRANCE c Génie des Procédés & Environnement & Agroalimentaire (GEPEA), 58, rue Michel Ange BP 420 44606 Saint Nazaire, France d Alpha Biotech, Le frostidie, 44410 Assérac, FRANCE

16:30 **Effect of calcining temperature of Si3N4 poly-hollow microspheres on the properties of the porous Si3N4 ceramics prepared by aqueous gelcasting** — Q.PII 3
Jia-Min Wu, Xiao-Yan Zhang, Jia-Lu Li, Jin-Long Yang
State Key Lab of New Ceramics and Fine Processing, School of Materials Science and Engineering, Tsinghua University

16:30 **Electrospun soluble polyimide nanofibers – novel templates for gold nanoparticle synthesis** — Q.PII 4
Diana Serbezeanu1,2, Ionela-Daniela Carja2, Ion Sava2, Giuseppino Fortunato1, Martin Amberg1, René Rossi1, Ana Maria Popa1
1 Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Protection and Physiology, Lerchenfeldstrasse 5, CH-9014 St. Gallen, Switzerland 2"Petru Poni" Institute of Macromolecular Chemistry, Aleea Gr. Ghica Voda 41A, Iasi-700487, Romania

16:30 **Effect of a Hybrid Material on Charge Carrier Photogeneration of Poly(9-vinylcarbazole)** — Q.PII 5
Rabindranath Jana*, Keka Rana, Arijit Bhattacharya, Dedajyoti Naskar, Saptarshi Chatterjee
Department of Chemical Engineering, Haldia Institute of Technology, ICARE Complex, Haldia-721657, Purba Medinipur, W.B., INDIA

16:30 **FTIR INVESTIGATIONS OF APTES POROUS SILICON FUNCTIONALIZATION** — Q.PII 6
N.MAJOUL, S.AOUIDA, B.BESSAÏS
Photovoltaic Laboratory, Research and Technology Centre of Energy, BP 95, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif

16:30 **Oxide nanocrystals obtained by hybrid soft-chemistry methods: on the role of the exposed crystal surfaces in upgrading the gas-sensing properties** — Q.PII 7
Massimiliano D'Arienzo, Barbara di Credico, Matteo Redaelli, Roberto Scotti, Franca Morazzoni
University of Milano-Bicocca, Dept. of Materials Science, Via R. Cozzi 55, 20125, Milano

16:30 **Hybrid Janus nanoparticles via laser photochemical deposition in a lab on a chip configuration** — Q.PII 8
I Shupik,1,2 L Vauriot,1,2 JP Delville,2 MH Delville,1 *
1 CNRS/ICMCB, Université de Bordeaux France; 2 LOMA Université de Bordeaux, France * e-mail: delville@icmcb-bordeaux.cnrs.fr

16:30 **A new precursor concept for the preparation of mixed oxides with controlled metal dispersion** — Q.PII 9
Ulrich Schubert, Jingxia Yang
Institute of Materials Chemistry Vienna University of Technology

16:30 **Shape-controlled Nanoparticle Assembly Mediated By Electrostatic Complexation With Polyelectrolyte Chains: The Role Of Lp/R.** — Q.PII 10
F. CARN, L. SHI, F. BOUE, G. MOSSER, E. BUHLER
Laboratoire Matière et Systèmes Complexes, UMR CNRS- Université Paris Diderot 7057, Paris, France. Laboratoire Léon Brillouin, UMR CEA-CNRS 12, CEA Saclay, Gif-sur-Yvette, France. Laboratoire Chimie de la Matière Condensée, UMR CNRS-UPMC 7574, Collège de France, Paris, France.

16:30 **Innovative Carbonaceous Surface Modification of Cathode Material for Lithium Ion Batteries Using Catalytic Reaction** — Q.PII 11
In Hyuk Son1, Junyoung Mun2, Jong Hwan Park1, Jin-Hwan Park1 and Jae-Man Choi1
Energy Lab., Material R&D Center, Samsung Advanced Institute of Technology (SAIT), Samsung Electronics Co. LTD. Maetan 2-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-803, Republic of Korea; 2 Department of Energy and Chemical Engineering, Incheon National university, Songdo-dong, Yeonsu-gu, incheon, 406-840, Republic of Korea

16:30 **Improving mechanical properties of silica-rubber nanocomposites by modifying the organic/inorganic interface** — Q.PII 12
M.D'Arienzo a, B. Di Credico a, T.Hanel b, F.Morazzoni a, R.Scotti a, A. Susanna a, L.Tadiello a,
a Dip. Scienze dei Materiali, INSTM, Univ.of Milano-Bicocca, Via R. Cozzi, 53, 20125 Milano, Italy; b Pirelli Tyre SpA, Viale Sarca, 222, 20126 Milano, Italy.

16:30 **Computational study of the electrical properties of CNT-reinforced polymer composites: mesoscale structure dependence.** **Q.PII 13**
Sergey V. Pyrlin[1]; Anna Y. Matveeva [2]; Marta M.D. Ramos [1]; Martha V. Escárcega-Bobadilla [3,4], Gustavo A. Zelada-Guillén [4].
1. Group of Computational and Theoretical Physics, Center of Physics and Department of Physics, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal; 2. IPC - Institute for Polymers and Composites, University of Minho, Campus de Azurem, 4800-058 Guimaraes, Portugal; 3. Institute of Chemical Research of Catalonia (ICIQ), Av. Països Catalans 16, 43007 - Tarragona, Spain; 4. Polymaterials AG. Innovapark 20, 87600 Kaufbeuren, Germany.

16:30 **BIOINSPIRED SYNTHESIS OF MAGNETITE NANOPARTICLES** **Q.PII 14**
Cem L. Altan,1,2, Jos Lenders,1 Paul H.H. Bomans,1 Vladimir Dmitrovic,1 Harshal Zope,2 Atsushi Arakaki,4 Alexander Kros,3 Heiner Friedrich,1 Gijsbertus. de With,1 Seyda Bucak,2 Nico A.J.M. Sommerdijk1
1 Department of Chemical Engineering and Chemistry, Eindhoven University of Technology, Eindhoven, The Netherlands 2 Department of Chemical Engineering, Yeditepe University, Istanbul, Turkey 3 Leiden Institute of Chemistry, Soft Matter Chemistry, Leiden, The Netherlands 4 Graduate School of Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan

16:30 **Zno Quantum Dots Decorated Graphene Ultraviolet Photodetector** **Q.PII 15**
Wenhao Guo, Shuigang Xu, Zefei Wu, Ning Wang, Michael M T Loy, Shengwang Du
Department of Physics, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China

16:30 **Effects of Collisions on the Stoichiometry of Thin Films Prepared by Pulsed Laser Deposition** **Q.PII 16**
Daniel M. Packwood, Susumu Shiraki, Taro Hitosugi
WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University

16:30 **Organometallic catalysts confined inside MOF nanospace** **Q.PII 17**
Jonathan Bonnefoy a, Jérôme Canivet a, E. Alessandra Quadrelli b, David Farrusseng a
a Institut de Recherches sur la Catalyse et l'Environnement de Lyon-Université Lyon 1, UMR CNRS 5256, Avenue Albert Einstein 2, 69626, Villeurbanne, France. b Chemistry, Catalysis, Polymers and Processes, UMR 5265, CPE Lyon, 43 Bd du 11 Nov. 1918, 69616, Villeurbanne Cedex, France

16:30 **Synthesis and characterization of Magnetic Bacterial cellulose films.** **Q.PII 18**
Muling Zeng, Anna Roig, Anna Laromaine
Institut Ciencia de Materials de Barcelona, Campus UAB, 08193 Bellaterra, Spain.

16:30 **Synthesis of hybrid coordination network by solvo-ionothermal approach.** **Q.PII 19**
Pierre Farger,1 Guillaume Rogez,1 Emilie Delahaye,1 Pierre Rabu1
1 Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504 and NIE, 23 rue du Loess, BP 43, 67034 Strasbourg Cedex 2

16:30 **Cobalt/silicon carbide (porous) hybrid material as an active Fischer-Tropsch catalyst** **Q.PII 20**
Dmytro Korytko, Sergei Alekseev, Viacheslav Iablokov, Olena Khaynakova, Santiago Garcia-Granda, Vladimir Zaitsev, Norbert Kruse
Universite Libre de Bruxelles, Chemical Physics of Materials, Brussels, Belgium; National Taras Shevchenko University of Kiev, Kiev, Ukraine; Universidad de Oviedo, Department of Physical and Analytical Chemistry, Oviedo, Spain

16:30 **Particle aggregation impact on endothelial cells SPIONs uptake and on cell MRI imaging** **Q.PII 21**
Elisa Carenza1, Verónica Barceló2, Anna Morancho2, Joan Montaner2, Anna Rosell2, Anna Roig1
1Institut de Ciència de Materials de Barcelona, Consejo Superior de Investigaciones Científicas (ICMAB-CSIC), Campus de la UAB, Bellaterra, Catalunya, SPAIN 2Neurovascular Research Laboratory and Neurovascular Unit, Vall d'Hebron Institut de Recerca, Hospital Universitari Vall d'Hebron, Universitat Autònoma de Barcelona, Passeig Vall d'Hebron, 119-129, Barcelona, Catalunya, SPAIN, roig@icmab.es

16:30 **Terpenic Resins: A Renewable Material to Process Hybrid Organic-Inorganic Materials for Water-barrier Applications** **Q.PII 22**
Anaëlle Girard,a Yohann Nicolas,a Thierry Toupancea
a Université de Bordeaux, Institut des Sciences Moléculaires, UMR 5255 CNRS, 351 Cours de la Libération, F-33405 Talence Cedex, France.

16:30 **Synthesis and characterization of hybrid metal based nanosystems** **Q.PII 23**
A. Gentile, F. Ruffino, S. Boninelli, M. G. Grimaldi
A. Gentile, F. Ruffino, M. G. Grimaldi Department of Physics and Astronomy and MATIS CNR - IMM - University of Catania, via S. Sofia 64, 95123 Catania, Italy S. Boninelli IMM-CNR, via S. Sofia 64, 95123 Catania, Italy

16:30 **Versatile Functional Poly(3-hexylthiophene) for Hybrid Particles Synthesis by Grafting Onto Technique : Core@Shell ZnO Nanorods for PhotoVoltaic devices** **Q.PII 24**
Hussein Awada, Marie-Hélène Delville†, Roger C. Hiorns, Antoine Bousquet, Christine Dagron-Lartigau, Laurent Billon
IPREM CNRS-UMR 5254, Equipe de Physique et Chimie des Polymères, Université de Pau et des Pays de l'Adour, Hélioparc, 2 avenue Président Angot, 64053 Pau Cedex 9, France. † CNRS, Université de Bordeaux, ICMCB, 87 avenue du Dr A. Schweitzer, Pessac 33608, France.

16:30 **Influence of the interface combination of the graphene-TiO2 nanoparticles composites on their photocatalytic performance by Raman mapping** **Q.PII 25**
Yueli Liu, Yuqing Cheng, Zhuoyin Peng, Keqiang Chen, Wen Chen*
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, and School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, P. R. China

16:30 **Mechanical tuning of polymer/metal nanocomposites for soft actuators and brain machines interfacing** **Q.PII 26**
Claudio Melis*, Luciano Colombo**, Francesca Borghi**, Alessandro Podestà**, Cristian Ghisleri**,Paolo Milani**, Luca Ravagnan***
*Dipartimento di Fisica, Università di Cagliari **CIMAINA and Dipartimento di Fisica, Università di Milano ***WISE srl

16:30 **Vesicle-like Mesoporous SiO2 prepared by C12EO3 based Vesical Templating** **Q.PII 27**
Na DU, Juan QI, Wanguo HOU
Key laboratory for colloid and interface chemistry of education ministry, Shandong University, 250100, Jinan

16:30 **Hybrid thin films based on an acrylic polymer loaded with silica particles for corrosion protection of Al** **Q.PII 28**
F. Khelifa, M-E. Druart, Y. Habibi, Ph. Leclère, M. Olivier, Ph. Dubois
University of Mons, Institute of Research in Science and Engineering of Materials, Belgium

16:30 **Heterolayered Titanate-Graphene Hybrids with Novel Promising Functionalities for Photocatalyst and Antibacterial Matrix** **Q.PII 29**
In Young Kim, Jang Mee Lee, and Seong-Ju Hwang*
Department of Chemistry and Nano Sciences, Ewha Womans University, Seoul 120-750, Korea

16:30 **Nanofiller modified thermoplastic matrix composites** **Q.PII 30**
Cristina Ban , Adriana Stefan, Ion Dinca , George Pelin, Anton Ficai
Cristina Ban , Adriana Stefan, Ion Dinca , George Pelin- National Institute for Aerospace Research «Elie Carafoli» Bucharest- Materials Unit, Anton Ficai- Polytechnic University of Bucharest, Faculty of Applied Chemistry and Materials Science

16:30 **Engineering superhydrophobic hybrid ZnO/porous polymeric structures** **Q.PII 31**
A. Evanghelidis, N. Preda, C. Florica, I. Zgura, M. Socol, M. Enculescu, I. Enculescu
National Institute of Materials Physics, Magurele-Bucharest, P.O. Box MG-7, R-77125, Romania

16:30 **GaAs nanowire self-assembly: tailoring nanowire arrays towards surface functionalization** **Q.PII 32**
Stefania Carapezzi, Giacomo Priante, Laurent Montès, Silvia Rubini, Anna Cavallini
Department of Physics and Astronomy, University of Bologna, V.le Berti Pichat 6/2, 40127 Bologna, Italy; Istituto Officina dei Materiali del CNR, Laboratorio TASC, S.S.14, Km.163.5, I-34149 Trieste, Italy; IMEP-LAHC, MINATEC, Grenoble University, Giant Innovation Campus, 38016 Grenoble, France

16:30 **Hierarchical porous polymer scaffolds and hybrids from block copolymers** **Q.PII 33**
Hiroaki Sai, Kwan Wee Tan, Kahyun Hur, Emily Asenath-Smith, Robert Hovden, Yi Jiang, Mark Riccio, David A. Muller, Veit Elser, Lara A. Estroff, Sol M. Gruner, Ulrich Wiesner
Department of Materials Science and Engineering, Cornell University, Ithaca, NY 14853, USA.;Department of Materials Science and Engineering, Cornell University, Ithaca, NY 14853, USA.;Department of Materials Science and Engineering, Cornell University, Ithaca, NY 14853, USA.;Department of Materials Science and Engineering, Cornell University, Ithaca, NY 14853, USA.;School of Applied and Engineering Physics, Cornell University, Ithaca, NY 14853, USA.;Department of Physics, Cornell University, Ithaca, NY 14853, USA.;Cornell University Institute of Biotechnology, Cornell University, Ithaca, NY 14853, USA.;School of Applied and Engineering Physics, Cornell University, Ithaca, NY 14853, USA.;Department of Physics, Cornell University, Ithaca, NY 14853, USA.;Department of Materials Science and Engineering, Cornell University, Ithaca, NY 14853, USA.;Department of Physics, Cornell University, Ithaca, NY 14853, USA.;Department of Materials Science and Engineering, Cornell University, Ithaca, NY 14853, USA.

16:30 **Cellular interaction of surface charge controlled graphene oxide nanomaterials** **Q.PII 34**
Hyoung-Mi Kim1, Kitae Ryu2, Sung Hoon Kim3, Yoon Suk Kim3 Tae-il Kim2* and Jae-Min Oh1*
1 Department of Chemistry and Medical Chemistry, College of Science and Technology, Yonsei University, Wonju, Gangwondo 220-710, South Korea; 2Department of Biosystems and Biomaterials Science and Engineering, College of Agriculture and Life Sciences, Seoul National University Seoul 151-921 Korea; 3 Department of biomedical laboratory science, College of Health Sciences, Yonsei University, Wonju, Gangwondo 220-710, South Korea

16:30 **ELECTROSPUN DYE-DOPED NANOFIBERS WITH TUNEABLE EMISSIVE PROPERTIES** **Q.PII 35**
M. ENCULESCU, A. EVANGHELIDIS, C. BUSUIOC, N. PREDA, E. MATEI, C. FLORICA, A. COSTAS, M. OANCEA, I. ENCULESCU
National Institute of Materials Physics, Multifunctional Materials and Structures Laboratory, P.O. Box MG-7, Magurele-Bucharest, 077125, Romania

16:30 **Polymeric Composite Membranes Comprising Potassium Cation for Facilitated CO2 Transport Membrane** **Q.PII 36**
Sungjin Lee1, Jung Hyun Lee1, Sang Wook Kang2, Yong Soo Kang1
1Department of Energy Engineering, Hanyang University; 2 Department of Chemistry, Sangmyung University

16:30 **Polymer Structure and Dynamics in the proximity of Different Inorganic Nanoadditives** **Q.PII 37**
K. Chrissopoulou, H. Papananou, S. H. Anastasiadis
Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, Heraklion Crete, GREECE

16:30 **SIMULTANEOUS ELECTROPOLYMERIZATION AND ELECTRO-CLICK FUNCTIONALIZATION: A ONE-POT APPROACH FOR WIDELY TUNABLE SURFACES** **Q.PII 38**
Gaulthier Rydzek (a b) , Katsuhiko Ariga (a)
(a) World Premier International (WPI) Research Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS); (b) Japan Society for the Promotion of Science (JSPS), Japan

16:30 **From silk fibers to multifunctional hybrid materials** **Q.PII 39**
Rui F. P. Pereira [1,2], Maria M. Silva [1], Verónica de Zea Bermudez [2,3]
[1] Department of Chemistry, University of Minho, 4710-057 Braga, Portugal; [2] Department of Chemistry, University of Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal; [3] CQ-VR, University of Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal

16:30 **Pulsed Electromagnetic Field Induced Effects of Magnetic Nanoparticle-incorporated Human Bone Marrow-Mesenchymal Stem Cells on Spinal Cord Injured Rats** **Q.PII 40**
Dong Heon Lee[1], Hyunjin Cho[3], Yun-Kyong Choi[4], Jung-Keug Park[3,4] and Hyun Jung[1,2*]
[1] Advanced Functional Nanohybrid Material Laboratory, Department of Chemistry, Dongguk University-Seoul Campus 30 Pildong-ro 1-gil, Jung-gu, Seoul 100-715, Republic of Korea; [2] Department of Energy and Materials Engineering, Dongguk University-Seoul Campus 30 Pildong-ro 1-gil, Jung-gu, Seoul 100-715, Republic of Korea; [3] Dongguk University Research Institute of Biotechnology, Dongguk University-Seoul Campus 30 Pildong-ro 1-gil, Jung-gu, Seoul 100-715, Republic of Korea; [4] Department of Medical Biotechnology, Dongguk University-Seoul Campus 30 Pildong-ro 1-gil, Jung-gu, Seoul 100-715, Republic of Korea

16:30 **New smart systems based in Coordination Polymers Particles for Industrial or bio-applications** **Q.PII 41**
Fabiana Nador (1), Fernando Novio (1,2), Daniel Ruiz-Molina (1,2)
(1) ICN2 - Institut Catala de Nanociencia i Nanotecnologia, Campus UAB, 08193 Bellaterra (Barcelona), Spain. (2) CSIC - Consejo Superior de Investigaciones Cientificas, ICN2 Building, Campus UAB, 08193 Bellaterra (Barcelona), Spain.

16:30 **Carbon nanotube-grafted carbon fiber/epoxy hybrid composites and their interfaces** **Q.PII 42**
Luman Zhang1, Niels De Greef1, Jean-Pierre Locquet2 and Jin Won Seo1
1 Department of Materials Engineering, KU Leuven, 3001 Leuven, Belgium 2 Laboratory of Solid State Physics and Magnetism, KU Leuven, 3001 Leuven, Belgium

16:30 **[Eu(Phen)2]3+-Hectorite Embedded Polypropylene Nanocomposite Film with Bifunctional Photoluminescent and Superhydrophobic Properties** **Q.PII 43**
Aran Kim[1], Seung-Jin Ryu[2,3], Hyun Jung[1,*]
[1]Advanced Functional Nanohybrid Material Laboratory, Department of Chemistry, Dongguk University Seoul-campus, 30 Pildong-ro 1-gil, Jung-gu, Seoul 100-715, South Korea [2]Department of Chemistry, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 151-747, South Korea [3]National Forensic Service, 139 Jiyangno, Yangcheon-gu, Seoul 158-707, South Korea

16:30 **The Role of Ground Albedo of the SMARTS Code in Predicting the Performance of Polymer Solar Cells** **Q.PII 44**
A. Guechi, M. Chegaar, A. Merabet
Institute of Optics and Precision Mechanics, Ferhat Abbas University, 19000, Setif, Algeria; Physics Department, Ferhat Abbas University, 19000, Setif, Algeria.

16:30 **High Frequency Impedance Measurement for the relevant determination of setting times of Apatitic Cement** **Q.PII 45**
Christelle Despas(1), Verena Schnitzler(2), Pascal Janvier(3), Franck Fayon(4, 5), Dominique Massiot(4, 5), Jean-Michel Bouler(3), Bruno Bujoli(3), Alain Walcarius(1)
(1) LCPME, Université de Lorraine CNRS UMR 7564, 405 rue de Vandoeuvre 54600 Villers Lès Nancy, France; (2) Graftys SARL Eiffel Park bâtiment D 415 rue Claude Nicolas Ledoux, pôle d'activités d'Aix en Provence, 13854 Aix en Provence cedex 3, France; (3) CEISAM, Université de Nantes CNRS UMR 6230, 2 rue de la Houssinière BP92208, 44322 NANTES cedex 03, France ; (4) CEMHTI, CNRS, UPR 3079, 1D Avenue de la Recherche Scientifique, 45071 Orléans Cedex 02, France; (5) Université d'Orléans, Faculté des Sciences, Avenue du Parc Floral, 45067 Orléans Cedex 02, France

16:30 **Atomistic investigation of polymer crystallinity at the interface with different metal oxides** **Q.PII 46**
Maria Ilenia Saba [1], Alessandro Mattoni [1]
[1]CNR-IOM Cagliari

16:30 **Bio-nanohybrid materials for catalytic energy applications** **Q.PII 47**
S.S.Liji Sobhana, Joanna Nareswka, Pedro Fardim*
Laboratory of Fiber and Cellulose Technology, Åbo Akademi University, Porthansgatan 3, Turku/Åbo, Finland FI-20500

16:30 **DESIGN OF MULTIFUNCTIONAL MAGNETIC IRON OXIDE NANOPARTICLES** **Q.PII 48**
C. Tudisco1*,M. T. Cambria1, F. Sinatra2, V. Oliveri, 1 G. Vecchio, 1E. Fantechi,3 C. Sangregorio3,4, G. G. Condorelli1
1 Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR di Catania, v.le A. Doria 6, 95125 Catania, Italy, 2 Dipartimento "G. F. Ingrassia", Università di Catania, Via S.Sofia 87, 95100 Catania, Italy, 3Dipartimento di Chimica "U. Schiff", Università di Firenze and INSTM UdR, via della Lastruccia 3, Sesto Fiorentino,50019 Firenze,Italy 4CNR – ISTM, via C. Golgi 19, 20133 Milano, Italy

16:30 **Spatially confined functionalization of transparent NiO thin film with luminescent (1,10-phenanthroline)tris(2-thenoyltrifluoacetonate)Europium monolayer.** **Q.PII 49**
E. Smecca, 1 A. E. Giuffrida, 1 M. R. Catalano, 1 G. Malandrino, 1 G. G. Condorelli1
1 Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR di Catania, v.le A. Doria 6, 95125 Catania, Italy

16:30 **Structure and electrical memory response of on-crystal modified materials for molecular electronics** **Q.PII 50**
J. Puigmartí-Luis, M. Paradinas, R. Rodriguez, R. Pfattner, D. Amabilino, C. Ocal
Institut de Ciència de Materials de Barcelona-CSIC Campus UAB, 08193 Bellaterra (Spain)

16:30 **Bionanocomposites based on polysaccharides and fibrous clays** **Q.PII 51**
Ana C. S. Alcântara, Margarita Darder, Pilar Aranda*, and Eduardo Ruiz-Hitzky
Instituto de Ciencia de Materiales de Madrid, CSIC, Cantoblanco, 28049 Madrid, Spain

16:30 **Bio-inspired Plasmonic Bionanocomposites** **Q.PII 52**
Mady Elbahri1,2, Duygu Disci-Zayed 1, Ramzy Abdelaziz 1, Shahin Homaeigohar2
1Nanochemistry and Nanoengineering, Institute for Materials Science, Faculty of Engineering, Christian-Albrechts –University, Kiel, Germany 2 Institute of Polymer Research, Helmholtz-Zentrum Geesthacht, Nanochemistry and Nanoengineering, Germany

16:30 **Synthesis and analysis of stable, proton-conductive silica-based ionogels** **Q.PII 53**
Ruben Löbbicke, Fabrice Leoraux, Andreas Taubert
University of Potsdam; Universite Blaise Pascal Clermont-Ferrand; University of Potsdam

16:30 **Laser assisted high pressure induced polymerization of 2-(hydroxethyl) methacrylate.** **Q.PII 54**
E. Evlyukhin, L. Museur, A. Zerr, S. Nikitin, A. Kanaev
1 Laboratoire de Physique des Lasers - LPL CNRS, Université Paris 13, Sorbonne Paris Cité, 93430 Villetaneuse, France 2 Laboratoire des Sciences des Procédés et des Matériaux, CNRS, Université Paris 13, Sorbonne Paris Cité, 93430 Villetaneuse, France

16:30 **Hybrid OLEDs based on quantum dots and polyfluorene** **Q.PII 55**
T. Di Luccio*, S. Aprano, C. Borriello, A. Bruno, M. G. Maglione, C. Minarini
ENEA, UTTP-NANO, Centro Ricerche Portici, Portici (NA) I-80055 Italy

16:30 **Carbon Nanotube Composites by Combined Plasma Polymerisation Dielectrophoresis** **Q.PII 56**
Richard Stone, Leon Bowen, Karl Coleman, Mike Petty, Dagou Zeze
Durham University School of Engineering, Department of Physics, Department of Chemistry

16:30 **Hybrid nanomaterials used in weldable anti-corrosion coatings for the protection of steel.** **Q.PII 57**
Aurelie Rexach, Alan Taylor, Geoff Melton, Alec Gunner
TWI, Granta Park, Cambridge, CB21 6AL; TWI, Granta Park, Cambridge, CB21 6AL; TWI, Granta Park, Cambridge, CB21 6AL; TWI, Granta Park, Cambridge, CB21 6AL

16:30 **Enhanced stability of photoactive polymers blended with plasmonic nanoparticles** **Q.PII 58**
E. Stratakis1,2*, M. Sigletou1,2, C. Petridis3, G. Kakavelakis2,3, C. Fotakis1,2, E. Kymakis3
1) Institute of Electronic Structure and Laser, Foundation for Research & Technology Hellas, (IESL-FORTH), P.O. Box 1527, Heraklion 711 10, Greece 2) University of Crete, 710 03 Heraklion, Crete, Greece. 3) Technological Educational Institute (TEI) of Crete, Heraklion, 71003, Greece * stratak@iesl.forth.gr, phone: 00302810391274, fax: 0030-2810391305

16:30 **Controlling the Structure of Polymer/Inorganic Hybrid Nanocontainers obtained by Colloidal Methods** **Q.PII 59**
Rafael Muñoz-Espí, Matthew A. Hood, Alexander Schoth, Katharina Landfester
Max Planck Institute for Polymer Research, Mainz, Germany

16:30 **Bioinspired synthesis of composite Hybrid 3-D Scaffolds consisted of Nanosized Hydroxyapatite, Collagen and L-Arginine** **Q.PII 60**
D. Brasinika, A. Tsetsekou, G.P.A. Michanetzis, Y.F. Missirlis, T. Papadopoulos
National Technical University of Athens, School of Mining and Metallurgy Engineering; University of Patras, Department of Mechanical Engineering & Aeronautics; National and Kapodistrian University of Athens, School of Dentistry

16:30 **Bioinspired synthesis of hydroxyapatite nanocrystals and 3-D hybrid scaffolds, in the presence of chitosan and L-arginine.** **Q.PII 61**
D. Brasinika, G. Stergiou, A. Tsetsekou, O. Tsigkou, Y.F. Missirlis and T. Papadopoulos
National Technical University of Athens, School of Mining and Metallurgy Engineering; University of Patras, Department of Mechanical Engineering & Aeronautics; National and Kapodistrian University of Athens, School of Dentistry

16:30 **One pot two steps synthesis of water soluble functionalized gold nanoparticles** **Q.PII 62**
Romain Aufaure, Yoann Lalatonne, Laurence Motte and Erwann Guénin
Laboratoire CSPBAT (UMR7244) ; LPBS ; Université Paris 13 ; France

16:30 **Ordered dye-doped mono-amidosil hybrids** **Q.PII 63**
S. C. Nunes [1,2], R. A. S. Ferreira [3], L. D. Carlos [3], P. Almeida [1], V. de Zea Bermudez [2,4]
[1] Chemistry Department and CICS-UBI - Centro de Investigação em Ciências da Saúde, University of Beira Interior, 6200-506 Covilhã, Portugal; [2] Chemistry Department, University of Trás-os-Montes e Alto Douro, 5000-801 Vila Real, Portugal; [3] Physics Department and CICECO, University of Aveiro, 3810-193 Aveiro, Portugal; [4] CQ-VR, University of Trás-os-Montes e Alto Douro, 5000-801 Vila Real, Portugal

16:30 **DEPOSITION OF PHOTOSYSTEM 1 FILMS IN P-DOPED SILICON SURFACE TO IMPROVE THE EFFICIENCY OF BIO-PHOTOVOLTAIC CELLS** **Q.PII 64**
Carlos F. R. Facchini, Rafael V. Ribeiro, Paulo Mazzafera, Leandro T. Manera
School of Electrical and Computer Engineering P. Box 6101, University of Campinas 13083-970, Campinas, SP, Brazil; Center for Semiconductor Components P. Box 6061, University of Campinas 13083-870 Campinas, SP, Brazil; Department of Plant Biology, Institute of Biology P.Box: 6109, University of Campinas 13083-970, Campinas, SP, Brazil

16:30 **A novel high efficient organophosphorus based system for fireproofing of commercial epoxy resin** **Q.PII 65**
Ionela-Daniela Carja, Diana Serbezeanu, Tachita Vlad-Bubulac, Corneliu Hamciuc
«Petru Poni» Institute of Macromolecular Chemistry

16:30 **The influence of water content and co-solvent on the structuring of di-amidosils in acid-catalyzed conditions** **Q.PII 66**
S. C. Nunes [1,2], Vânia T. Freitas [3], R. A. S. Ferreira [3], L. D. Carlos [3], P. Almeida [1], V. de Zea Bermudez [2,4]
[1] Chemistry Department and CICS-UBI - Centro de Investigação em Ciências da Saúde, University of Beira Interior, 6200-506 Covilhã, Portugal; [2] Chemistry Department, University of Trás-os-Montes e Alto Douro, 5000-801 Vila Real, Portugal; [3] Physics Department and CICECO, University of Aveiro, 3810-193 Aveiro, Portugal; [4] CQ-VR, University of Trás-os-Montes e Alto Douro, 5000-801 Vila Real, Portugal

16:30 **Polysaccharide/siloxane hybrids for biomedical applications** **Q.PII 67**
N. Pereira, M. Fernandes, F. M. Nunes, V. de Zea Bermudez
Department of Chemistry and CQ-VR, University of Tras-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal

16:30 **Cell-by-Cell Laser Direct Writing for Cancer Research** **Q.PII 68**
D.B. Chrisey and T. Phamduy
D.B. Chrisey Tulane University; T. Phamduy Tulane University

16:30 **Design of nanostructured magnetic nanomaterials for catalytic, energy and biomedical applications** **Q.PII 69**
X. Liu1,2, S. Begin-Colin2, B. Pichon2, G. Melinte2, O. Ersen2, W. Baaziz1, C. Pham-Huu1 and D. Bégin1
1Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé (ICPEES, UMR 7515), CNRS-ECPM-University of Strasbourg, 25 rue de Becquerel, 67087 Strasbourg Cedex 02, France 2Institut de Physique et Chimie des Matériaux (IPCMS), UMR 7504, Université de Strasbourg-CNRS, 23 rue du Loess, BP 43, 67034, Strasbourg Cedex 2, France.

16:30 **OXIDATIVE ETHYL ACETATE PRODUCTION** **Q.PII 70**
Y. Gucbilmez1, I. Calis1, A.S.Guler2
1 Anadolu University, Department of Chemical Engineering 2 Bilecik Şeyh Edibali University, Department of Chemical and Process Engineering

16:30 **Functionalization of a layered oxide with organic moieties: towards hybrid proton conductors** **Q.PII 71**
A. Mossuto Marculescu(1), V. Renda(1), S. Di Tommaso(1,2), C. Tealdi(3), A. Martorana(1), F. Giannici(1)
(1) Dipartimento di Fisica e Chimica, Università di Palermo, Italy (2) Chimie ParisTech, Paris, France (3) Dipartimento di Chimica, Università di Pavia, Italy

30 May 2014

SESSION Q.13 : Seong-Ju Hwang

08:30 **Novel printable graphene hybrid materials with multifunctional properties** **Q.13 1**
L. Valentini1,2, J. M. Kenny1,2,3
1 Dipartimento di Ingegneria Civile e Ambientale, Università di Perugia, Strada di Pentima 4, 05100 Terni - Italy; 2 INSTM Consortium for Materials Science and Technology, Via Giusti 9, 50121 Firenze, Italy, Local Research Unit; 3 Institute of Polymer Science and Technology, CSIC, Juan de la Cierva 3, 28006 Madrid – Spain.

09:00 **Graphene-layered double hydroxide hybrids: synthesis, physical characterization and performance as efficient water oxidation electrocatalyst** **Q.13 2**
Gonzalo Abellán,1 Concha Bosch-Navarro,1 Jose G. Martínez,2 Carlos Martí-Gastaldo,1 Eugenio Coronado,1 Toribio F. Otero,2
1-Instituto de Ciencia Molecular, Universidad de Valencia, Catedrático José Beltrán 2, 46980, Paterna, Valencia, Spain. 2-Center for Electrochemistry and Intelligent Materials (CEMI), Universidad Politécnica de Cartagena, Aulario II, E-30203, Cartagena, Spain.

09:20 **Nanocellulose-graphene oxide as novel system for barrier membranes** **Q.13 3**
F. dal Moro (a,b), B. Wicklein (a), C. Aulin (b,c), L. Bergström (a,b), G. Salazar-Alvarez (a,b)
a: Stockholm University, Dept. of Environmental and Materials Chemistry, 10691 Stockholm, Sweden; b: Wallenberg Wood Science Center, Royal Institute of Technology, SE-10044 Stockholm, Sweden; c: Innventia AB, Box 5604, SE-11486 Stockholm, Sweden

09:40 **Engineering hybrid materials for catalysis: oxoclusters-reinforced hybrid materials for application in the catalytic oxidation of sulphur-based substrates** **Q.13 4**
Marilisa Vigolo[a], Mauro Carraro[a], Antonio Sorarù[a], Silvia Borsacchi[c], Marco Geppi[c], Silvia Gross[a,b]*
a)Dipartimento di Scienze Chimiche, Università degli Studi di Padova, via Marzolo, 1, I-35131, Padova, Italy b)Istituto per l'Energetica e le Interfasi, IENI-CNR and INSTM, UdR, via Marzolo, 1, I-35131, Padova, Italy c) Dipartimento di Chimica e Chimica Industriale Università di Pisa v. Risorgimento 35 56126 PISA (Italy)

10:00 **COFFEE BREAK**

SESSION Q.14 : Marie-Helene Delville

10:30 **Nanocomposite Membranes Containing Ionic Liquids/Copper Nanoparticles for Facilitated CO2 Transport** **Q.14 1**
Jung Hyun Lee1; Sang Wook Kang2; Yong Soo Kang1
1Department of Energy Engineering, Hanyang University; 2Department of Chemistry, Sangmyung University;

10:50 **Preparation and Performance of Organic-Inorganic Antioxidant for Polypropylene** **Q.14 2**
Yu Jiang, Pinggui Tang, Dianqing Li, Yongjun Feng
State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, 15 Beisanhuan East Road, 100029, Beijing, China

11:10 **Precise Control of Quantum Dot Location within the Co-Axial Hybrid Nanowires of Conjugated Polymer/QD via Solution Self-Assembly** **Q.14 3**
Yong-Jae Kim, Chul-Hee Cho, Inhye Kim, Bumjoon J. Kim, Eunji Lee
Graduate School of Analytical Science and Technology, Chungnam National University, Republic of Korea; Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology, Republic of Korea

11:30 **Theory-Assisted Design of Block Copolymer Directed Functional Hybrid Nanomaterials** **Q.14 4**
Ulrich Wiesner
Materials Science & Engineering Cornell University Ithaca, NY 14853, USA

12:00 **Lunch**

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM R

Towards lightweight and flexible electrochemical devices

Symposium Organizers:

Luis Pereira, Universidade Nova de Lisboa and CEMOP/UNINOVA, Caparica, Portugal

Silvia Bodoardo, Politecnico di Torino, Italy

Mats Sandberg, Printed Electronics, Norrköping, Sweden

Sami Oukassi, CEA/LITEN, Grenoble, France

Vito Lambertini, Centro Ricerche Fiat S.C.p.A, Torino, Italy

Published in a Special Issue of ElectroChimica Acta

SMART-FC
HETEROGENEOUS INTEGRATION OF AUTONOMOUS SMART FILMS BASED ON ELECTROCHROMIC TRANSISTORS

CENTRO RICERCHE FIAT

cemop UNINOVA

FCT FACULDADE DE CIÊNCIAS E TECNOLOGIA UNIVERSIDADE NOVA DE LISBOA

28 May 2014

Japan in Motion Workshop : -

08:30 **Japan in Motion workshop** — I 1
-
-

10:00 **Coffee break**

Flexible Devices - I : Kisuk Kang

10:30 **SMARTE-EC - Heterogeneous integration of autonomous smart films** — R.II 1
FP7 project
-

11:00 **All-paper Li-ion batteries: towards new materials and processes for flexible Li-ion cells** — R.II 2
Davide Beneventi,1,* Didier Chaussy,1 Claudio Gerbaldi,2 Nerino Penazzi,2
1, Grenoble Institute of Technology (LGP2, UMR 5518 CNRS-Grenoble-INP-AGE-FPI), Domaine Universitaire, 461 rue de la Papeterie, BP 65, 38402 St. Martin d'Hères, France. 2, Department of Materials Science and Chemical Engineering, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy.

11:30 **Paper electrochemical devices based on metal oxide semiconductor and thermosetting composite solid state electrolyte** — R.II 3
P.J. Wojcik (a), D. Gaspar (a), A. Delattre (b), L. Pereira (a), R. Martins (a), E. Fortunato (a)
(a) Departamento de Ciencia dos Materiais, FCT-UNL, Cenimat – I3N and Cemop-Uninova, Campus de Caparica, 2829-516 Caparica, Portugal. (b) Centre Technique du Papier, BP 251, 38044 Grenoble Cedex 9, France

11:45 **Thin film flexible batteries on polyimide substrate** — R.II 4
C. Giroud-Garampon, S. Oukassi, J-M boissel, R . Salot
CEA GRENOBLE LETI/DCOS/SCPE/LMBE

12:00 **Flexible, System Integrated Energy Storage** — R.II 5
Dan Steingart
Department of MAE, Princeton University, Princeton, NJ 08544

12:30 **Lunch**

Flexible devices II : Dan Steingart

14:00 **Organic nanohybrid for fast and sustainable energy storage** — R.III 1
Kisuk Kang
Department of Material Science and Engineering Seoul National University

14:30 **Flexible High Performance Single-Crystal Organic-Inorganic Hybrid Solar Cells** — R.III 2
Jie Zhang; Baoquan Sun
Jiangsu Key Laboratory for Carbon-Based Functional Materials and Devices, Institute of Functional Nano and Soft Materials (FUNSOM), Soochow University, Suzhou 215123, Jiangsu, China

14:45 **Room-Temperature-Grown ZnO Nanostructured Anodes on Plastic Substrates with Templates for Flexible Dye-Sensitized Solar Cells** — R.III 3
Shou-Yen Lin, Jih-Jen Wu
Department of Chemical Engineering, National Cheng Kung University, Tainan, Taiwan

15:00 **Enhanced light-harvesting of the conical TiO2 nanotube arrays used as the photoanodes in flexible dye-sensitized solar cells** — R.III 4
Yueli Liu, Yuqing Cheng, Keqiang Chen, Guojie Yang, Wen Chen
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, and School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, P. R. China

15:15 **THIN FILM BATTERIES AND ELECTROCHROMATIC ON FLEXIBLE FOILS** — R.III 5
R. Salot, S. Oukassi, M. Bedjaoui, S. Martin
CEA LETI, 17 Rue des Martyrs, F-38054 Grenoble, France

15:45 **Coffee break**

29 May 2014

Electrodes : Francesca Soavi

08:30 **Electrochemical properties of bias sputtered LiCoO2 thin films in liquid electrolyte** — R.IV 1
S. Tintignac1, 2, R . Baddour-Hadjean1, J. P. Pereira-Ramos1 and R. Salot2
1-Institut de Chimie et des Matériaux Paris Est, ICMPE/GESMAT, UMR 7182 CNRS-Université Paris Est Créteil (UPEC), 2 rue Henri Dunant 94320 Thiais, France, 2- DRT/LITEN/DTNM/LCMS, CEA Grenoble, 17 rue des Martyrs 38054 Grenoble, France

09:00 **Synergic exfoliation of graphene with organic molecules and inorganic ions for the electrochemical production of flexible electrodes** — R.IV 2
Zhen Yuan Xia[a], Giuliano Giambastiani[b], Christos Christodoulou[c], Marco V. Nardi[c], Norbert Koch[a], Emanuele Treossi,[a,d] Vittorio Bellani[e], Sergio Pezzini[e], Franco Corticelli[f], Vittorio Morandi[f], Alberto Zanelli[a], Vincenzo Palermo*[a,d]
[a] Istituto per la Sintesi Organica e la Fotoreattività - Consiglio Nazionale delle Ricerche, via Gobetti 101, 40129 Bologna (Italy) ; [b] Istituto di Chimica dei Composti OrganoMetallici - Consiglio Nazionale delle Ricerche, via Madonna del Piano 10, 50019 Sesto Fiorentino (Italy); [c] Humboldt-Universität zu Berlin, Institut für Physik, Brook-Taylor-Straße 6, D-12489 Berlin, Germany; [d] Laboratorio MIST.E-R Bologna, via Gobetti 101, 40129 Bologna (Italy); [e] Dipartimento di Fisica and CNISM, Universitá degli Studi di Pavia, via Bassi 6, 27100 Pavia, Italy; [f] Istituto per la Microelettronica e Microsistemi - Consiglio Nazionale delle Ricerche, via Gobetti 101, 40129 Bologna, Italy;

09:15 **VERSATILE HYDROTERMAL PREPARATION OF THIN FILMS OF WO3 NANOSTRUCTURES FOR LOW POTENTIAL AND HIGH PERFORMANCES ELECTROCHROMIC CATHODES.** — R.IV 3
S. Vankova, S. Zanarini, S. Bodoardo, J. R. Nair, C. Francia, N. Penazzi
GAME Lab, Dept. Applied Science and Technology - DISAT, Politecnico di Torino, Italy

09:30 **LiCoO2 thin film deposition for lithium microbatteries: the promising electrochemical-hydrothermal route** — R.IV 4
T. Azib, H. Porthault, F. Le Cras, R. Salot
CEA Grenoble LETI/DCOS/LMBE

09:45 **Investigation on the addition of isovalent ions (Ca,Mg) on the properties of LiCo1-xMxPO4 (M = Ca, Mg; 0 ≤ x ≤ 0.1) – graphitic carbon foams composites** — R.IV 5
C Spanheimer, J-C Jaud, D. Becker, *L Dimesso, W Jaegermann
Technische Universitaet Darmstadt, Geo and Materials Science Department, Jovanka-Bontschits-Strasse 2, D-64287 Darmstadt (Germany)

10:00 **Coffee break**

Bio-electrochemical devices : Dasgupta Subho

10:30 **From electrochemical sensor for biomedical applications to body-wearable sensing platforms** — R.V 1
Romain Coppard*, Cedric Goyer°, Gilles Marchand°, Pascal Mailley°
CEA 17 rue des martyrs 38054 Grenoble cedex 9, France *LITEN-DTNM, °LETI-DTBS,

11:00 **Flexible and biocompatible pH sensor based on WO3 nanoparticles** — R.V 2
L. Santos, J. P. Neto, P. Barquinha, L. Pereira, R. Martins, E. Fortunato
CENIMAT/I3N, Departamento de Ciência de Materiais, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa and CEMOP/UNINOVA, Campus da Caparica, 2829-516 Caparica - Portugal

11:15 **Fabrication of a flexible microfluidic sensor** — R.V 3
B.Medina-Rodriguez, N. Bonet, F. Ramos
FAE- Francisco Albero S.A.U., Rafael Barradas 19, L'Hospitalet de Llobregat 08908, Spain

11:30 **Iontronics for Transduction of Electronic Signals into Biological Stimuli** — R.V 4
Klas Tybrandt 1,2, Erik Gabrielsson 1, Karin Larsson 3, Agneta Richter-Dahlfors 3, Magnus Berggren 1
1. Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, Sweden 2. Laboratory of Biosensors and Bioelectronics, Institute for Biomedical Engineering, ETH Zurich, Switzerland 3. Department of Neuroscience, Karolinska Institutet, Sweden

12:00 **Low Cost Point-of-Care Diagnostics Using Electrochemistry in Paper Microfluidic Devices** — R.V 5
Scott T. Phillips
The Pennsylvania State University Department of Chemistry

12:30 **Lunch**

Electrodes II and contacts : Jean Pereira-Ramos

14:15 **Electrospray: A Novel Technique for Carbon-based Flexible Devices** — R.VI 1
A. Varea(1), E. Xuriguera(1), B. Medina-Rodriguez(1,2), S. Claramunt(1), O. Monereo(1), A. Cirera(1)
(1) MIND-IN2UB, Electronics Department, Universitat de Barcelona, Martí i Franquès 1, 08028, Barcelona, Spain (2) FAE- Francisco Albero S.A.U., Rafael Barradas 19, L'Hospitalet de Llobregat 08908, Spain.

14:30 **Atmospheric Spatial-ALD of multimetal oxides** — R.VI 2
A.Illiberi1*, A. Sharma1, B. de Raadt1, S. Gazibegovic1, B. Coob1, F. Roozeboom1,2, G. Gelinck1, P. Poodt1
1 Holst Centre/TNO, PO Box 6235, 5600 HE Eindhoven, The Netherlands 2 Department of Applied Physics, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands

14:45 **Structural, optical, spectroscopic and electrical properties of Mo-doped ZnO thin films grown by RF magnetron sputtering** — R.VI 3
I. Soumahoro1, S. Colis1, G. Schmerber1, C. Leuvrey1, S. Barre1, C. Ulhaq-Bouillet1, D. Muller2, M. Abd-lefdil3, N. Hassanain3, J. Petersen4, A. Berrada3, A. Slaoui2, A. Dinia1
1 Institut de Physique et Chimie des Matériaux de Strasbourg, 23 rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France 2 Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, Département Electronique du Solide, Systèmes et Photonique, 23 Rue du Loess, BP 20, 67037 Strasbourg Cedex 2, France 3 Laboratoire de Physique des Matériaux, Faculté des Sciences, BP 1014, Rabat, Morocco 4 Department of Advanced Materials and Structure, Centre de Recherche Public Henri Tudor, 66 rue du Luxembourg, Esch/Alzette 4002, Luxembourg

15:00 **Facile Fabrication of Highly Flexible, Binder-Free Graphene Paper Electrodes for Lithium-Ion Batteries** — R.VI 4
Mokwon Kim, Do Youb Kim, O Ok Park
Mokwon Kim and O Ok Park - Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon 305-701, Republic of Korea; Do Youb Kim - Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 305-600, Republic of Korea

15:15 **CuInS2/Mn-CdS quantum dot co-sensitized flexible solar cells based on single fibrous TiO2 nanowire arrays** — R.VI 5
Zhuoyin Peng, Yueli Liu, Yinghan Zhao, Keqiang Chen, Yuqing Cheng, Wen Chen
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, and School of Material Science and Engineering, Wuhan University of Technology, Wuhan 430070, P. R. China

15:30 **Coffee break**

Functional Organics : Pascal Mailley

16:00 **Structure-property relationships and technological applications of redox switchable organic conjugated materials** — R.VII 1
Riccardo Ruffo, Luca Beverina
Dipartimento di Scienza dei Materiali, Università degli Studi di Milano Bicocca

16:30 **Electrospun polymer nanofiber waveguide doped with an ionic transition metal complex** **R.VII 2**
Yuya Ishii, Ryohei Kaminose, Shota Satozono, Keisho Omori, and Mitsuo Fukuda
Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology

16:45 **Temperature dependent characteristics of composite electrolytes in an electrolyte gated inorganic transparent transistor** **R.VII 3**
Falk von Seggern, Subho Dasgupta, Robert Kruk, Horst Hahn
1) Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany (all authors)
2) Joint Research Laboratory Nanomaterials, Technische Universität Darmstadt and KIT, Petersenstr. 32, 64287 Darmstadt, Germany (Falk von Seggern; Horst Hahn)

17:00 **Highly stable gel electrolytes for dye solar cells based on in-situ cross-linkable iodopropyl-branched polydimethylsiloxanes** **R.VII 4**
Gian Luca De Gregorio, Michele Manca*, Rita Agosta, Roberto Giannuzzi and Giuseppe Gigli
Center for Biomolecular Nanotechnologies - Fondazione Istituto Italiano di Tecnologia - Via Barsanti snc - 73010 Arnesano (Lecce) - ITALY

17:15 **Density functional theory calculations of molecular structures of poly(vinylidene fluoride) (PVDF) for the purpose of improving the piezoelectric effect** **R.VII 5**
Martin Bohlén, Kim Bolton
University of Borås – School of Engineering, Allégatan 1, 501 90 Borås, Sweden

Poster session : Ricardo Ruffo

17:30 **Optoelectronic and electrochemical properties of Al-doped ZnO films prepared by MF sputtering** **R.PI 1**
Qian Shi, Fang Hu, Kesong Zhou, Mingjiang Dai, Songsheng Lin,
Guangdong General Research Institute of Industrial Technology

17:30 **Stretchable Organic/Inorganic Hybrid Thin-Film Transistors Fabricated on Poly(dimethylsiloxane) Elastomer** **R.PI 2**
Soon-Won Jung, Chan Woo Park, Bock Soon Na, Jeong Seon Choi, Sang Chul Lim, Sang Seok Lee, Kyoung Ik Cho, Hye Yong Chu, and Jae Bon Koo
Components and Materials Research Laboratory, Eectronics and Telecommunications Research Institute

17:30 **Cost-effective plasma process for adhesion control of plastic substrates for flexible electronics manufacturing** **R.PI 3**
Woo Seok Kang, Min Hur, Jae-Ok Lee, Young-Hoon Song
Korea Institute of Machinery & Materials

17:30 **THREE-COLORS ELECTROCHEMICALLY-SWITCHABLE LITHIATED VANADIUM OXIDE FILMS FROM FACILE SOLID STATE SYNTHESIS** **R.PI 4**
S. Zanarini a, F. Di Lupo a, A. Bedini b, J. Amici a, J. R. Nair a, N. Penazzi a, S. Bodoardo a
a: GAME Lab, Dept. Applied Science and Technology - DISAT, Politecnico di Torino, Italy; b: Rockwood Italia S.p.A., Torino, Italy;

17:30 **A facile approach to design flexible graphene paper for supercapacitor applications** **R.PI 5**
Sumit Mandal, Shyamal K. Saha
Department of Materials Science; Indian Association for the Cultivation of Science; Jadavpur, Kolkata, 700032, India

17:30 **Ordered nanostructures of conducting polymers** **R.PI 6**
Su yeon Choi, Young Moo Jeon, Jun hyeop An and Seung Hyun Kim*
Division of Nano-systems Engineering, Inha University

17:30 **Hybrid elastomeric substrate for stretchable electronic circuits** **R.PI 7**
Chan Woo Park, Soon Won Jung, Bock Soon Na, Sang Chul Lim, Sang Seok Lee, Kyung Ik Cho, Hye Yong Chu, Jae Bon Koo
Next Generation Display Research Department, Electronics and Telecommunications Research Institute (ETRI)

17:30 **Fabrication of patterned flexible and transparent electrode using silver nanowires and fine etched glass substrate** **R.PI 8**
Jinhwan Lee, Jinha Kim, Seung Hwan Ko, Seung Seob Lee
Department of Mechanical Engineering, Korea Advanced Istitute of Science and Technology (KAIST), 291 Daekar-ro, Yuseong-gu-Daejeon, 305-701, Korea

17:30 **Functionalization of Printed Metal-Particle Suspensions by Millisecond Thermal Processing** **R.PI 9**
Katarzyna Wiesenhuetter, Thomas Schumann, Ralf Zichner, Thoralf Gebel, Ulrich Wiesenhuetter, and Wolfgang Skorupa
Helmholtz-Zentrum Dresden Rossendorf (HZDR), Institute of Ion Beam Physics and Materials Research, Dresden, Germany; Helmholtz-Zentrum Dresden Rossendorf (HZDR), Institute of Ion Beam Physics and Materials Research, Dresden, Germany; Fraunhofer Institute for Electronic Nano Systems (ENAS), Chemnitz, Germany; DTF Technology GmbH – Dresden Thin Film Technology, Dresden, Germany; Helmholtz-Zentrum Dresden Rossendorf (HZDR), Institute of Ion Beam Physics and Materials Research, Dresden, Germany; Helmholtz-Zentrum Dresden Rossendorf (HZDR), Institute of Ion Beam Physics and Materials Research, Dresden, Germany

17:30 **pH effect on the electrochemical properties of the hydrothermally grown V2O5** **R.PI 10**
M. Apostolopoulou1, D. Louloudakis2,3*, D. Vernardou3, N. Katsarakis3,4,5, E. Koudoumas3,4
1 Department of Materials Science and Technology, University of Crete, 710 03, Heraklion, Crete, Greece 2 Department of Physics, University of Crete, 710 03 Heraklion, Crete, Greece. 3 Center of Materials Technology and Photonics, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece 4 Electrical Engineering Department, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece 5 Institute of Electronic Structure and Laser, Foundation for Research & Technology-Hellas, P.O. Box 1527, Vassilika Vouton, 711 10 Heraklion, Crete, Greece *corresponding author, e-mail:dimitr17@yahoo.gr Tel: +30 2810 379774

17:30 **Hydrothermal growth and characterization of vanadium oxide coatings using VOSO4 as precursor** **R.PI 11**
M. Apostolopoulou1, D. Louloudakis2,3*, D. Vernardou3, N. Katsarakis3,4,5, E. Koudoumas3,4
1 Department of Materials Science and Technology, University of Crete, 710 03, Heraklion, Crete, Greece 2 Department of Physics, University of Crete, 710 03 Heraklion, Crete, Greece. 3 Center of Materials Technology and Photonics, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece 4 Electrical Engineering Department, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece 5 Institute of Electronic Structure and Laser, Foundation for Research & Technology-Hellas, P.O. Box 1527, Vassilika Vouton, 711 10 Heraklion, Crete, Greece *corresponding author, e-mail:dimitr17@yahoo.gr Tel: +30 2810 379774

17:30 **Polyimide/Polydimethylsiloxane Hybrid Stretchable Substrate** **R.PI 12**
Bock Soon Na *, Chan Woo Park, Soon-Won Jung, Sang Chul Lim,Sang Seok Lee, Kyoung Ik Cho, Hye Yong Chu, and Jae Bon Koo
Electronics and Telecommunications Research Institute

17:30 **Inverted polymer light-emitting diodes with solution-processed multilayers using diluted PEDOT:PSS** **R.PI 13**
Jongjang Park, Jaeheung Ha, Kyungji Kim, Changhee Lee, Yongtaek Hong
1. Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea 2. Inter-University Semiconductor Research Center, Seoul National University, Seoul, Korea

17:30 **Large area flexible organic light emitting diodes with extreme bendability** **R.PI 14**
Cheolyoung Park1, Jae Seok An1, Ha Jun Jang1,2, Bum Ho Choi1* and Jong Ho Lee1
1National Center for Nanoprocess and Equipments, Korea Institute of Industrial Technology, Gwangju, 500-480, Korea; 2Advanced Chemical & Engineering, Chonnam National University, Gwangju 500-757, Korea

17:30 **Transparent conductive film of nanotubes for flexible electronics.** **R.PI 15**
Akhmadishina K.F., Bobrinetskiy I.I., Yemelyanov A.B.,Komarov I.A., Nevolin V.K.
National Research University of Electronic Technology (MIET), Zelenograd, Russia

17:30 **Fabrication and characterization of direct patterned ITO anode layer for application to flexible OLEDs** **R.PI 16**
Se Yeon Park, Jae Seok An, Cheol Young Park, Ha Jun Jang, Jong Ho Lee, Bum Ho Choi
National Center for Nanoprocess and Equipment, Korea Institute of Industrial Technology

17:30 **Flexible Oxide Thin-film Transistor Fabricated on Plastic Substrates for Flexible Displays** **R.PI 17**
Dedong Han*, Zhuofa Chen, Nannan Zhao, Yingying Cong, Jing Wu, Feilong Zhao, Junchen Dong, Xing Zhang, Shengdong Zhang, Yi Wang, Lifeng Liu*
Institute of Microelectronics, Peking University

17:30 **Synthesis of Lithium Vanadium Oxides by Solution Processing for Electrochromic Devices** **R.PI 18**
Ana C. G. Santos, Joana V. Pinto, Luís M. N. Pereira, Elvira Fortunato, Rodrigo Martins
Departamento de Ciência dos Materiais/CENIMAT, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, and CEMOP/UNINOVA, Campus da Caparica, 2829-516 Caparica, Portugal

17:30 **Direct growth of TiO2 nanorod arrays on Ti foil for flexible supercapacitor applications** **R.PI 19**
Zhi Zheng, Jiajun Chen, Weilie Zhou
Advanced Materials Research Institute, University of New Orleans, New Orleans, Louisiana 70148

17:30 **In-situ SAXS/DSC/WAXD Study of the Temperature Evolution in Nanocomposite Polymer Electrolytes with Different Nanofillers** **R.PI 20**
A. Turkovic1, K. Juraic1, P. Dubcek1, S. Bernstorff2
1 Ruđer Bošković Institute, Bijenička c. 54, 10000 Zagreb, Croatia; 2 Elettra-Sincrotrone Trieste, SS. 14, km 163,5 Basovizza, 34149 Trieste, Italy

17:30 **Surface properties tuning of functionalized flexible materials for implantable microsystems development** **R.PI 21**
L. Guedri-Knani, M. Khelifa, C. Dridi, N. Yaakoubi
Université de Sousse, ISSAT de Sousse, 4003Ibn Khaldoun Sousse, Tunisia / Université de Monastir, Faculty of Sciences of Monastir, LIMA, Tunisia / Université du Maine, ENSIM, Laboratoire d'Acoustique de l'UM, Le Mans, France

17:30 **Electrodeposited Polyethylenedioxythiophene with Infiltrated Gel Electrolyte Interface: A Close Contest of an All-Solid-State Supercapacitor with its Liquid-State Counterpart** **R.PI 22**
Bihag Anothumakkool and Sreekumar Kurungot
Physical and Materials Chemistry Division, National Chemical Laboratory, Pune-411008, Maharashtra, India

17:30 **Ultra-Thin Metal/Dielectric Transparent Film for Optoelectronic Devices** **R.PI 23**
Illhwan Lee and Jong-Lam Lee
POSTECH

30 May 2014

Printing deposition : Klas Tybrandt

08:30 **Printed and low-temperature processed oxide field-effect transistors** **R.VIII 1**
S. K. Garlapati, B. Nasr, T. T. Baby, F. vonSeggern, G. Stoesser, R. Kruk, H. Hahn, S. Dasgupta
Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

09:00 **Sol-gel derived tungsten oxide inks** **R.VIII 2**
Tjaša Vidmar, Marko Topič, Urša Opara Krašovec
University of Ljubljana, Faculty of Electrical Engineering, Tržaška cesta 25, 1000 Ljubljana, Slovenia

09:15 **Snail Trail Printing** **R.VIII 3**
Gady Konvalina, Alexander Leshansky and Hossam Haick
The Department of Chemical Engineering and Russell Berrie Nanotechnology Institute, Technion – Israel Institute of Technology, Haifa 3200003, Israel

09:30 **Flexible polymer light-emitting diodes with conductive polymer electrode deposited by inkjet printing process** **R.VIII 4**
Jaeheung Ha, Jongjang Park, Jewook Ha, Donghyun Kim, Kyungji Kim, Changhee Lee, and Yongtaek Hong
1. Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea 2. Inter-University Semiconductor Research Center, Seoul National University, Seoul, Korea

09:45 **Inkjet printing manufacturing of complex oxide electroceramics thin films** **R.VIII 5**
Mar Tristany1, Marta Vilardell2, Susagna Ricart1, Xavier Granados1, Roxana Vlad2, Albert Calleja2, Teresa Puig1, Xavier Obradors1
1 Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, E-08193 Bellaterra , Barcelona, Catalonia (Spain). 2 Oxolutia S.L., Edifici Eureka, PRUAB, Campus de la UAB, 08193 Bellaterra, Spain.

10:00 **Coffee break**

Capacitors : Scott Philips

10:30 **Capacitive electrode materials for micro-electrochemical devices with IL-based electrolytes** **R.IX 1**
Francesca Soavi1, Catia Arbizzani1, Simone Monaco1, Clara Santato2, Jonathan Sayago2, Fabio Cicoira3, Luca Giacomo Bettini4, Paolo Piseri4
1Department of Chemistry "Giacomo Ciamician", University of Bologna, Via Selmi 2, 40126 Bologna, Italy 2Département de Génie Physique, École Polytechnique de Montréal, 6079, Succ. Centre Ville, H3C 3A7, Canada 3 Département de Génie Chimique, École Polytechnique de Montréal, 6079, Succ. Centre Ville, H3C 3A7, Canada 4 CIMAINA and Physics Department, University of Milano, Via Celoria, 16 - 20133 Milano, Italy

11:00 **Form Factor of Graphite Oxide Supercapacitors: Electrode Geometry** **R.IX 2**
A.D. Tiliakos, I. Stamatin
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, 405 Atomistilor str., P.O. Box 38, Bucharest-Magurele, 07712, Romania

11:15 **Hydrothermal-Electrochemical Deposition of Manganese Oxides as Electrode Materials for Electrochemical Capacitors** **R.IX 3**
F.Eylül Saraç, Uğur Ünal
Graduate School of Science and Engineering, Koç University, Istanbul, Turkey; Department of Chemistry, Koç University, Istanbul, Turkey

11:30 **Polyethylenedioxythiophene paper for highly flexible and thin supercapacitor and Pt - and TCO free counter electrode in DSSC's** **R.IX 5**
Bihag Anothumakkool and Sreekumar Kurungot
Physical and Material Chemistry Division, CSIR-National Chemical Laboratory, Pune, India

11:45 **Lunch**

SYMPOSIUM S

Memristor materials, mechanisms and devices for unconventional computing

Symposium Organizers:

Victor Erokhin, University of Parma and CNR-IMEM, Italy

Julie Grollier, CNRS/Thales lab, Palaiseau, France

Andrew Adamatzky, University of West England, Bristol, UK

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26 May 2014

Memristor and devices with memory : A.Thomas

09:15 **Analog Computing with Memristive Circuits** S.1 1
Dmitri B Strukov
UC Santa Barbara

09:45 **Memristors in the development of high-performance computing systems** S.1 2
Alexander Galushkin
Moscow Institute of Physics and Technology

10:00 **Coffee break**

Resistive switching : M. Salinga

10:30 **Fundamental ingredients of redox-based resistive switching (ReRAM) devices** S.2 1
Rainer Waser, Ilia Valov, Regina Dittmann, Stephan Menzel
Forschungszentrum Jülich, 52425 Jülich, and IWE2, RWTH Aachen University, 52056 Aachen, Section Fundamentals of Future Information Technology (JARA-FIT), Germany

11:00 **Comparison of preindustrial non-volatile memories used as memristive devices** S.2 2
D. Querlioz, A. F. Vincent, O. Bichler, M. Suri, W. S. Zhao, J.-O. Klein, S. Retailleau, C. Gamrat, B. De Salvo
Univ. Paris-Sud, Univ. Paris-Sud, CEA LIST, CEA LETI, Univ. Paris-Sud, Univ. Paris-Sud, Univ. Paris-Sud, CEA LIST, CEA LETI

11:15 **New Strained Memristive Oxide Switch Concepts: Materials and Devices** S.2 3
S. Schweiger, M. Kubicek, J.L.M. Rupp
Electrochemical Materials, Department of Materials Science, ETH Zurich, Switzerland

11:30 **Silicon oxide ReRAM** S.2 4
Adnan Mehonic, Mark Buckwell, Luca Montesi Manveer Munde, Anthony Kenyon
Department of Electronic & Electrical Engineering - University College London

11:45 **Microscopic and spectroscopic analysis of the nature of conductive filaments in silicon-rich silicon oxide** S.2 5
Mark Buckwell, Adnan Mehonic, Luca Montesi Manveer Munde, Anthony Kenyon
Department of Electronic & Electrical Engineering - University College London

12:00 **Materials Engineering of the Switching Layer for Novel Memristive Devices** S.2 6
Hao Jiang, Can Li, and Qiangfei Xia
Nanodevices and Integrated Systems Lab, Department of Electrical and Computer Engineering, University of Massachusetts, Amherst, MA 01003, USA

12:15 **Influence of composition on the resistive switching properties of ALD grown SrTiO3 thin films** S.2 7
S. Hoffmann-Eifert; N. Aslam; V. Longo*; F. Roozeboom*; W.M.M. Kessels*; and R. Waser
Peter Gruenberg Institute (PGI-7) and JARA-FIT, Forschungszentrum Juelich, Germany; *Department of Applied Physics, Eindhoven University of Technology, The Netherlands

12:30 **Lunch**

Systems and modelling : M. Frasca

14:00 **Memcomputing: a computing paradigm to store and process information on the same physical platform** S.3 1
M. Di Ventra and Y. Pershin
Department of Physics, UCSD

14:30 **Non-Ideal Memristors in a Non-Ideal World** S.3 2
Ella Gale
University of the West of England

14:45 **Memory properties of MIN, MAX gates using memristor implementation** S.3 3
M. Klimo, E.Linn, M. Fratrik, P. Jancovic, O. Such, K. Frohlich
University of Zilina, Slovakia;RWTH Aachen, Germany; University of Zilina, Slovakia; IEE SAS, Slovakia; MI SAS, Slovakia; IEE SAS, Slovakia

15:00 **Employing Threshold-based Behavior and Network Dynamics for the Creation of Memristive Logic Circuits and Architectures** S.3 4
Ioannis Vourkas, Georgios Ch. Sirakoulis
Department of Electrical and Computer Engineering, Democritus University of Thrace

15:15 **Memristors under the Influence of Noise and Temperature** S.3 5
G.A. Patterson, F.N. Sangiuliano Jimka, P.I. Fierens, D.F. Grosz
Instituto Tecnologico de Buenos Aires; Instituto Tecnologico de Buenos Aires; Instituto Tecnologico de Buenos Aires, Consejo Nacional de Investigaciones Cientificas y Tecnicas (Arg.); Instituto Tecnologico de Buenos Aires, Consejo Nacional de Investigaciones Cientificas y Tecnicas (Arg.)

15:30 **Minimal memristor model for a semiconductor axon** S.3 6
Qurat-ul-ann (Anna) Mirza, Yogesh N. Joglekar
Indiana University Purdue University Indianapolis (IUPUI)

15:45 **Memristive Sorting Networks** S.3 7
Fratrik Milan, Klimo Martin, Skvarek Ondrej, Such Ondrej
University of Zilina, Faculty of Management Science and Informatics, Department of InfoComm Networks

16:00 **Coffee break**

Bio-inspired systems : V. Privman

16:30 **Organic Synapstor for Unconventional Computing and Biocompatible Applications.** S.4 1
D. Vuillaume
IEMN, CNRS & Univ. of Lille, Villeneuve d'Ascq, France.

17:00 **Bio-inspired information processing with memristor switching networks** S.4 2
Zoran Konkoli, Göran Wendin
Microtechnology and Nanoscience, Chalmers University of Technology, SE-41296 Gothenburg, Sweden

17:15 **Organic memristor device: fabrication, working principles and interfacing with living systems for unconventional computing.** S.4 3
Tatiana Berzina
CNR-IMEM (National Council of the Researches – Institute of Materials for Electronics and Magnetism), Parco Area delle Scienze 37A, 43124, Parma, Italy

17:30 **Memristors-based adaptive synchronization in networks of nonlinear circuits** S.4 4
A. Buscarino, L. Fortuna, M. Frasca, L.V. Gambuzza
DIEEI, University of Catania

17:45 **ATOMIC SWITCH: Synaptic functionalities and integration strategies** S.4 5
Selina La Barbera, David Guerin, Dominique Vuillaume, Fabien Alibart
IEMN-CNRS, Avenue Poincaré - BP 60069 - 59652 Villeneuve d'Ascq cedex

Poster 1 : C.S. Hwang

18:00 **Effect of oxygen content on resistive switching properties of room temperature deposited TiO2-x films** S.P10 1
Panagiotis Bousoulas, Irini Michelakaki, Dimitris Tsoukalas
Department of Applied Physics, National Technical University of Athens, Iroon Polytechniou 9 Zografou, 15780 Athens, Greece

18:00 **Error control of four-wave mixing spectral data based on a-SiC technology** S.P10 2
M. A. Vieira1,2, M. Vieira1,2,3,V. Silva1,2, P. Louro1,2, M. Barata 1,2
1Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Em?dio Navarro, 1949-014 Lisboa, Portugal Tel: 351 21 8317290, Fax: 351 21 8317114, mv@isel.ipl.pt ; 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal

18:00 **Equivalent memristive system models and their RLC mode circuit** **S.P10 3**
Xiaoyuan Wang and Guangyi Wang
Hangzhou Dianzi University

18:00 **Nanodot size-dependent switching of charge conducting states in artificially fabricated nickel oxide nano-structures** **S.P10 4**
Nuri Lee 1, W. Jo 1, D. -W. Kim 1, C. Liu 2, C. Meny 3
1 Department of Physics, Ewha Womans University, Seoul 120-750, Korea; 2 Department of Physics, Hankuk University of foreign Studies, Yongin 426-791, Korea 3 Institute of Physics and Chemistry of Materials of Strasbourg, UMR 7504 ULP-CNRS, Strasbourg, 67043, France

18:00 **NANOSTRUCTURE TiO2 DEPOSITION BY PULSED MICROPLASMA CLUSTER-BEAM SOURCE FOR MEMRISTIVE APPLICATIONS** **S.P10 5**
G. Giusti (a), T. Toccoli (a), G. Baldi (b), L. Aversa (a), R. Tatti (a), R. Verucchi (a), S. Iannotta (b)
a) Istituto dei Materiali per l'Elettronica e il Magnetismo, IMEMCNR, Sede di Trento, Via alla Cascata 56/C 38123 Povo (TN), Italy b) Istituto dei Materiali per l'Elettronica e il Magnetismo, IMEMCNR, Parma, Viale Usberti 37/A, 43124 Parma (Italy)

18:00 **Unconventional Digital Computing Approach: Memristive Nanodevice Platform** **S.P10 6**
Mahyar Shahsavari, M. Faisal Nadeem, S. Arash Ostadzadeh, Philippe Devienne, Pierre Boulet,
University of Lille, LIFL, CNRS Delft University of Technology

18:00 **Is Physarum Polycephalum Memristive?** **S.P10 7**
Ella Gale, Ben de Lacy Costello and Andrew Adamatzky
University of the West of England; University of the West of England; University of the West of England;

18:00 **Physarum computing: DEFLECTOR based on slime mold magnetic nanoparticle composite** **S.P10 8**
Alice Dimonte, Tatiana Berzina, Victor Erokhin
CNR-IMEM (National Council of the Researches – Institute of Materials for Electronics and Magnetism), Parco Area delle Scienze 37A, 43124, Parma, Italy

18:00 **BIO-ORGANIC MEMRISTORS DEVICE: POLYANILINE-PHYSARUM POLYCEPHALUM INTERFACE** **S.P10 9**
Angelica Cifarelli, Tatiana Berzina, Victor Erokhin.
Angelica Cifarelli 1,2; Tatiana Berzina 1; Victor Erokhin 1. 1 CNR-IMEM (National Council of the Researches – Institute of Materials for Electronics and Magnetism), Parco Area delle Scienze 37A, 43124, Parma, Italy 2 Department of Physics and Earth Science, University of Parma, Viale Usberti 7A, 43124, Parma, Italy

18:00 **X-RAY TECHNIQUES FOR STUDYING STRUCTURE AND WORKING MECHANISMS OF MEMRISTIVE DEVICES** **S.P10 10**
O.V. Konovalov, L.A. Feigin
European Synchrotron Radiation Facility, 6 Rue Jules Horowitz, BP 220, 38043 Grenoble, France : Shubnikov Institute of Crystallography, Russian Academy of Sciences, Leninskii pr. 59, 119333 Moscow, Russia

18:00 **Resistive Switching and its mechanism in Amorphous SrTiO3 Thin Films** **S.P10 11**
Hussein Nili, Sumeet Walia, Madhu Bhaskaran, Sharath Sriram
Functional Materials and Microsystems Research Group, School of Electrical and Computer Engineering, RMIT University, Melbourne, Victoria 3001, Australia

18:00 **Structural investigation of phase change memory stacked films** **S.P10 12**
A. Velea1, 2, *, C. N. Borca1, G. Socol3, D. Grolimund1, M. Popescu2
1Paul Scherrer Institute, CH-5232, Villigen-PSI, Switzerland 2National Institute of Materials Physics, RO-077125, Magurele, Ilfov, Romania 3National Institute for Laser, Plasma and Radiation Physics, RO-077125, Magurele, Ilfov, Romania

18:00 **Impedance spectroscopic study on metal oxide memristive devices** **S.P10 13**
Toshihiro Nakamura
Department of Engineering Science, Osaka Electro-Communication University

18:00 **NANOENGINEERED POLYMERIC CAPSULES AS DIRECTED INHIBITORES AND CATALYSERS OF THE ACTIVITY IN THE COMPUTATIONAL SYSTEMS BASED ON BIO-MOLECULES** **S.P10 14**
Svetlana Erokhina, Laura Pastorino
Dept. Informatics, Bioengineering, Robotics and Systems Engineering, University of Genova

Inorganic memristor arrays : D. Querlioz

08:30 **A Review of Three-dimensional Resistive Switching Cross-Bar Array Memories from the Integration and Materials Property Points of View** S.5 1
Jun Yeong Seok,1,2 Seul Ji Song,1 Jung Ho Yoon,1 Kyung Jean Yoon,1 Tae Hyung Park,1 Dae Eun Kwon,1 Hyungkwang Lim,1,2 Gun Hwan Kim,1 Doo Seok Jeong,2 and Cheol Seong Hwang1,*
1 Department of Materials Science and Engineering and Inter-University Semiconductor Research Center, Seoul National University, Seoul 151-744, South Korea E-mail: cheolsh@snu.ac.kr 2 Electronic Materials Research Center, Korea Institute of Science and Technology, Seoul 136-791, South Korea

09:00 **Carbon Nanotube / Liquid Crystal Dispersions for Unconventional Computing** S.5 2
D. Volpati (a,b), M.K. Massey (a), D.A. Zeze (a), C. Pearson (a), F. Qaiser (a), A. Kotsialos (a), O.N. Oliveira Jr. (b), M.C. Petty (b)
(a) School of Engineering and Computing Sciences, Durham University, DH1 3LE, Durham, United Kingdom; (b) Instituto de Fisica de Sao Carlos, Universidade de Sao Paulo, CP 369, 13560-970, Sao Carlos, Sao Paulo, Brazil

09:15 **Transport properties of single Ni-Cu alloy nanowires** S.5 3
Andreea Costas(a), Camelia Florica (a), Elena Matei (a), Maria Eugenia Toimil Molares(b), Victor Kuncser(a), Ionut Enculescu(a)
(a) National Institute of Materials Physics, PO Box MG-7, 77125, Magurele-Bucharest, Romania; (b) GSI, Helmholtz Centre, Planck str. 1, D-64291, Darmstadt, Germany

09:30 **Ag2S nanostructures with memristive and adaptive properties** S.5 4
C. Dias, L. Guerra, M. Proença, P. Aguiar, J. P. Araújo, J. Ventura
IFIMUP and IN-Institute of Nanoscience and Nanotechnology, and Department of Physics and Astronomy, Faculty of Sciences, University of Porto, Portugal

09:45 **Synthesis of inorganics materials for memristor devices: a multi-technique approach** S.5 5
R. Verucchi (a), T. Toccoli (a), G. Giusti (a), P. Nozar (a), G. Baldi (b), M. Bosi (b), G. Attolini (b), S. Salviati (b), S. Iannotta (b)
a) Istituto dei Materiali per l'Elettronica e il Magnetismo, IMEMCNR, Sede di Trento, Via alla Cascata 56/C 38123 Povo (TN), Italy b) Istituto dei Materiali per l'Elettronica e il Magnetismo, IMEMCNR, Parma, Viale Usberti 37/A, 43124 Parma (Italy)

10:00 **Coffee break**

Organic and bioorganic systems : G. Wendin

10:30 **Memristors and Bio-sensing: a perspective to explore towards a novel bio-electronic platform.** S.6 1
Salvatore Iannotta
IMEM-CNR Institute of Materials for Electronics and Magnetism

11:00 **Electrochemical model of polyaniline based memristor** S.6 2
V.A. Demin (1,2), P.K. Kashkarov (1,2,3), M.V. Kovalchuk (1,2,3)
(1) National Research Center «Kurchatov Institute», 123182 Moscow, Russia
(2) Moscow Institute of Physics and Technology (State University), Dolgoprudny, Moscow Region, 141700, Russia (3) Lomonosov Moscow State University, GSP-1, Lelinskie Gory, Moscow 119991, Russia

11:15 **Cellulose nanofibers for resistive switching: toward a paper-based electronics** S.6 3
Umberto Celano, Kazuki Nagashima, Hirotaka Koga, Masaya Nogi, Katsuaki Suganuma, Jo De Boeck, Malgorzata Jurczak, Takeshi Yanagida, Wilfried Vandervorst
imec; KU Leuven; Osaka university;

11:30 **Can Bio-Inspired Information Processing Steps Be Realized as Synthetic Biochemical Processes?** S.6 4
Vladimir Privman, Evgeny Katz
Clarkson University, Potsdam, NY 13699, USA

11:45 **NANOENGINEERED POLYMERIC CAPSULES FOR UNCONVENTIONAL COMPUTING** S.6 5
Svetlana Erokhina, Elena Dellacasa, Carmelina Ruggiero, Laura Pastorino
Dept. Informatics, Bioengineering, Robotics and Systems Engineering, University of Genova

12:00 **Physarum Polychephalum with an Electrochemical Cell: the Perspective of a Memristive/Adaptive Response Based on Living Cell Systems** S.6 6
Giuseppe Tarabella, Angelica Cifarelli, Alice Dimonte, Tatiana Berzina, Salvatore Iannotta, Pasquale D'Angelo
Giuseppe Tarabella, Salvatore Iannotta, Pasquale D'Angelo. Institute of Materials for Electronics and Magnetism (IMEM) - National Research Council (CNR) Viale Usberti 37A, Parco Area delle Scienze – 43124, Parma (Italy); Angelica Cifarelli, Alice Dimonte, Tatiana Berzina. Department of Physics, University of Parma, Viale Usberti 37A, Parco Area delle Scienze – 43124, Parma (Italy).

12:15 **Electrospun polyaniline nanofibers as perspective material for stochastic memristive devices** S.6 7
Korovin A.N., Grigoriev. T.E., Chvalun S.N., Kovalchuk M.V.
National research center "Kurchatov Institute", Moscow, Russia

12:30 **Lunch**

Oxide memristors 1 : D. Strukov

14:00 **Resistive switching in titanium oxide thin films for ReRAM: a nanoscale study** S.7 1
D. Carta1, A. Regoutz1, I. Salaoru1, A. Khiat1, N. Harrison2, C. Mitterbauer3, T. Prodromakis1
1 Nano Research Group, Electronics and Computer Science Department, University of Southampton, Southampton SO17 1BJ, UK 2 Department of Chemistry, Imperial College London, London SW7 2 AZ, UK 3FEI Company, Eindhoven, The Netherlands

14:30 **Amorphous Carbon Oxide for Resistive Memory Applications** S.7 2
Claudia A. Santini, Abu Sebastian, Chiara Marchiori, Vara P. Jonnalagadda, Laurent Dellmann, Wabe Koelmans, Christophe Rossel, Evangelos Eleftheriou
IBM Research - Zurich, Säumerstrasse 4, 8803 Rüschlikon, Switzerland

14:45 **Band alignment and effective work function of atomic-layer deposited VO2 and V2O5 films on SiO2 and Al2O3.** S.7 3
F. Cerbu(1), H.-S. Chou(1), I. P. Radu(2), K. Martens(2), Antony Peter(2), V. V. Afanas'ev(1), A. Stesmans(1)
(1) KULeuven (2) IMEC

15:00 **Resistive switching observed in CeO2/La0.7Sr0.3MnO3 complex oxide bilayer** S.7 4
R. Ortega1-2, T. Puig 2, J. Suñé 1, J.C. González 2, M. Coll 2, A. Palau 2, X. Obradors 2
1 Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona (UAB), 08193-Bellaterra (Barcelona), Spain 2 Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Campus UAB, 08193 Bellaterra (Barcelona) Spain

15:15 **High HRS/LRS Ratio in ReRAM cells from TiN/TiOx/Al2O3/Pt by Atomic Layer Deposition** S.7 5
HEHE ZHANG, NABEEL ASLAM, and SUSANNE HOFFMANN-EIFERT
Forschungszentrum Juelich, PGI-7, and JARA-FIT, 52425 Juelich, Germany

15:30 **Engineering of oxide based resistive switching for passive crossbar integration** S.7 6
Fabien Alibart*, Selina La Barbera, Dominique Vuillaume, Marie Minvielle, Guillaume Saint-Girons, Romain Bachelet, Catherine Dubourdieu
Fabien Alibart*; Selina La Barbera; Dominique Vuillaume; IEMN-CNRS, Boulevard Poincare, Villeneuve d'Ascq, France Marie Minvielle; Guillaume Saint-Girons; Romain Bachelet; Catherine Dubourdieu; Institut des Nanotechnologies de Lyon, UMR CNRS 5270, Ecole Centrale Lyon, Ecully, France

15:45 **Resistive switching of individual, chemically synthesized TiO2 nanoparticles** S.7 7
Dirk Oliver Schmidt, Michael Noyong, Ulrich Simon
Institute of Inorganic Chemistry, RWTH Aachen University, Landoltweg 1, 52074 Aachen, Germany

16:00 **Phase Change Materials for Neuromorphic Hardware** **S.7 8**
Martin Salinga
RWTH Aachen University I. Physikalisches Institut IA

16:15 **Coffee break**

16:45 **Improved switching speed of InSbTe multi-level phase change memory** **S.8 1**
Yong Tae Kim1, Minho Choi2
1Semiconductor Materials and Device Lab., Korea Inst. of Sci. and Tech., Seoul, Korea: 2Department of Materials Sci. and Eng., Hanyang University, Seoul, Korea

17:00 **Synaptic plasticity and learning behaviours mimicked dependently on the interface effects in metal/conducting polymer/metal memristive systems** **S.8 2**
F. Zeng, S.Z. Li, J. Yang, H. Y. Liu, G. S. Tang and F. Pan
Key laboratory of Advanced Materials (MOE), School of Materials Science, Tsinghua University, 100084 Beijing, China

17:15 **Electro-grafted organic memristors: scaling study using carbon nanotube electrodes and prospects for artificial neural networks** **S.8 3**
T. Cabaret (1,3), L. Fillaud (2,3), O. Segut (2), K. Gacem (1), J-O. Klein (4), B. Jousselme (2,3), V. Derycke (1,3)
1 CEA Saclay, IRAMIS, SPEC (URA CNRS 2464), LEM, F-91191 Gif sur Yvette, (2) CEA Saclay, IRAMIS, SPCSI, LCSI, F-91191 Gif Sur Yvette, France (3) CEA Saclay, IRAMIS, NIMBE, LICSEN, F-91191 Gif Sur Yvette, France (4) Université Paris-Sud, IEF (UMR CNRS 8622), F-91405 Orsay, France

17:30 **Optimisation of Threshold Logic Gates from Disordered Carbon Nanotube/ Polymer Composites** **S.8 4**
M.K. Massey, A. Kotsialos, F. Qaiser, D.A. Zeze, C. Pearson, D. Volpati, M.C. Petty
School of Engineering and Computing Sciences, Durham University, DH1 3LE, Durham, United Kingdom; Instituto de Fsica de So Carlos, Universidade de So Paulo, CP 369, 13560-970, So Carlos, So Paulo, Brazil

17:45 **Theory of Self-Assembled Nanoparticle Networks as Logic Building Blocks** **S.8 5**
Fabrizio Cleri (1), Sergio Carrillo (1,2), Cristophe Krzeminski (2)
(1) IEMN, University of Lille I, 59652 Villeneuve d'Ascq, France; (2) IEMN, Departement ISEN, Blvd. Vauban, 59100 Lille, France

Poster 2 : R. Waser

18:00 **Photoelectrochemisty of semiconductors towards information processing** **S.8 6**
Przemysław Kwolek, Konrad Szaciłowski
AGH University of Science and Technology, Faculty of Non-Ferrous Metals, al. A. Mickiewicza 30, 30-059 Krakow, Poland; AGH University of Science and Technology, Faculty of Non-Ferrous Metals, al. A. Mickiewicza 30, 30-059 Krakow, Poland, Jagiellonian University, Faculty of Chemistry, ul. Ingardena 3, 30-060 Krakow, Poland

18:00 **Monitoring TiO2-x resistive switching by Conductive Atomic Force Microscopy** **S.8 7**
P. Bousoulas1, I. Giannopoulos1, K. Giannakopoulos2, P. Dimitrakis2, D. Tsoukalas1
1Department of Applied Physics, National Technical University of Athens, Iroon Polytechniou 9 Zografou, 15780 Athens, Greece 2Institute of Microelectronics, NCSR "Demokritos", Aghia Paraskevi, 15310 Athens, Greece

18:00 **Morphologic, structural and optical characterization of sol-gel derived TiO2 thin films for memristive devices** **S.8 8**
V. Prusakova, C. Armellini, A. Carpentiero, A. Chiappini, C. Collini, S. Dirè,M. Ferrari, L. Lorenzelli, M. Nardello, A. Vaccari, A. Chiasera
S. Dirè, Department of Industrial Engineering, University of Trento, via Sommarive 9, 38123 Trento, Italia; C. Armellini, CNR-IFN, CSMFO Lab., Via Alla Cascata 56/C, 38123 Trento, Italia; A. Carpentiero, CNR-IFN, CSMFO Lab., Via Alla Cascata 56/C, 38123 Trento, Italia; A. Chiappini, CNR-IFN, CSMFO Lab., Via Alla Cascata 56/C, 38123 Trento, Italia; C. Collini, FBK, BioMEMS, Via Sommarive 18, 38123 Trento, Italia; M. Ferrari, CNR-IFN, CSMFO Lab., Via Alla Cascata 56/C, 38123 Trento, Italia; L. Lorenzelli, FBK, BioMEMS, Via Sommarive 18, 38123 Trento, Italia; M. Nardello, Department of Industrial Engineering, University of Trento, via Sommarive 9, 38123 Trento, Italia; A. Vaccari, FBK, CMM-REET, Via Sommarive 18, 38123 Trento, Italia; A. Chiasera CNR-IFN, CSMFO Lab., Via Alla Cascata 56/C, 38123 Trento, Italia;

18:00 **Fabrication and characterization of thin memristive BaTiO3 films** **S.8 9**
Savio Fabretti 1, Joachim Sterz 1, Florian Hofmann 1, Stefan Niehörster 1, Andy Thomas 1
1 Bielefeld University 2 Johannes Gutenberg-University Mainz

18:00 **TaOx based memristive tunnel junctions** **S.8 10**
S. Niehörster*1, S. Fabretti1, M. Schäfers1 and A. Thomas1;2
1Bielefeld University, Germany; 2Johannes Gutenberg-University Mainz, Germany

18:00 **The titanium oxide memristor contact material's influence on element's cyclic stability to degradation** **S.8 11**
Julia Khrapovitskaya, Natalia Maslova, Julia Grishchenko, Dmitry Mamichev, Ivan Sokolov, Maxim Zanaveskin
NBICS-Center, NRC Kurchatov Institute, Moscow, Russia

18:00 **Features of titanium oxide memristor fabrication by pulsed laser deposition** **S.8 12**
Maxim Zanaveskin, Julia Khrapovitskaya, Natalia Maslova, Julia Grishchenko, Dmitry Mamichev, Ivan Sokolov
NBICS-Center, NRC Kurchatov Institute, Moscow, Russia

18:00 **Ta doping improved the resistive switching uniformity characteristics of HfO2 based resistive memory devices** **S.8 13**
Lifeng Liu, Yi Hou, Wenjia Ma, Dedong Han, Yi Wang, Jinfeng Kang
Institute of Microelectronics, Peking University, Beijing, 100871, China

18:00 **1-D core-shell nanoarchitectures with interface-mediated resistance-switching behavior in polymer nanocomposites** **S.8 14**
Sang-Soo Lee, Kiwon Oh, Woojin Jeon
Korea Institute of Science and Technology

18:00 **Effect of TiOx/TiO2 layer thickness on the properties of memristive device** **S.8 15**
G.I. Tselikov, A.V. Emelyanov, I.M. Antropov, V.A. Demin, P. K. Kashkarov
National Research Centre "Kurchatov Institute", «Moscow Institute of Physics and Technology (State University)»; National Research Centre "Kurchatov Institute"; National Research Centre "Kurchatov Institute"; National Research Centre "Kurchatov Institute", «Moscow Institute of Physics and Technology (State University)»; National Research Centre "Kurchatov Institute", «Moscow Institute of Physics and Technology (State University)», Lomonosov Moscow State University.

18:00 **Metal-insulator transition and low temperature resistive switching of V2O3 microbridges with different aspect ratios** **S.8 16**
Mariela Menghini, Pía Homm, Leander Dillemans, Karen Levrie, Chen-yi Su, Ruben Lieten, Tomas Smets, Cynthia Quinteros, Pablo Levy, Maria Jose Sanchez and Jean-Pierre Locquet
Functional Nanosystems Group, Dept. of Physics and Astronomy, KU Leuven, Leuven, Belgium; GIA, GAIANN, CAC, CNEA, Buenos Aires, Argentina; Solid State Theory Group, CAB, CNEA, S. C. de Bariloche, Argentina

18:00 **Influence of Mg and Al2O3 layers on the resistive switching of MgO-based MIM structures grown by molecular beam epitaxy** **S.8 17**
Mariela Menghini, Cynthia Quinteros, Leander Dillemans, Chen-yi Su, Pía Homm, Pablo Levy and Jean-Pierre Locquet
Dept. of Physics and Astronomy, KU Leuven, Leuven, Belgium; GIA, GAIANN, CAC, CNEA, Buenos Aires, Argentina

18:00 **Memristive devices: an interconnect solution for matrix-based architectures?** **S.8 18**
Sébastien Le Beux1, Fabien Alibart2, Dominique Vuillaume2, Catherine Dubourdieu1, Ian O'Connor1
1. Institut des Nanotechnologies de Lyon, UMR CNRS 5270, Ecole Centrale Lyon, Ecully, France; 2. IEMN-CNRS, Boulevard Poincarre, Villeneuve d'Ascq, France

18:00 **Antimony sulfoiodide in optoelectronic application** **S.8 19**
Konrad Szaciłowski(1,2), Justyna Mech(1)
(1)AGH University of Science and Technology, Faculty of Non-Ferrous Metals, , Cracow, Poland (2)Faculty of Chemistry, Jagiellonian University, Cracow, Poland

Inorganic/oxide memristors : M. Di Ventra

08:30 **Flexible MEMristor devices HfO2 –based by Ink-jet Printing Process** S.9 1
G. Vescio, O. Casals, J. D. Prades, A. Cornet, A. Cirera
MIND/IN2UB Electronics Department, Universitat de Barcelona, c/ Martí i Franquès 1, Planta 2, 08028, Barcelona, Spain

08:45 **Resistive switching in narrow gap Mott Insulators.** S.9 2
L. Cario, B. Corraze, J. Tranchant, M.P. Besland, P. Stoliar, M. Rozenberg, and E. Janod
Institut de Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP3229, 44322 Nantes, France. Email : Laurent.cario@cnrs-imn.fr
Laboratoire de Physique des Solides, CNRS UMR 8502, Université Paris Sud, Bât 510, 91405 Orsay, France

09:00 **Switching resistance based on ALD-deposited HfO2 in a cross-bar structure** S.9 3
J. Samà 1, S. Shumovitch 2 ,O. Casals 1, J. D. Prades 1, J. Salzman 2, A. Romano-Rodríguez 1
1 MIND-IN2UB-Dept. Electronics, Universitat de Barcelona (UB), Martí i Franquès 1, 08028, Barcelona, Spain; 2 Department of Electrical Engineering Technion, Israel Institute of Technology Technion City, Haifa 32000, Israel

09:30 **Chronoamperometry: a tool to test new resistive oxide materials towards switching voltages and switching kinetics.** S.9 5
F. Messerschmitt, M. Kubicek, M. Ezbiri, J. Fompeyrine, C, Marchiori, J.L.M. Rupp
Electrochemical Materials, ETH Zurich; Advanced Functional Materials, IBM Zurich Research Laboratory, Zurich, Switzerland

09:45 **Investigation of memristive switching effect in amorphous Si/Ag layers with Ar impurities** S.9 6
S. Shevyrtalov, D. Koiva, A. Goikhman
Immanuel Kant Baltic Federal University, Kaliningrad, Russia

10:00 **Coffee break**

10:30 **Ceria based nanocrystals for memristive applications** S.9 7
Adnan Younis, Dewei Chu and Sean Li
School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia

10:45 **Fully ALD grown memristive devices** S.9 8
A.M. Markeev 1, A.S. Baturin 1, E.S. Gornev 2, K.V. Egorov 1, R.V. Kirtaev 1, Yu.Yu. Lebedinskii 1, Yu.A. Matveyev 3, D.V. Negrov 1, O.M. Orlov 2, A.V. Zablotskiy 1, S.A. Zaitsev 1, A.V. Zenkevich 1,3,4
1- Moscow Institute of Physics and Technology, 141700 Moscow Region, Russia; 2-Research Institute of Molecular Electronics, 124460, Moscow, Russia; 3 - NRNU Moscow Engineering Physics Institute, 115409 Moscow, Russia; 4-National Research Center “Kurchatov Institute”, 123182 Moscow, Russia

11:00 **Memristive switching in metal/TiO2/IL/metal nanostructures** S.9 9
E.O. Filatova, M.A. Konyushenko, A.S.Konashuk, Selivanov A.A., V.E. Drozd, Baraban A.P.
Institute of Physics, St. Petersburg State University, Ul’yanovskaya Str. 1, Peterhof, 198904, St. Petersburg, Russia

11:15 **Evidence of the metal-insulator transition in ultrathin V2O3 thin films and V2O3/Cr2O3 heterostructures** S.9 10
L. Dillemans, T. Smets, R.R. Lieten, M. Menghini, C.-Y. Su, and J.-P. Locquet
Dept. of Physics and Astronomy, KU Leuven, Leuven, Belgium

11:30 **Dynamical observation of Cu/MoOx resistive RAM** S.9 11
ARITA Masashi, KUDO Masaki, OHNO Yuuki, MURAKAMI Yosuke, TAKAHASHI Yasuo
Hokkaido Univ., IST

11:45 **Lunch**

14:00 **ROUND-TABLE DISCUSSION**

16:00 **PLENARY SESSION**

E-MRS
2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM DD

Functional materials and devices for organic electronics

Symposium Organizers:

Marco Cremona, Departamento de Física da Pontifícia

Universidade Católica do Rio de Janeiro, Brazil

Rodrigo Bianchi, Departamento de Física da UFOP, Ouro Preto MG, Brazil

Carlos F.O. Graeff, Universidade Estadual Paulista Júlio de Mesquita Filho,

Bauru, SP, Brazil

Tonino Greco, Fraunhofer Institute for Digital Media Technology, Ilmenau, Germany

Michele Muccini, ISMN – CNR, Bologna, Italy

FOM TECHNOLOGIES

SBPMat Brazil-MRS

27 May 2014

ORGANIC EMITTING DEVICES - 1 : M. CREMONA

08:30 **Exciplex Forming Co-Hosts for Efficient Organic Light Emitting Diodes** **DD.1 1**
Jang-Joo Kim
Department of Materials Science and Engineering , Seoul National University Gwanakro, Gwanakgu, Seoul 151-744, Korea

09:00 **Influence of morphology and charge carrier dynamics on the performance of air stable Hybrid Light Emitting Diodes** **DD.1 2**
Eugenia Martinez-Ferrero, Alberto Quintana
CETEMMSA Technological Centre, Avda. Ernest Lluch 36, E-08302, Mataró, Spain

09:15 **OLED Lifetime Limitation by its Intrinsic Emission Characteristics** **DD.1 3**
M. Al Helwi1;2;3, J. Helzel1, J. Reinker1, H.-H. Johannes1, U. Heinemeyer2, W. Kowalsky1;3
1 Technische Universität Braunschweig, Brunswick, Germany 2 BASF SE, Ludwigshafen, Germany 3 Innovation Lab GmbH, Heidelberg, Germany

09:30 **High Efficiency Organic Light-Emitting Diode induced by UV-Treatment on Solution-Processed WOx Interlayer** **DD.1 4**
Yeong-Jae. Yu, Hyo-Min. Kim, Jin. Jang
Advanced Display Research Center. Kyung-Hee University

09:45 **Universal enhancement in RGB organic light emitting transistors** **DD.1 5**
Mujeeb Ullah*, Kristen Tandy, Soniya D. Yambem, Paul L. Burn, Paul Meredith and Ebinazar B. Namda
The Centre for Organic Photonics & Electronics, School of Mathematics and Physics and School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, Queensland 4072, Australia.

10:00 **BREAK**

ORGANIC EMITTING DEVICES - 2 : B. HU

10:30 **Imprinted nano-structures for organic devices such as OLED and OPV** **DD.2 1**
Heon Lee
Department of Materials Science and Engineering, Korea University, Seoul 136-713, South Korea

11:00 **Solution processed OLEDs with luminescent lanthanide aromatic carboxylate thin films as active layers** **DD.2 2**
V.V. Utochnikova1,2,3, A.S. Kalyakina1,3, E.Yu. Sokolova1,3, A. A. Vaschenko2, L. S. Lepnev2, N.P. Kuzmina1
1 Lomonosov Moscow State University 2 Lebedev Physical Institute, Russian Academy of Sciences 3 EVOLED Ltd.

11:15 **Prevention of Short Circuits in Solution-Processed OLED Devices** **DD.2 3**
A.J. Oostra, P.W.M. Blom, J.J. Michels
Zernike Institute for Advanced Materials, University of Groningen, Groningen, the Netherlands;Max Planck Institute für Polymerforschung,Mainz, Germany, Zernike Institute for Advanced Materials, University of Groningen, Groningen, the Netherlands;Holst Centre/TNO, Eindhoven, the Netherlands

11:30 **Organic semiconducting single crystals as low cost, room temperature electrical X-ray detectors** **DD.2 4**
A. Ciavatti1, E. Capria2, G. Tromba2, P.Sellin3, A. Fraleoni-Morgera2, B. Fraboni1
1Università di Bologna - Dipartimento di Fisica e Astronomia, viale Berti Pichat 6/2, Bologna, Italy 2Sincrotrone Trieste – Strada Statale 14, Km 163.5 – Basovizza (Trieste), Italy 3Department of Physics, University of Surrey, Guildford, Surrey GU2 7XH, UK

11:45 **Organic photodiodes for sensing applications** **DD.2 5**
Kiron Prabha Rajeev, Lichun Chen, Frank Meyer, Maxim Shkunov
University of Surrey,Merck Chemicals Ltd ; Merck Chemicals Ltd ; Merck Chemicals Ltd ; University of Surrey

12:00 **PEDOT:PSS for electrochemical sensing of drug and biophysical applications** **DD.2 6**
Tullio Toccoli2, Manuela Zanetti1, Devid Maniglio3, Mauro Dalla Serra1, Salvatore Iannotta2
1Istituto di Biofisica, Consiglio Nazionale delle Ricerche & Fondazione Bruno Kessler, via alla Cascata 56/C, 38123 Trento, Italy 2IMEM-CNR Trento, Istituto Materiali per Elettronica e Magnetismo Via Alla Cascata 56/C, 38123 Trento, Italy 3University of Trento, Department of Materials Engineering and Industrial Technologies and Biotech Research Center, 38123 Trento, Italy

12:15 **Waveguiding and loss mechanism in organic microrings** **DD.2 7**
Luciana Tavares1, Jonathan R. Brewer2, Christian Strelow3, Horst-Günter Rubahn1, Jakob Kjelstrup-Hansen1
1University of Southern Denmark, NanoSYD, Mads Clausen Institute, Alsion 2, DK-6400 Sønderborg, Denmark; 2University of Southern Denmark, Department of Biochemistry and Molecular, Campusvej 55, DK-5230 Odense M, Denmark; 3University of Hamburg, Institute of Physical Chemistry, Grindelallee 117, DE-20146 Hamburg, Germany

12:30 **LUNCH**

ORGANIC TRANSISTORS : JANG-JOO KIM

14:00 **Doped Organic Semiconductors and their Application in Organic Transistors** **DD.3 1**
Daniel Kasemann, Axel Fischer, Alrun Günther, Hans Kleemann, Paul Pahner, Max L. Tietze, Björn Lüssem, Karl Leo
Institut für Angewandte Photophysik, TU Dresden, 01069 Dresden, Germany; Kent State University, Department of Physics, Kent, OH 44240, USA

14:30 **Simple Bar-Coating Process for Large-Area, High-Performance Ultrathin Organic Field-Effect Transistors and Ambipolar Complementary Integrated Circuits** **DD.3 2**
Dongyoon Khim, Chuan Liu, Yong-Young Noh
Department of Energy and Materials Engineering, Dongguk University,

14:45 **Design of photoswitchable organic field-effect transistors based on organic photochromic materials: towards efficient memory devices** **DD.3 3**
Lubov A. Frolova, Alexander V. Mumyatov, Diana K. Susarova and Pavel A. Troshin
Institute for Problems of Chemical Physics, Russian Academy of Sciences, Academician Semenov av. 1, Chernogolovka, Moscow region, 142432, Russia

15:00 **Templated crystal growth and enhanced charge injection by self-assembled monolayers on metal contacts in solution-cast molecular film transistors** **DD.3 4**
Chang-Hyun Kim (1,2), Htay Hlaing (2), Marcia M. Payne (3), Yvan Bonnassieux (1), John E. Anthony (3), Gilles Horowitz (1), Ioannis Kymissis (2)
(1) LPICM, Ecole Polytechnique, CNRS, 91128 Palaiseau, France; (2) Department of Electrical Engineering, Columbia University, New York, NY 10027, USA; (3) Center for Applied Energy Research, 2582 Research Park Drive, Lexington, KY 40511, USA

15:15 **Optical memory TFT device with distinct levels based on an organic bi-component semiconductor blend** **DD.3 5**
Tim Leydecker,1 Emanuele Orgiu,1 Martin Herder,2 Stefan Hecht,2 Paolo Samorì1
1 ISIS & icFRC, University of Strasbourg & CNRS, 8 allée Gaspard Monge, 67000 Strasbourg, France. 2 Department of Chemistry, Humboldt-Universität zu Berlin, Brook-Taylor-Straße 2, 12489 Berlin, Germany.

15:30 **BREAK**

FLEXIBLE DEVICES AND SENSORS : C. GRAEFF

16:00 **Flexible Low-Voltage Organic Thin-Film Transistors and Circuits** **DD.4 1**
H. Klauk
Max Planck Institute for Solid State Research Heisenbergstr. 1, 70569 Stuttgart, Germany

16:30 **Organic Electrochemical Transistors for Pigment-Biosensing and Apoptotic-Cells Death Monitoring** **DD.4 2**
Giuseppe Tarabella, Agostino Romeo, Pasquale D'Angelo, Cristina Caffarra, Daniele Cretella, Pier Giorgio Petronini, Alessandro Pezzella, Salvatore Iannotta. Giuseppe Tarabella, Agostino Romeo, Pasquale D'Angelo, Salvatore Iannotta. Institute of Materials for Electronics and Magnetism (IMEM) - National Research Council (CNR). Viale Usberti 37A, Parco Area delle Scienze – 43124, Parma (Italy); Cristina Caffarra, Daniele Cretella, Pier Giorgio Petronini. University of Parma, Experimental Medicine Dep., Experimental Oncology Section - Parma, Italy Alessandro Pezzella, Department of Chemical Science, University of Federico II, Naples, Italy.

16:45 **Light-induced switching of hybrid core/multishell nanowire field effect transistors** **DD.4 3**
Eunhye Baek1, Sebastian Pregl1,2, Mehrdad Shaygan3, Lotta Römhildt1, Dmitry A. Ryndyk1,2, Larysa Baraban1, Gianaurelio Cuniberti1,2
1 Institute for Materials Science and Max Bergmann Center of Biomaterials, TU Dresden, 01062 Dresden, Germany; 2 Center for Advancing Electronics Dresden, TU Dresden, 01062 Dresden, Germany; 3 Division of IT Convergence Engineering, Pohang University of Science and Technology, Pohang, Korea

17:00 **Flexible and Transparent Organic Field Effect Transistors with Strontium Titanate as Gate Dielectric Material** **DD.4 4**
Sarita Yadav, Subhasis Ghosh
School of Physical Sciences, Jawaharlal Nehru University, New Delhi-110067, India

17:15 **Neutron Radiation Tolerance of Organic Field Effect Transitors** **DD.4 5**
(1) Giuseppe Paternò, (1) Valentina Robbiano, (2) Victoria Garcia Sakai and (1) Franco Cacialli
(1) London Centre for Nanotechnology and Department of Physics and Astronomy, University College London, Gower Street, London WC1E 6BT, UK; (2) ISIS Pulsed Neutron and Muon Source; Science and Technology Facilities Council, Rutherford Appleton Laboratory, Harwell Science and Innovation Campus, Didcot OX11 0QX (UK)

17:30 **New Magnetic Field Effects in Organic Semiconductors** **DD.4 6**
Bin Hu
Department of Materials Science and Engineering, University of Tennessee, Knoxville, TN 37996, USA

POSTER SESSION 1

18:00 **Fabrication of Light Emitting Electrochemical Cell (LEC) over aluminum foil by roll-to-roll process** **DD.P1 1**
Cagnani, L. D.(1), Gozzi, G.(2), Rosso, G. A. (1), Faria, R. M. (1)
1. Instituto de Física de São Carlos, Universidade de São Paulo (IFSC-USP), São Carlos, SP, Brazil; 2. Departamento de Física – Universidade Estadual Paulista (UNESP), Rio Claro, SP, Brazil.

18:00 **The sensing mechanism of Novel Polymer Oxide Gas sensor** **DD.P1 2**
Ibrahim Gaidan
Ibrahim Gaidan

18:00 **Capacitive Pressure Sensor Based on Porous Hydrophobic Elastomer for Flexible Electronic Applications** **DD.P1 3**
Bo-Yeon Lee, Jiyoon Kim, Se-Um Kim, Sin-Doo Lee
Seoul National University

18:00 **Fabrication of textile based capacitive device** **DD.P1 4**
W.C.Li, Dr C.W.Kan, Dr C.L.Mak
The Hong Kong Polytechnic University

18:00 **PHOTON TRIGGERED PROCESSES IN ORGANIC THIN FILM TRANSISTORS** **DD.P1 5**
Michael Beck, Markus Pfaff
Brandenburg Univ. of Technology, 01968 Senftenberg

18:00 **Modification of carbon nanotube flexible transparent conducting films with polyaniline for electrodes in OLED** **DD.P1 6**
Aleksei V. Emelianov, Igor V. Fedorov
National Research University of Electronic Technology, Russia, Moscow, Zelenograd, Pass. 4806, building 5

18:00 **Critical Factors to Achieve Low Voltage- and Capacitance-Based Organic Field-Effect Transistors** **DD.P1 7**
Mi Jang, Se Hyun Kim, Hoichang Yang
Department of Applied Organic Materials Engineering, Inha University, Incheon 402-751 (Korea), Department of Nano, Medical and Polymer Materials, Yeungnam, Gyeongbuk 712-749 (Korea)

18:00 **Facile Development of Conjugated Polymer Network in Semiconducting Blend Films for Flexible Organic Field-Effect Transistors** **DD.P1 8**
Mi Jang, Seulyi Lee, Hyun Yeol Jeon, Jaeseok Yoo, Kyoung-Youl Baek, Hoichang Yang
Department of Applied Organic Materials Engineering, Inha University, Incheon 402-751 (Korea); Center for Materials Architecturing, Korea Institute of Science and Technology, Seoul 136-794 (Korea)

18:00 **Efficient Chromaticity Tunable Solution-processed White Organic Light Emitting Device with Simple Device Architecture** **DD.P1 9**
Ming-Hong Huang, Wei-Chieh Lin, Chia-Chan Fan, Yu-Shih Wang, Hao-Wu Lin,*
Department of Materials Science and Engineering, National Tsing Hua University, Taiwan

18:00 **Magnetoconductance effect in an ambipolar polymer with a carbon-carbon triple-bond.** **DD.P1 10**
M. Radaoui, A. Ben Fredj, S. Romdhane, M. Havlicek, D. A. M. Egbe, H. Bouchriha
Laboratoire Matériaux Avancés et Phénomènes Quantiques, Faculté des Sciences de Tunis, Université El Manar, 2092 Campus Universitaire, Tunis, Tunisia; Faculté des Sciences de Bizerte, 7021 Zarzouna, Bizerte, Université de Carthage, Tunisia; Linz Institute for Organic Solar Cells (LIOS), Johannes Kepler University Linz, Altenbergerstr. 69, 4040 Linz, Austria

18:00 **Organic photovoltaic structures based on zinc and magnesium phthalocyanine thin films** **DD.P1 11**
M. Socol1, C. Breazu1, O. Rasoga1, A. Stanculescu1, N. Preda1, F. Stanculescu2, G. Socol3, V. Craciun3, M. Stoicanescu4
1 National Institute of Material Physics,105 bis Atomistilor Street, PO Box MG-7, 077125, Bucharest-Magurele, Romania 2 University of Bucharest, Faculty of Physics, 405 Atomistilor Street, PO Box MG-11, 077125, Bucharest-Magurele, Romania 3National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-36, 077125, Bucharest-Magurele, Romania 4Transilvania University of Brasov, 29 Eroilor Boulevard, Brasov, Romania

18:00 **Tunable Crystalline Structures of Diketopyrrolopyrrole (DPP)-based Semiconducting Polymers for High-Performance Organic Field-Effect Transistors** **DD.P1 12**
Mi Jang, Yun-Hi Kim, Soon-Ki Kwon, Hoichang Yang
Department of Applied Organic Materials Engineering, Inha University, Incheon 402-751 (Korea)

18:00 **All–solution processed transparent organic light emitting diodes with graphene as top cathodes** **DD.P1 13**
Jung Hung Chang, Po Chuan Wang, Wei Hsiang Lin, Chih I Wu
Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, Taiwan 106, R.O.C;Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, Taiwan 106, R.O.C;Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, Taiwan 106, R.O.C;Graduate Institute of Photonics and Optoelectronics & Department of Electrical and Engineering, National Taiwan University, Taipei 106, Taiwan 106, R.O.C

18:00 **Highly-Efficient Single-Emission-Layer Solution-Processed Blue and White Phosphorescent Organic Light Emitting Diodes Utilizing Carbazole/Dibenzothiophene Bipolar Host** **DD.P1 14**
Wei-Chieh Lin,a Hao-Wu Lin,a*, Li-Yin Chen,b Yen-Wei Liu,b Jin-Sheng Lin,c Teng-Chih Chao,c and Mei-Rurng Tseng,c
a: Department of Materials Science and Engineering, National Tsing Hua University, HsinChu 300, Taiwan b: Department of Photonics, National Sun Yat-sen University, Kaohsiung 804, Taiwan. c: Material and Chemical Research Laboratories, Industrial Technology Research Institute (ITRI), Hsinchu 310, Taiwan

18:00 **Organic heterostructures with improved electrical properties for OLED applications** **DD.P1 15**
O. Rasoga1, F. Stanculescu2, A.Stanculescu1, M. Socol1, N. Preda, C. Breazu1, G. Socol3
1 National Institute of Material Physics,105 bis Atomistilor Street, PO Box MG-7, 077125, Bucharest-Magurele, Romania ; 2 University of Bucharest, Faculty of Physics, 405 Atomistilor Street, PO Box MG-11, 077125, Bucharest-Magurele, Romania; 3National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-36, 077125, Bucharest-Magurele, Romania

18:00 **Advancement in organic nanofiber based transistors** **DD.P1 16**
P.B.W. Jensen, J. Kjelstrup-Hansen, L. Tavares, H.-G. Rubahn
University of Southern Denmark

18:00 **Investigation of organic magnetoresistance effect dependence on spin-orbit coupling using different rare-earth based organic molecules** **DD.P1 17**
R.S. Carvalho, M. Cremona, H. C. Ávila T. B. Paolini; H.F. Brito
Physics Dept. PUC-Rio - Rua Marques S.Vicente, 225 - Rio de Janeiro, RJ - Brazil; Chemistry Institute USP - São Paulo, SP - Brazil

18:00 **Electro-Spraying Deposition as a Versatile Method towards the Development of High-Performance Organic Field-Effect Transistors** **DD.P1 18**
Charalampos Pitsalidis (1), Anna-Maria Pappa (1), Maria Seitanidou (1), John Anthony (2), Stergios Logothetidis (1)
(1) Laboratory for Thin Films, Nanosystems and Nanometrology (LTFN), Physics Department, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece (2) Department of Chemistry, University of Kentucky, Lexington, KY 40506-0055, USA

18:00 **Microstructure and electronic properties of plasma polymerized organic thin films** **DD.P1 19**
Chadlia Manaa, Micha?l Lejeune, H.J. Von Bardeleben, Kacem Zallema, Habib Bouchriha, Mohammed Benlahsen
HYBRID, ORGANIC AND BIO-MATERIALS

18:00 **Light conversion devices: on the distinct sprayed films of europium complexes** **DD.P1 20**
Sabrina A. Camacho (1), Pedro H. B. Aoki (1), Ana Maria Pires (1), Carlos J. L. Constantino (1)
(1) DFQB, Faculdade de Ciências e Tecnologia, UNESP Univ Estadual Paulista, Presidente Prudente, SP, Brazil, 19060-900

18:00 **Ammonia sensor based on the frequency-dependent impedance characteristics of ultrathin polyaniline films** **DD.P1 21**
M. C. Santos, A. G. C. Bianchi, Bianchi
Federal University of Ouro Preto, Brazil.

18:00 **Heterostructures based on maleic anhydride-aniline derivatives monomers thin films for photovoltaic applications** **DD.P1 22**
F. Stanculescu1, O. Rasoga2, M. Socol2, C. Breazu2, A.-M. Albu3, G. Socol4, M. Girtan5, A. Stanculescu2
1University of Bucharest, Faculty of Physics, Str. Atomistilor nr.405, P.O. Box MG-11, Bucharest; 2National Institute of Materials Physics, 105 bis Atomistilor Street, P.O. Box MG-7, 077125, Bucharest-Magurele, Romania; 3Department of Polymer Science, University “Politehnica” of Bucharest, Bucharest, Romania; 4National Institute for Laser, Plasma and Radiation Physics, PO Box MG-36, 077125, Bucharest-Magurele, Romania; 5Angers University, Photonics Laboratory, LUNAM, 2, Bd. Lavoisier, 49045, Angers, France

18:00 **Organic paper based device to ensure food irradiation process** **DD.P1 23**
Franceline Aparecida Lopes1, Marcella Rocha Franco1, Thiago Schimitberger2, Luiz Oliveira de Faria3, Rodrigo Fernado Bianchi1
1 Federal University of Ouro Preto, Laboratory of Polymers and Electronic Properties of Materiais, Ouro Preto, Brazil; 2Federal University of Minas Gerais, Departament of Nuclear Engineering, BH, Brazil; 3Center of Nuclear Technology Development, BH, Brazil.

18:00 **LIGHT SENSITIVE DOSIMETER TAPE TO PROMOTE QUALITY CONTROL IN NEONATAL PHOTOTHERAPY** **DD.P1 24**
Giovana Ribeiro Ferreira, Rodrigo Fernando Bianchi
Universidade de São Paulo; Universidade Federal de Ouro Preto

18:00 **Photonic sensors for radiation therapy: viability and sensitivity investigation** **DD.P1 25**
A. G. C. Bianch, F. M. Chaves, T. Schimitberger, G. R. Ferreira, R. F. Bianchi
1- Federal University of Ouro Preto, Department of Physics, Ouro Preto, Brazil 2 - Federal University of Minas Gerais, Dept. Nuclear Eng., Belo Horizonte, MG, Brazil

28 May 2014

JOINT SESSION SYMPOSIUM H AND DD «Correlating nanostructure and function in advanced organic electronic devices» : F. CASTRO

08:30 **Imaging structure/function relationships in nanostructured solar cells** H13 1
David S. Ginger
University of Washington

09:00 **Modelling Photoconductive Atomic-Force Microscopy (Pc-AFM)** H13 2
James C Blakesley , Fernando Castro, Alina Zoladek-Lemanczyk, Stephen Giblin, Alan Turnbull
National Physical Laboratory, Teddington, TW11 0LW, United Kingdom

09:15 **Thermal degradation study of P3HT:PCBM solar cells using SPM techniques** DD.5 3
Ravi C Chintala, Jeffry G Tait, Pierre Eyben, Eszter voroshazi and Wilfried Vandervorst
IMEC, Kapeldreef 75, B-3001, Leuven , Belgium ; KU Leuven, Department of Physics and Astronomy (IKS), Celestijnenlaan 200D, 3001 Leuven, Belgium ; KU Leuven, ESAT, Kasteelpark Arenberg 10, B-3001, Leuven, Belgium

09:30 **Controlling bulk heterojunction photovoltaic morphology: The importance of solution phase aggregation** H13 4
Christopher J. Tassone, Kristin Schmidt, Jonathan Bartelt, Alan Yiu, Jeremy Niskala, Pierre Beaujuge, Jean M. Frechet, Michael McGehee, Michael F. Toney
Stanford Synchrotron Radiation Lightsource; Stanford Synchrotron Radiation Lightsource; Stanford University; UC Berkeley; UC Berkeley; King Abdullah University of Science and Technology; King Abdullah University of Science and Technology; Stanford University; Stanford Synchrotron Radiation Lightsource

09:45 **Investigation of polymer organization for organic electronic devices using Langmuir-Blodgett methods** H13 5
Mariane Ouattara, Josée Brisson, Mario Leclerc
Université Laval

10:00 **BREAK**

ORGANIC SOLAR CELLS : R. BIANCHI

10:30 **Novel material systems and device concepts for plastic opto/electronics** DD.6 1
Thomas D. Anthopoulos
Department of Physics and Centre for Plastic Electronics, Blackett Laboratory, Imperial College London, London, U.K.

11:00 **Synthesis of macromolecular azafulleroids for inverted solar cells** DD.6 2
Bruna Andressa Bregadiolli 1,2, Rodrigo Marques Ferreira 1, Hugo Santos Silva 2, Hasina H. Ramanitra 1, Didier Bégué 2, Francisco Carlos Lavarda 1, Christine Dagron - Lartigau 2, Carlos F. O. Graeff 1, Roger C. Hiorns 3
1 UNESP - Univ Estadual Paulista, POSMAT , Bauru, SP, Brazil ; 2 UPPA, IPREM UMR-5254, EPCP, 2 av President Angot, Pau 64053, France ; 3 CNRS, IPREM UMR-5254, EPCP, 2 avenue President Angot, Pau 64053, France.

11:15 **Process technology and in-line metrology for flexible organic photovoltaics** DD.6 3
C. Koidis 1,2, G. Antonopoulos 2, D. Georgiou 1, C. Kapnopoulos 1, E. Mekeridis 2, A. Laskarakis 1, S. Logothetidis 1
1 Lab for Thin Films-Nanosystems & Nanometrology (LTFN), Physics Department, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece; 2 Organic Electronic Technologies P.C. (OET), GR-57001 Thessaloniki, Greece

11:30 **Interface defects in organic solar cells** DD.6 4
C. Renaud1, L. Wang2, P. Le Rendu3, T. P. Nguyen3*
1LAPLACE, University of Toulouse, 118 Route de Narbonne 31062 Toulouse Cedex 9 France; 2Center for Condensed Matter Sciences, National Taiwan University, 1, Sec.4, Roosevelt Road, Taipei 10617, Taiwan.; 3Institut des Matériaux Jean Rouxel, 2 Rue de la Houssinière 44322 Nantes, France.

11:45 **Oxygen doping-dedoping dynamics in P3HT:PCBM organic solar cells probed by CELIV technique** DD.6 5
Douglas José Coutinho, Gregório Couto Faria, Heinz Von Seggern, Roberto Mendonça Faria
(Douglas José Coutinho, Gregório Couto Faria and Roberto Mendonça Faria) Instituto de Física de São Carlos, Universidade de São Paulo; (Heinz Von Seggern) Institute of Materials Science, Technische Universitaet Darmstadt;

12:00 **Photophysical Properties and Device Performance Correlations in Small-Molecule Organic Solar Cells** DD.6 6
Chang-Wen Chen, Zheng-Yu Huang, Yi-Min Lin, Wei-Ching Huang, Yi-Hong Chen, Joseph Strzalka, Angela Y. Chang, Richard D. Schaller, Cheng-Kuang Lee, Chun-Wei Paoe and Hao-Wu Lin
Department of Materials Science and Engineering, National Tsing Hua University; X-Ray Science Division, Argonne National Laboratory; Department of Chemistry, Northwestern University; Center for Nanoscale Materials, Argonne National Laboratory; Research Center for Applied Sciences, Academia Sinica

12:15 **Effective passivation of TiO2 surface trap states for high performing organic photovoltaics** DD.6 7
Dimitra G. Georgiadou1, Maria Vasilopoulou1, Anastasia Soultati1, Florian Auras2, Thomas Bein2, Theodoros A. Papadopoulos3, Dimitrios Davazoglou1, Panagiotis Argitis1
1Institute of Microelectronics, National Center for Scientific Research “Demokritos”, 153 10 Aghia Paraskevi, Athens, Greece; 2Department of Chemistry and Center for Nanoscience (CeNS), University of Munich (LMU), 81377 Munich, Germany; 3Institute of Renewable Energy and Environmental Technologies (IREET), Department of Engineering, University of Bolton, Deane Rd. BL3 5AB, Bolton, U.K.

12:30 **LUNCH**

POSTER SESSION 2

14:00 **Preparation of invisible metal-grid transparent electrodes by electrohydrodynamic printing and its application to optoelectronic devices** DD.P2 1
Sujaya Kumar Vishwanath, Sung-Nam Lee, Jihoon Kim
Div. of Advanced Materials Engineering, Kongju National University, Chungchungnam-do 331-717, Korea; Dept. of Nano-Optical Engineering, Korea Polytechnical University, Gyeonggi 429-793, Korea

14:00 **Engineered Charge Transport of Organic Semiconductors by Polymer Gate Dielectrics for Complementary Printed Electronic Circuits** DD.P2 2
Kang-Jun Baeg, Hee Jin Jeong, Seung Yol Jeong, Joong Tark Han, Geon-Woong Lee, Yong-Young Noh, Dong-Yu Kim
Nano Carbon Materials Research Group, Korea Electrotechnology Research Institute (KERI); Department of Energy and Materials Engineering, Dongguk University; School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST)

14:00 **Solvent-free Direct Patterning of Highly Ordered Liquid Crystalline Organic Semiconductor via Template Assisted Self-assembly for Organic Transistors** DD.P2 3
Aryeon Kim, Kwang-Suk Jang, Jinsoo Kim, Jong Chan Won, Mi Hye Yi, Jae-Won Ka, Yun Ho Kim
Korea Research Institute of Chemical Technology

14:00 **Directed molecular orientation of pentacene on amorphous silicon oxide substrates using scratch lithography for OTFT** DD.P2 4
Aryeon Kim, Kwang-Suk Jang, Jinsoo Kim, Jae-Won Ka, Yun Ho Kim, Jong Chan Won
Korea Research Institute of Chemical Technology

14:00 **Engineering the Work Function of Inkjet-Printed Electrodes in All-Solution-Processed Organic Field-Effect Transistors** DD.P2 5
Hea-Lim Park, Chang-Min Keum, Bo-Yeon Lee, Sin-Hyung Lee, and Sin-Doo Lee
Seoul National University

14:00 **Rubbing effect of the insulator for enhanced electrical characteristics of organic field-effect transistors** DD.P2 6
Eul-Yong Shin,Min-Hoi Kim,Chur-Hyun Shin,Jae-Hyun Lee,Yoonseuk Choi
Hanbat National University,Daejeon,Republic of Korea

14:00 **Low-Temperature Curable Conductive Pastes for Flexible Electronics** **DD.P2 7**
Ho Sun Lim, Seong-Dae Park
Electronic Materials and Device Research Center, Korea Electronics Technology Institute

14:00 **Plasma-etched 3D Array of Nanotips Derived from CuPc Microtube: A Micro-assisted-Nano In-situ Homostructure Field-emitter** **DD.P2 8**
Uttam Kumar Ghorai†, Nilesh Mazumder‡, Rajarshi Roy‡, Subhajit Saha†, Swati Das‡, Dipayan Sen‡ and Kalyan K. Chattopadhyay†,‡
†School of Materials Science and Nanotechnology, Jadavpur University, Kolkata 700 032, India ‡Thin Film & Nanoscience Laboratory, Department of Physics, Jadavpur University, Kolkata 700 032, India

14:00 **Neutron Reflectivity of full-solution processed Polymer/Fullerene-derivative Bilayers for Organic Photovoltaics** **DD.P2 9**
(1) Giuseppe Paternò, (2) Victoria Garcia Sakai and (1) Franco Cacialli
(1) London Centre for Nanotechnology and Department of Physics and Astronomy, University College London, Gower Street, London WC1E 6BT, UK; (2) ISIS Pulsed Neutron and Muon Source; Science and Technology Facilities Council, Rutherford Appleton Laboratory, Harwell Science and Innovation Campus, Didcot OX11 0QX (UK)

14:00 **Spray coating of Carbon Nanotubes (CNTs) thin films for conductive transparent electrodes** **DD.P2 10**
L. Santarelli (1), F. Bausi (1), V. Robbiano (1), A. Abdellah (2), P. Lugli (2) & F. Cacialli (1)
(1) London Centre for Nanotechnology, University College London, Gower Street, London WC1E 6BT, United Kingdom (2) Lehrstuhl für Nanoelektronik, Technische Universität München, Arcisstrasse 21 D-80333 München, Germany

14:00 **Influence of crystallization on the phosphorescence of IrQ(ppy)2 organometallic compound in OLED's applications** **DD.P2 11**
I.C. Ciobotaru1*; S. Polosan1; H. Iovu2
1) National Institute of Materials Physics R-77125 Bucharest-Magurele, Romania
2) Advanced Polymer Materials Group, Faculty of Applied Chemistry and Materials Science, University "Politehnica" of Bucharest, 149 Calea Victoriei, 010072, Romania

14:00 **Flexible Transparent Conductors Based on Nanowires and Graphene** **DD.P2 12**
S. Alomairy, A.Fahimi, I. Jurewicz, A.B.Dalton
Department of Physics, University of Surrey, Guildford, GU1 7TX, UK

14:00 **Microwave Irradiated Highly Crystalline Transition Metal Oxides as Hole Extraction Layers for Efficient Organic Photovoltaics** **DD.P2 13**
Anastasia Soultati1,2, Maria Vasilopoulou1, Dimitra G. Georgiadou1, Panagiotis Argitis1, Ioannis Kostis3, N. A. Stathopoulos3, S. Savaidis3, Dimitris Davazoglou1
1Institute of Microelectronics, NCSR Demokritos, Terma Patriarchou Grigoriou, 15310 Aghia Paraskevi, Greece; 2 Department of Chemical Engineering, National Technical University of Athens, 15780 Athens, Greece; 3Department of Electronics, Technological Educational Institute (TEI) of Piraeus, 12244 Aegaleo, Greece

14:00 **Degradation Studys of Solar Cells with Laser Beam Induced Current Measurements** **DD.P2 14**
Thomas Stockinger, Olena Kozlova, Reinhard Schwödiauer, Siegfried Bauer
Soft Matter Physics, Johannes Kepler University Linz

14:00 **Structural and Electrical Study of Organophosphonate SAMs on AlOx/Al** **DD.P2 15**
Anshuma Pathak1,2, Achyut Bora1,2, Kung-Ching Liao3, Hannah Schmolke4, Antje Jung4, Claus-Peter Klages4, Jeffrey Schwartz3, Marc Tornow1,2
1) Institut für Halbleitertechnik, TU Braunschweig, Germany 2) Department of Molecular Electronics, TU München, Germany 3) Department of Chemistry, Princeton University, NJ, USA 4) Institut für Oberflächentechnik, TU Braunschweig, Germany

14:00 **Alternatives to ITO substrates, a comparative of conductive substrates in relation of conductivity and transparency** **DD.P2 16**
Giovana Américo Rosso, Leonardo Dias Cagnani
Bruno Bassi Millan Torres; Roberto Mendonça Faria.

14:00 **Controlling Microstructure of Pentacene Derivatives by Solution Processing: Impact of Structural Anisotropy on Optical and Charge Transport Properties** **DD.P2 17**
Jess Wade, David James, Jarvist M. Frost, Jenny Nelson and Ji-Seon Kim
Department of Physics and Centre for Plastic Electronics, Imperial College London

14:00 **Dual Layer Nanocomposite of Silicon Nanowires and Polythiophene for Organic-based Thin Film Transistors** **DD.P2 18**
Gen-Wen Hsieh1, Jia-Yuan Wu1, Ken Ogata2, Yan-Sheng Chen1
1College of Photonics, National Chiao Tung University, Tainan, TAIWAN; 2Engineering Department, University of Cambridge, Cambridge, UK

14:00 **Conformational changes of Glucose Oxidase for devices development** **DD.P2 19**
P. T. Campana, A. Marletta, O. N. Oliveira Jr., B. Mecheri, S.Licoccia
Universidade de São Paulo, São Paulo, Brazil; Universidade Federal de Uberlândia, Uberlândia, MG, Brazil; Universidade de São Paulo, São Carlos, SP, Brazil; University of Rome "Tor Vergata", Rome, Italy

14:00 **Stability of electrical doping in organic semiconductors** **DD.P2 20**
Jae-Hyun Lee, Yoonseuk Choi
School of Global Convergence Studies, Hanbat National University, Korea ; Department of Electronics, Hanbat National University, Korea

14:00 **One-pot synthesis of CdSe/ZnSe/ZnS core multi-shell quantum dots by the heating-up method for the use in light-emitting diodes** **DD.P2 21**
Mariana de Melo Silva1, Rodrigo Bianchi1 and Tonino Greco2
1 Laboratory of Polymers and Electronic Properties of Materials ? UFOP, Campos Morro do Cruzeiros s/n, 35400-000 Ouro Preto, Brazil, marianameloquimica@gmail.com, rfbufop@gmail.com; 2 Fraunhofer Institute for Applied Polymer Research (IAP) Geiselbergstrasse 69, 14476 Potsdam, Germany tonino.greco@iap.fraunhofer.de

14:00 **Controlling the kinetics of photo-oxidation processes of PPV derivatives: application in radiation sensors** **DD.P2 22**
G. R. Ferreira (1), E. R. deAzevedo (1), R. F. Bianchi (2)
(1) Instituto de F?sica de S?o Carlos, Universidade de S?o Paulo - USP, S?o Carlos - SP, Brazil. (2) Laboratory of Polymers and Electronic Properties of Materials - UFOP, Ouro Preto - MG, Brazil

14:00 **Thin hybrid films of conducting polymers/ TiO2 for polymeric photovoltaic cells** **DD.P2 23**
Antonio Jos? Felix Carvalho (1), Filipe Gon?alves da Silva (1, 2), Roberto Mendon?a Faria (2)
(1) Escola de Engenharia de Sao Carlos - USP, Sao Carlos, SP, Brazil (2)Instituto de Fisica de Sao Carlos - USP, Sao Carlos, Brazil

14:00 **Enormous Enhancements in Optoelectronic Efficiencies of Stretched Bi-layered P3HT Structure** **DD.P2 24**
Chung-lien Lu, Arnold C.-M. Yang
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan Hsinchu 300, Taiwan

14:00 **Close-patterned electrospinning of stretchable composite micro-electrode** **DD.P2 25**
Yan Yan Shery Huang
University of Cambridge

14:00 **Study of AC electrical conductivity of semiconductor composite biodegradable POEA/PBAT/ITO.** **DD.P2 26**
Bruno Elias Pereira Nogueira da Gama, Silmar Antonio Travain*
Universidade Federal de Ouro Preto, Departamento de Física, Laboratório de Polímeros e Propriedades Eletrônica de Materiais

15:30 **BREAK**

16:00 **PLENARY SESSION**

MODELLING AND SIMULATION IN ORGANIC DEVICES AND MATERIALS : T. GRECO

08:30 **Combining Quantum-Chemical and Stochastic Simulations in Organic Devices** DD.7 1
Rodrigo B. Capaz
Universidade Federal do Rio de Janeiro, Brazil; Inmetro, Brazil

09:00 **Quantitatively understanding C60 thin film growth through real-time x-ray characterization and KMC simulations** DD.7 2
S. Kowarik (1), S. Bommel (2,1), N. Kleppmann (3), C. Weber (1), P. Schäfer (1), J. Novak (4), S.V. Roth (2), F. Schreiber (4), S.H.L. Klapp (3)
1 Institut für Physik, Humboldt-Universität zu Berlin, Newtonstr. 15, 12489 Berlin, Germany 2 Deutsches Elektronen-Synchrotron (DESY), Notkestr. 85, 22607 Hamburg, Germany 3 Institut für Theoretische Physik, Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany 4Institut für Angewandte Physik, Universität Tübingen, Auf der Morgenstelle 10, 72076 Tübingen, Germany

09:15 **Scaling behavior of organic thin film transistors possessing contact resistance: Validity of the Gradual Channel Approximation** DD.7 3
Manfred Gruber, Egbert Zojer, Karin Zojer
Graz University of Technology, Institute of Theoretical and Computational Physics, 8010 Graz, Austria; Graz University of Technology, Institute of Solid State Physics, 8010 Graz, Austria; Graz University of Technology, Institute of Theoretical and Computational Physics, 8010 Graz, Austria

09:30 **Organophosphonate Monolayers on SiO2/Si Surfaces: a Model System for Studying Electronic Transport across Organic/Inorganic Interfaces** DD.7 4
A. Bora1,2, A. Pathak1,2, K.-C. Liao3, M.I. Vexler4, A. Kuligk5, A. Cattani-Scholz6, B. Meinerzhagen5, G. Abstreiter6, J. Schwartz3, M. Tornow1,2
1Institut für Halbleitertechnik, TU Braunschweig, Braunschweig 38106, Germany 2Department of Molecular Electronics, TU München, München 80333, Germany 3Department of Chemistry, Princeton University, NJ 08544, USA 4Ioffe Physical-Technical Institute, St.-Petersburg 194021, Russia 5Institut für Elektronische Bauelemente und Schaltungstechnik, TU Braunschweig, Braunschweig 38106, Germany 6Walter-Schottky Institut and ZNN, TU München, Garching 85748, Germany

09:45 **Tuning of the electronic properties of conjugated organic molecules.** DD.7 5
Alexander Tovsopyat, Günther Leising
Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, AUSTRIA

10:00 **BREAK**

GRAPHENE AND OTHERS TRANSPARENT CONDUCTIVE FILMS : L. TORSI

10:30 **Asymmetric Effect of Oxygen Adsorption on Electron and Hole Mobilities in Bilayer Graphene: Long- and Short-Range Scattering Mechanisms** DD.8 1
Rodrigo Lacerda
Departamento de Física, ICEx, Universidade Federal de Minas Gerais-UFMG, C.P. 702, 30123-970, Belo Horizonte, MG, Brazil

11:00 **Functionalized graphene oxide: A miracle material for spintronic, optoelectric and dielectric applications** DD.8 2
Prof. S K Saha
Department of Materials Science, Indian Association for the Cultivation of Science, Jadavpur, Kolkata 700032, India

11:15 **An investigation of the influence of carbon nanotubes on the electric properties of polymer nanocomposites using a simple structuration strategy** DD.8 3
Jaouad Marzouk, Arnaud Pothier, Johann Bouclé and Bernard Ratier*.
XLIM UMR 7252, Université de Limoges/CNRS, 123 Avenue A. Thomas, 87060 Limoges Cedex, France *Corresponding author: bernard.ratier@unilim.fr ; Phone : +33 (0)5 87 50 67 44

11:30 **Stretchable Conductive Networks of Carbon Nanotubes Using Plasticized Colloidal Templates** DD.8 4
Matthew J. Large, Izabela Jurewicz, Patnarin Worajittiphon, Alan B. Dalton
University of Surrey, Guildford, Surrey, GU2 7XH, United Kingdom

11:45 **Synthesis and Characterization of Graphene Oxide Nanosheet Wrapped White-Emissive Conjugated-Polymer Nanoparticles** DD.8 5
Dong Youn Yoo, Nguyen Dien Kha Tu, Su Jin Lee, Eunji Lee,Ho Sun Lim, Heesuk Kim*, Jung Ah Lim*
Interface Control Research Center, Korea Institute of Science and Technology (Korea); Department of Electrical Engineering, Korea University (Korea); Photo-electronic Hybrids Research Center, Korea Institute of Science and Technology (Korea); Graduate School of Analytical Science and Technology, Chungnam National University (Korea); Electronic Materials and Device Research Center, Korea Electronics Technology Institute (Korea)

12:00 **Work function modulation via p-doping of graphene and reduced graphene oxide transparent conductive films** DD.8 6
Francesco Bausi†, Andrea Schlierf‡, Emanuele Treossi‡, Vincenzo Palermo‡, Franco Cacialli†
† London Centre for Nanotechnology, University College of London, 17-19 Gordon Street WC1H 0AH London, UK; ‡ ISOF – Istituto Sintesi Organica a Fotoreattivitá CNR, Area della Ricerca di Bologna, Via Gobetti 101, 40129 Bologna, Italy

12:15 **Organic-inorganic hybrid spin valves based on C60 and Alq3 spacers** DD.8 7
Xianmin Zhang, Shigemi Mizukami, Qinli Ma and Terunobu Miyazaki
WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan

12:30 **LUNCH**

BIOELECTRONIC DEVICES : R. CAPAZ

14:00 **Smart bioelectronic devices** DD.9 1
Maria Magliulo1, Antonia Mallardi2, Kyriaki Manoli1, Gerardo Palazzo1 and Luisa Torsi1
1 Department of Chemistry, University of Bari, Via Orabona, 4, I-70126 Bari, Italy. 2 Istituto per i Processi Chimico-Fisici (IPCF), CNR – Via Orabona, 4, I-70126 Bari, Italy

14:30 **Enhanced melanin synthesis under oxygen pressure** DD.9 2
E. S. Bronze-Uhle, M. P. Silva, J. V.Paulin, C.F.O.Graeff
Departmento de Física, FC-UNESP, Av. Eng. Luiz Edmundo Carrijo Coube 14-01, 17033-360 Bauru, Brasil

14:45 **Wearable and Selective Organic Electrochemical Transistor for human Stress Monitoring** DD.9 3
Nicola Copped?, Giuseppe Tarabella, Marco Villani, Davide Calestani, Salvatore Iannotta, Andrea Zappettini
Institute of Materials for Electronics and Magnetism (IMEM) National Research Council (CNR), Parco Area delle Scienze 37/A - 43124 Parma, Italy

15:00 **Eumelanin-Based Biocompatible Semiconducting Thin Film for Stem Cell Growth** DD.9 4
Alessandro Pezzella, Mario Barra, Angelica Navarra, Michela Alfè, Paola Manini, Silvia Parisi, Antonio Cassinese, Marco d'Ischia
Department of Chemical Sciences University of Naples "Federico II" Via Cintia 4, I-80126 Naples, Italy

15:15 **Epindolidiones – Air-Stable Hydrogen-Bonded Pigments for Organic Electronic Devices** DD.9 5
Cigdem Yumusak, Eric Daniel Glowacki, Giuseppe Romanazzi, Uwe Monkowius, Halime Coskun, Nevsal Sunger, Gundula Voss, Niyazi Serdar Sariciftci
Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University, A-4040 Linz, Austria; Dipartimento di Ingegneria Civile, Ambjentale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Via Orabona 4, 70125, Bari, Italy; Institute of Inorganic Chemistry, Johannes Kepler University, A-4040 Linz, Austria; Solar Energy Institute, Ege University, Bornova-Izmir, Turkey

15:30 **BREAK**

16:00 **Paper Electronics Using Environmentally Friendly Materials** **DD.10 1**
Ronald Österbacka
Åbo Akademi University, Dept. of Natural Sciences and Center for Functional Materials, Finland

16:30 **Oriented Thin Films of Thiophene-Based Covalent Organic Frameworks** **DD.10 2**
Dana. D. Medina, Veronika Werner, Florian Auras, Mirjam Dogru, Joerg Schuster, Markus Doeblinger, Paul Knochel, Thomas Bein
University of Munich, Department of Chemistry and Center for NanoScience (CeNS), Butenandtstr. 5-13, 81377 Munich, Germany. E-mail: dana.medina@cup.uni-muenchen.de

16:45 **Growth and Alignment of Thin Film Organic Single Crystals from Dewetting Patterns** **DD.10 3**
Jean-Nicolas Tisserant, Roland Hany, Frank Nüesch, Raffaele Mezzenga, Jakob Heier
Empa, Swiss Federal Laboratories for Materials Testing and Research, Laboratory for Functional Polymers, CH-8600 Dübendorf, Switzerland; ETH Zürich, Department of Health Sciences & Technology, Laboratory of Food and Soft Materials Science, CH-8092 Zürich, Switzerland

17:00 **High temperature rubbing : a versatile method to align semiconducting polymers leading to anisotropic opto-electronic properties** **DD.10 4**
Laure Biniek,a Elena Zabrova,b Eric Gonthier,a Nicolas Crespo-Monteiro,a Stéphanie Pouget,c Navaphun Kayunkid,a Nicolas Leclerc,b David Djurado,c Martin Brinkmann.a
a: Institut Charles Sadron (UPR 22), Université de Strasbourg-CNRS ; b: ICPEES (UMR 7515), Université de Strasbourg-CNRS ; c : CEA Grenoble, INAC/SPrAM (UMR 5819), CEA-CNRS-Univ. J. Fourier-Grenoble 1.

17:15 **A Comparison of Properties of Phthalocyanine Thin Films Prepared by Organic Molecular Evaporation and Pulsed Laser Deposition** **DD.10 5**
M. Novotny1, P. Fitl2, A. Bensalah-Ledoux3, S. Guy3, J. Bulir1, L. Fekete1, J. Nahlik2, E.Maresova2, B. Moine3, J. Lancok1, M.Vrnata2
1) Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2, 182 21 Prague, Czech Republic; 2) Institute of Chemical Technology, Technicka 5, 166 28 Prague 6, Czech Republic; 3) Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne cedex, France

17:30 **Stability and reliability of top-gate organic field-effect transistors using bilayer gate dielectrics** **DD.10 6**
Canek Fuentes-Hernandez
Center for Organic Photonics and Electronics (COPE) School of Electrical and Computer Engineering Georgia Institute of Technology, Atlanta, Georgia 30332, USA

POSTER SESSION 3

18:00 **Graphene exfoliation with organic dyes: the effect of charge, dipole and molecular structure** **DD.P3 1**
Andrea Schlierf,A Huafeng Yang,B Elias Gebremedhn,C Emanuele Treossi,A Luca Ortolani,D Liping Chen,C Andrea Minoia,C Vittorio Morandi,D Paolo Samorìe, Cinzia Casiraghib, David Beljonnec, Vincenzo Palermoa*
A ISOF – National Research Council, Bologna, Italy; B School of Chemistry and Photon Science Institute, Manchester University, United Kingdom; C Laboratory for Chemistry of Novel Materials, University of Mons, Mons, Belgium; Dimm – National Research Council, Bologna, Italy; E ISIS & icfrc, Université de Strasbourg & CNRS, Strasbourg, France.

18:00 **Novel, Low-Cost, High Capacitance Nanocomposite Dielectrics for Printed Electronics** **DD.P3 2**
Sheida Faraji Prof Michael Turner Dr Leszek Majewski
University of Manchester School of Electrical and Electronic Engineering Microelectronics and Nanostructures Group

18:00 **Transparent conducting electrodes networked by silver nanowires inks with binders and dispersants** **DD.P3 3**
Sung Ho Lee, Jong Deok Park, Haekyoung Kim
School of Materials Science and Engineering, Yeungnam University, Gyeungsan, South Korea

18:00 **Features of current transients in organic field effect transistors** **DD.P3 4**
N.Nekrašas, K.Genevičius, G.Juška
Department of Solid State Electronics, Vilnius University, Saulėtekio al. 9, III k. Vilnius, Lithuania

18:00 **On the distinct molecular architectures of dipping- and spray-LbL films containing lipid vesicles** **DD.P3 5**
Pedro H. B. Aoki,(1) Priscila Alessio,(1) Diogo Volpati (3), Fernando V. Paulovich (4), A. Riul Jr. (2), Osvaldo N. Oliveira Jr. (3), Carlos J. L. Constantino (1)
(1) DFQB, Faculdade de Ciências e Tecnologia, UNESP Univ Estadual Paulista, Presidente Prudente, SP, Brazil, 19060-900 (2) Applied Physics Department, Gleb Wataghin Institute of Physics, State University of Campinas, UNICAMP, Campinas, SP, 13083-859, Brazil (3) São Carlos Institute of Physics, University of São Paulo, CP 369, 13560-970 São Carlos, SP, Brazil (4) Institute of Mathematical Sciences and Computing, CP 668, 13560-970 São Carlos, SP, Brazil

18:00 **Effect of Surface Wettability and Topography of an Insulator on Mobility Enhancement of Soluble Organic Semiconductors** **DD.P3 6**
Hea-Lim Park, Sin-Hyung Lee, Chang-Min Keum, In-Ho Lee, Sin-Doo Lee
Seoul National University

18:00 **INVESTIGATION OF HOLE MOBILITY ON STRUCTURE OF CARBAZOLE DERIVATIVES** **DD.P3 7**
J. Ramanseviciute 1, B. Lenkeviciute 1, K. Arlauskas 1, V. Getautis 2
1 Department of Solid State Electronics,Vilnius University; 2 Department of Organic Chemistry, Kaunas University of Technology

18:00 **Shottky and Bardeen limit in organic semiconductors** **DD.P3 8**
Thangavel Kanagasekaran, Shang Hui, Hidekazu Shimotani, Satoshi Heguri and Katsumi Tanigaki
WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University. Graduate School of Science, Department of Physics, Tohoku University.

18:00 **Influence of the Density-of-States in the Open-Circuit Voltage of Small-Molecule Solar Cells** **DD.P3 9**
Sergi Galindo, Guillermo Gerling, Mehrad Ahmadpour, , Ramon Alcubilla, Cristobal Voz, Joaquim Puigdollers
Enginyeria Electronica and Center for Research in nanoengineering, Universitat Politecnica Catalunya, Barcelona (Spain)

18:00 **ELECTRONIC TRANSITION CHARACTERIZATIONS OF FLUORENE-PPV AND FLUORENE-MEH-PPV COPOLYMER MODELS** **DD.P3 10**
M. M. da Silva, C. E. T. de Magalhães, G. R. Ferreira, R. F. Bianchi, M. F. Siqueira
Laboratory of Polymers and Electronic Properties of Materials, Physics Department, Universidade Federal de Ouro Preto, Universidade de Ouro Preto, C. P. 35400-000, Ouro Preto, MG, Brazil.

18:00 **A New Red Phosphorescent Cyclometalated Iridium(III) Complex** **DD.P3 11**
Aysen Goren,Cigdem Sahin
Chemistry Department, Art & Science Faculty, Pamukkale University, Denizli, TURKEY

18:00 **Femtosecond transient absorption measurement of energy and charge transfers in donor-acceptor liquid crystalline dyad and triad** **DD.P3 12**
J. H. Woo1, K. J. Lee1, L. Mazur2,3, E. S. Kim1, Y. Xiao2, F. Mathevet2, A.-J. Attias2, J. W. Wu1, and J.-C. Ribierre*1,4
1Physics Dept. & CNRS-Ewha Int. Research Center, Ewha Womans University, Seoul, Korea ; 2Laboratory of Polymer Chemistry, University Pierre et Marie Curie, Paris, France ; 3Institute of Physical and Theoretical Chemistry, Wroclaw Univ. of Technology, Wroclaw, Poland ; 4Center for Organic Photonics and Electronics Research, Kyushu University, Fukuoka, Japan

18:00 **Gain Properties of Thiophene/Furan/Phenylene Co-oligomer Single Crystals: Energy Efficiency and Distribution** **DD.P3 13**
Hui Shang, Susumu Ikeda, Kanagasekaran Thangavel, Hidekazu Shimotani, Kazuaki Oniwa, Tienan Jin, Naoki Asao, Yoshinori Yamamoto, Hiroyuki Tamura, Ikutaro Hamada, Kenta Abe, Masayuki Yoshizawa, Katsumi Tanigaki
Department of Physics, Tohoku University; WPI-AIMR, Tohoku University; Department of Chemistry,Tohoku University

18:00 **Harnessing the potential of helically-shaped semiconducting molecules in organic electronics: benzo[i]pentahelicene-3,6-dione** **DD.P3 14**
Maria Paola Bracciale(1), Guhyun Kwon(2), Alessandra Broggi(1), Antonio Facchetti(3,4), Tobin J. Marks(3), Assunta Marrocchi(5), Choongik Kim(2), Maria Laura Santarelli(1)
(1)Department of Chemical Engineering Materials Environment, University of Rome Sapienza, via Eudossiana 18, 00184 Rome, Italy; (2)Department of Chemical and Biomolecular Engineering, Sogang University, Seoul 121-742, Korea; (3) Department of Chemistry, the Materials Research Center, and the Argonne-Northwestern Solar Energy Research Center, Northwestern University, 2145 Sheridan Road, Evanston, Illinois 60208, USA; (4)Polyera Corporation, 8045 Lamon Avenue, Skokie, Illinois 60077, USA; (5)Department of Chemistry, Biology and Biotechnology, University of Perugia, via Elce di Sotto 8, 06123 Perugia, Italy.

18:00 **Steady-state and time-resolved photophysical behaviour in solution of a new donor-acceptor oligothiophene-fullerene compound** **DD.P3 15**
A. Guarnaccio (1,2), P. A. Loukakos (3), D. Anglos (3), A. Santagata (1), M. D'Auria (2), R. Racioppi (2), R. Teghil (1,2), A. De Bonis (1,2), G. Lendvay (4)
(1) CNR-ISM U.O.S. Potenza, Zona Ind. – 85050 Tito Scalo (PZ) – Italy; (2) Department of Science, University of Basilicata, Via dell'Ateneo Lucano 10 – 85100 Potenza – Italy; (3) Institute of Electronic Structure and Laser-IESL, Foundation for Research and Technology Hellas – FORTH, 71110 Heraklion, Greece; (4) Research Centre for Natural Sciences, Institute of Materials and Environmental Chemistry, Hungarian Academy of Sciences, 1025 Budapest, Pusztaszeriút 59-67, Hungary.

18:00 **Synthesis, Characterization and Luminescent Property of Iridium Complexes with Amidinate Ligands** **DD.P3 16**
Cigdem Sahin (a), Aysen Goren (a), Canan Varlikli (b)
(a) Chemistry Department, Art & Science Faculty, Pamukkale University, Denizli, TURKEY; (b) Solar Energy Institute, Ege University, Bornova, Izmir, TURKEY

18:00 **Synthesis, Characterization and Luminescent Property of an Amide Functionalised Ruthenium(II) Complex** **DD.P3 17**
Cigdem Sahin
Department of Chemistry, Art & Science Faculty, Pamukkale University, Denizli, TURKEY

18:00 **ORIGIN OF THE ADVANCED CHARGE TRANSPORT PROPERTIES OF INDIGO THIN FILMS: INFLUENCE OF THE DIELECTRIC ON THE CRYSTAL STRUCTURE OF THE SEMICONDUCTOR** **DD.P3 18**
Lidiya I. Leshanskaya, Denis V. Anokhin, Evgeniy V. Sheglov, Nadezhda N. Dremova, Diana K. Susarova, Pavel A. Troshin
Institute for Problems of Chemical Physics

18:00 **Laser-induced charge separation in organic nanofibers** **DD.P3 19**
Luciana Tavares1, Dino Behn2, Jakob Kjelstrup-Hansen1, Alf Mews2.
1 University of Southern Denmark, NanoSyd, Mads Clausen Institute, Alsion 2, DK-6400 Sønderborg, Denmark; 2 University of Hamburg, Institute of Physical Chemistry, Grindelallee 117, DE-20146 Hamburg, Germany.

18:00 **Ellipsometric analysis of the zinc phthalocyanine/silver nanoparticles structure** **DD.P3 20**
Jiří Bulíř, Michal Novotný, Eva Marešová, Jan Lančok, Ladislav Fekete; Přemysl Fitl, Martin Vrňata; Marek Škeren
Institute of Physics, Academy of Sciences of the Czech Republic; Institute of Chemical Technology, Dep. Physics and Measurements, Czech Republic; Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague

18:00 **Characterization of thickness dependent optical properties of zinc phthalocyanine thin film** **DD.P3 21**
Eva Marešová*, Jiří Bulíř*, Jan Lančok*, Petr Pokorný*, Michal Novotný*, Ladislav Fekete*, Přemysl Fitl, Martin Vrňata
Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2, 18221 Prague 8; Institute of Chemical Technology, Dep. Physics and Measurements, Czech Republic

18:00 **Controlling photo-oxidation processes of a polyfluorene derivative: the effect of additives and mechanism** **DD.P3 22**
G.R. Ferreira1, B. Novack2, A. Magalhães3, E.R. deAzevedo4, E.L. de Sá5, L.C. Akcelrud2, R.F. Bianchi1
G.R. Ferreira1, B. Novack2, A. Magalhães3, E.R. deAzevedo4, E.L. de Sá5, L.C. Akcelrud2, R.F. Bianchi1,* 1 Laboratory of Polymers and Electronic Properties of Materials - UFOP, Ouro Preto - MG, Brazil 2 Paulo Scarpa Polymer Laboratory - UFPR, Curitiba - PR, Brazil 3 Instituto de Química, Universidade Estadual de Campinas – UNICAMP, Campinas - SP, Brazil. 4 Instituto de Física de São Carlos, Universidade de São Paulo - USP, São Carlos - SP, Brazil. 5 Chemistry Department, Federal University of Parana-Curitiba PR. Brazil

18:00 **Design, synthesis, liquid crystalline and charge transport properties of side-chain pi-conjugated polymers based on intertwined lamello-columnar co-assemblies** **DD.P3 23**
Yiming Xiao 1, Danli Zeng 1, Ibtissam Tahar-Djebbar 1, Leszek Mazur 1-4, Benoit Heinrich 2, Benoit Donnio 2, Daniel Guillon 2, Jeong Weon Wu 3, Jean-Charles Ribierre 3, David Kreher 1, Fabrice Mathevet 1, André.-Jean Attias 1,
1 Lab. de Chimie des Polymères, UPMC-CNRS, 3 rue Galilée 94200, Ivry sur Seine, France; 2 Département des Matériaux Organiques, IPCMS, Strasbourg, France; 3 CNRS-Ewha International Research Center, Ewha Womans University, Korea; 4 Institute of Physical and Theoretical Chemistry, Wroclaw U. of Technology, Wroclaw, Poland;

18:00 **Comparative analysis on the optical properties of bilirubin and MEH-PPV thin film under blue, green and blue-green light therapies** **DD.P3 24**
G. R. Ferreira (1), A. M. Tannure (2), L.C. Cardoso (2), M.F.S. Siqueira (2), R.F. Bianchi (2)
(1) Instituto de Física de São Carlos, Universidade de São Paulo (2) Laboratório de Polímeros e de Propriedades Eletrônicas de Materiais, Depto de Física – Universidade Federal de Ouro Preto.

18:00 **Photoconductivity properties of polyvinil alcohol** **DD.P3 25**
U. Coscia1,2, G. Ambrosone2,3, A. Pezzella4
1CNISM Unita' di Napoli, Complesso Universitario MSA, via Cinthia, 80126, Napoli, Italy 2Dipartimento di Fisica, Università di Napoli "Federico II" Complesso Universitario MSA, via Cintia, I-80126 Napoli, Italy 3SPIN-CNR, Complesso Universitario MSA, via Cintia, I-80126, Napoli, Italy 4Department of Chemical Sciences,Complesso Universitario Monte S. Angelo, Via Cintia, I-80126 Naples - Italy

18:00 **Electrochemically synthesized poly(3,4-ethylenedioxythiophene)/graphene composite films** **DD.P3 26**
Pia Damlin, Milla Suominen, Carita Kvarnström
University of Turku, Turku University Centre for Materials and Surfaces (MATSURF); Laboratory of Materials Chemistry and Chemical Analysis, FIN-20014 Turku, Finland

NEW HORIZONS IN ORGANIC MATERIALS AND DEVICES : R. FARIA

08:30 **Ultrahigh Magnetoresistance at Room Temperature in Molecular Wires** **DD.11 1**
Wilfred G. van der Wiel
NanoElectronics Group, MESA+ Institute for Nanotechnology, University of Twente

09:00 **Development of self-heatable conductive ink for low temperature processable flexible electronics** **DD.11 2**
Dong-Youn Shin(a), Jin Wook Han(b), Sangki Chun(c)
(a) Department of Graphic Arts Information Engineering, Pukyong National University, Yongdang-dong, Nam-gu, Busan, 608-739, Republic of Korea; (b) Department of Chemistry, College of Natural Sciences, Institute of Nanoscience and Technology, Hanyang University, Seoul, 133-791, Republic of Korea; (c) Information and Electronic Materials Institute, LG Chem Research Park, Daejeon, 305-380, Republic of Korea

09:15 **Influence of the Annealing Temperature on the Properties of Inkjet Printed Porous Silver Layers** **DD.11 3**
D. Sette, C. Poulain, V. Mandrillon, A. Blayo
CEA, LETI MINATEC Campus, Grenoble, FRANCE; Grenoble INP – Pagora, Grenoble, FRANCE

09:30 **Long-range self-assembling donor-acceptor block co-oligomers** **DD.11 4**
(1) P.O. Schwartz, T. Roland, B. Heinrich, J. Léonard, S. Haacke, S. Méry*, (2) E. Zaborova, N. Leclerc, (3) L. Biniek, M. Brinkmann, (4) T. Regrettier, R. Bechara, P. Lévêque, T. Heiser
(1) IPCMS, CNRS UMR 7504, 23 rue du Loess, 67034 Strasbourg ; (2) ICPEES, CNRS UMR 7515, 25 rue Becquerel, 67087 Strasbourg ; (3) ICS, CNRS UPR 22, 23 rue du Loess, 67034 Strasbourg ; (4) ICube, D-ESSP-MaCÉPV, CNRS UMR 7357, 23 rue du Loess, 67037 Strasbourg.

09:45 **Design of functional derivatives of indigo: promising semiconductor materials for organic field-effect transistors** **DD.11 5**
Irina V. Klimovich (1), Lidiya I. Leshanskaya (1), Denis V. Anokhin (1), Dmitry V. Novikov (1), Sergey I. Troyanov (2), Nadezhda N. Dremova (1) and Pavel A. Troshin (1)
(1) The Institute of Problems of Chemical Physics of the Russian Academy of Sciences; (2) Lomonosov Moscow State University, Chemistry Faculty

10:00 **BREAK**

CHARACTERIZATION METHODS IN ORGANIC ELECTRONICS : M. MUCCINI

10:30 **SELF-ASSEMBLED MONOLAYER ELECTRONICS** **DD.12 1**
Marcus Halik
University Erlangen-Nürnberg, Organic Materials & Devices – OMD, Department of Materials Science, 91058 Erlangen, Germany

11:00 **E-PIA: Electrical detected Photo-Induced Absorption, a combined electro/optical characterization technique** **DD.12 2**
G.J. Matt*, M. Richter*, M. Bednorz**, P. Stadler***, T. Fromherz**, C. J. Brabec*
* I-Meet, FAU University Erlangen, Germany; ** Institute for Semiconductor Physics, J. Kepler University, Austria; *** LIOS, J. Kepler University, Austria

11:15 **Impedance Spectroscopy for Study of Degradation of Organic Solar Cells** **DD.12 3**
Olena Kozlova, Matthew White, Reinhard Schwoediauer, Siegfried Bauer, Markus Scharber
Johannes Kepler University, Linz, Austria

11:30 **Photoluminescence and radiative-rate modifications of a luminescent conjugated polymer infiltrated into silicon rugate filters** **DD.12 4**
V. Robbiano (1), S. Surdo (2), G. Canazza (3), S. Mian (4), D. Comoretto (3), G.Barillaro (2), & F. Cacialli (1)
(1) London Centre for Nanotechnology, University College London, Gower Street, London WC1E 6BT, United Kingdom; (2) Dipartimento di Ingegneria della Informazione, Università di Pisa, via G. Caruso 16, 56126 Pisa, Italy; (3) Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, via Dodecaneso 31, 16146 Genova, Italy; (4) Department of Physics, McDaniel College, Westminster MD 21157, USA;

11:45 **Low-temperature fluorescence from solvent-free PCBM single crystals** **DD.12 5**
Giulia Tregnago, Michael Wykes, Giuseppe Paternó, Nico Seidler, Guy Matmon, David Beljonne, Franco Cacialli
Department of Physics and Astronomy and London Centre for Nanotechnology, University College London, Gower Street, WC1E 6BT London (UK); IMDEA Nanociencia, C/Faraday, 9, Campus Universitario de Cantoblanco, 28049 Madrid (Spain); Laboratory for Chemistry of Novel Materials, University of Mons Place du Parc, 20, 7000 Mons (Belgium)

12:00 **The photophysics of luminescence in multilayered organic nanofibers** **DD.12 6**
Luciana Tavares1, Francesco Quochi2, Clemens Simbrunner3, Günther Schwabegger3, Horst-Günter Rubahn1, Jakob Kjelstrup-Hansen1.
1 University of Southern Denmark, NanoSyd, Mads Clausen Institute, Alsion 2, DK-6400 Sønderborg, Denmark; 2 Università degli Studi di Cagliari, Dipartimento di Fisica, Complesso Universitario di Monserrato, I-09042 Monserrato (CA), Italy; 3 Johannes Kepler University, Institute of Semiconductors and Solid State Physics, Altenbergerstrasse 69, AT-4040 Linz, Austria.

12:15 **Intertwined lamello-columnar co-assemblies in liquid-crystalline side-chain pi-conjugated polymers: towards a new class of nanostructured supramolecular organic semiconductors** **DD.12 7**
Yiming Xiao 1, Danli Zeng 1, Ibtissam Tahar-Djebbar 1, Farid Kameche 1, Navaphun Kayunkid 2, Martin Brinkmann 2, Daniel Guillon 3, Benoît Heinrich 3, Bertrand Donnio 3, Jeong Weon Wu 4, Jean-Charles Ribierre 4, Dimitri A. Ivanov 5, Emmanuelle Lacaze 6, David Kreher 1, André-Jean Attias 1, Fabrice Mathevet 1,
1 Lab. de Chimie des Polymères, UPMC-CNRS, 3 rue Galilée 94200, Ivry sur Seine, France; 2 Institut Charles Sadron, 23 rue du Loess, Strasbourg, France; 3 Département des Matériaux Organiques, IPCMS, 23 rue du Loess, Strasbourg, France; 4 CNRS-Ewha International Research Center, CERC, Ewha Womans University, Korea; 5 Institut de Science des Matériaux de Mulhouse, 15 rue Jean Starcky, Mulhouse, France; 6 Institut des NanoScience de Paris, UPMC-CNRS, 4 Place Jussieu 75005, Paris, France;

12:30 **LUNCH**

SYMPOSIUM T

Non-classical nucleation and crystallization

Symposium Organizers:

Helmut Cölfen, University of Konstanz, Germany

Markus Niederberger, Laboratory for Multifunctional Materials, Zürich, Switzerland

Lennart Bergström, Stockholm University, Sweden

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26 May 2014

Nonclassical crystallization : Helmut Cölfen

09:00 **Mesocrystal growth of a mesoporous material** **T.1 1**
VIveka Alfredsson
Physical Chemistry, Lund University, Box 124, SE-22100 Lund, Sweden

09:30 **Crystallinity selective synthesis of gold nanocrystals and their self-assemblies into mesocrystal** **T.1 2**
Nicolas Goubet 1, Cong Yan 1, Hervé Portalès 1, Pierre-Antoine Albouy 2, Marie-Paule Pileni 1
1 laboratoire MONARIS, Université Pierre et Marie Curie, and CNRS UMR 8233, 4 Place Jussieu, 75005 Paris, France; 2 Laboratoire de Physique des Solides, Université Paris-Sud, UMR 8502, 91405 Orsay, France

09:45 **The Log-Normal Particle Size Distribution – a Fingerprint of Coalescent Grain Growth at the Nanoscale?** **T.1 3**
Marek Petrik* and Bernd Harbrecht
Philipps-Universität Marburg Fachbereich Chemie und Wissenschaftliches Zentrum für Materialwissenschaft WZMW Hans-Meerwein-Straße 35043 Marburg
e-Mail: petrik@chemie.uni-marburg.de

10:00 **Coffee break**

Nucleation in amorphous materials : Markus Niederberger

10:30 **Formation of apatite nanocrystal s from amorphous calcium phosphate – insight from in situ X-ray diffraction** **T.2 1**
Henrik Birkedal
iNANO & Department of Chemistry, Aarhus University, 14 Gustav Wieds Vej, 8000 Aarhus, Denmark; hbirkedal@chem.au.dk

11:00 **Embryonic Nucleation of High Number-Density Nanocrystals** **T.2 2**
Mert Ovun, Mustafacan Kutsal, Can Yildirim, Ryan.T. Ott, Matthew.J. Kramer, Paul M. Voyles, Y.Eren Kalay
METU; METU; METU; Ames Laboratory; Ames Laboratory; University of Wisconsin; METU

11:15 **Heteroepitaxial devitrification of silica to integrate functional oxide nanostructures on silicon** **T.2 3**
A. Carretero-Genevrier1, M. Gich2, L. Picas3, J. Gazquez2, J. Oró-Solé2, G.L. Drisko4, D. Grosso4, E. Ferain5, T. Puig2, X. Obradors2 ,C. Sanchez4, J. Rodriguez-Carvajal6, N. Mestres2
1Institut des Nanotechnologies de Lyon (INL) CNRS- Ecole Centrale de Lyon, 36 avenue Guy de Collongue, 69134 Ecully, France. 2Institut de Ciència de Materials de Barcelona ICMAB, Consejo Superior de Investigaciones Científicas CSIC, Campus UAB 08193 Bellaterra, Catalonia, Spain 3UMR 144, Institut Curie, 12 Rue Lhomond, 75005,Paris, France 4Laboratoire Chimie de la Matière Condensée, UMR UPMC-Collège de France-CNRS 7574. Collège de France, 11 place Marcelin Berthelot, 75231 Paris, France. 5Institute of Condensed Matter and Nanosciences, Bio & Soft Matter (IMCN/BSMA), Université Catholique de Louvain, Croix du Sud 1,1348 Louvain-la-Neuve, Belgium, and it4ip s.a., rue J. Bordet (Z.I. C), 7180 Seneffe, Belgium 6Institut Laue-Langevin, 6 rue Jules Horowitz, BP 156, 38042 Grenoble Cedex 9, France

11:30 **Grain alignment in thin silicon films by impurity controlled grain growth** **T.2 4**
Robert Endler, Jörg Grenzer, René Hübner, Lars Rebohle, Slawomir Prucnal and Wolfgang Skorupa
Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, P.O. Box 510119, 01314 Dresden, Germany

11:45 **Nanocrystallization of III-V compound semiconductors in Si by ion beam implantation and sub-second flash lamp annealing** **T.2 5**
R. Wutzler, L. Rebohle, S. Prucnal, F. Bregolin, M. Helm, W. Skorupa
Helmholtz-Zentrum Dresden - Rossendorf, Bautzner Landstr. 400, 01328 Dresden, Germany

12:00 **Electron irradiation as a potential tool to create bimodal particle size distribution of different composition in glass ceramics** **T.2 6**
Halina B. Stanley1, Dipanjan Banerjee1, Jim Ciston2, Christian H. Liebscher2, Daniel Hermida Merino1, Alessandro Longo1, Phillip Pattison3, Sabyasachi Sen4 and Wim Bras1*
1 Netherlands Organisation for Scientific Research (NWO), DUBBLE@ESRF, 6 Rue Jules Horowitz, 38000 Grenoble, France; 2 National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, One Cyclotron Road, MS 72-150, Berkeley, CA 94720-8250, U.S.A.; 3 SNBL@ESRF, 6 Rue Jules Horowitz, 38000 Grenoble, France; 4 Department of Chemical Engineering and Materials Science, University of California Davis, Davis, California, U.S.A.

12:15 **Lunch break**

Metal nanoparticles and colloids : Lennart Bergström

14:00 **Synthesis of Branched Nanomaterials** **T.3 1**
Richard D Tilley
School of Chemical and Physical Sciences and MacDiarmid Institute, Victoria University of Wellington, New Zealand.

14:30 **Taking a Look into the Black Box - New Perspectives of Metal Nanoparticle Formation** **T.3 2**
Maria Wuithschick, Frieder Kettemann, Steffen Witte, Klaus Rademann, Jörg Polte
Humboldt-Universität zu Berlin, Berlin, Germany

14:45 **The Non-intuitive Formation Mechanism of Cu-Zn-S Nanoparticles** **T.3 3**
Derrick Mott, Maninder Singh, Shinya Maenosono
Japan Advanced Institute of Science and Technology, School of Materials Science, 1-1 Asahidai, Nomi, Ishikawa, 923-1211, Japan

15:00 **Ultrathin Size- and Shape-Controlled Colloidal Cu2-xS 2D Nanosheets** **T.3 4**
Ward van der Stam, Quinten A. Akkerman, Johannes D. Meeldijk, Xiaoxing Ke, Sara Bals, Gustaaf van Tendeloo, and Celso de Mello Donegá
Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, Utrecht University, P.O. Box 80000, 3508 TA Utrecht (The Netherlands); Electron Microscopy Utrecht, Utrecht University, 3584 CH Utrecht (The Netherlands); EMAT, University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp (Belgium)

15:15 **Spontaneous Growth of Magnesium Hydroxide Needles at Ambient Conditions** **T.3 5**
Amir R. Gheisi(1), Andreas Sternig(1), Mojca Rangus(2), Günther Redhammer(3), Martin Hartmann(2), Oliver Diwald (3)
(1)Institute of Particle Technology, University of Erlangen-Nürnberg, Erlangen, Germany; (2)Erlangen Catalysis Resource Center, University of Erlangen-Nürnberg, Erlangen Germany;(3)Department of Materials Science & Physics, Paris-Lodron University of Salzburg, Salzburg, Austria

15:30 **Coffee break**

Posters : Helmut Cölfen

16:00 **A facile and novel synthesis route to high-surface-area and porous tetravalent metal oxides using the colloid mill and hydrothermal technique** **T.P 1**
Guoli Fan, Jing Kang, Feng Li
State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, P.R.China.

16:00 **Wagner-Vengrenovich distribution** **T.P 2**
B.V. Ivanskii, I.I. Panko, M.O. Stasyk, I.V. Fesiv
Department of Physic, Chernivtsi National University,. Chernivtsi 58012, Ukraine

16:00 **Mechanism and kinetic of formation of ZnO and SnS nanocrystals during chemical synthesis in the liquid medium.** **T.P 3**
R.D. Vengrenovich, I.I. Panko, B.V. Ivanskii, I.V. Fesiv, M.O. Stasyk
Department of Physic, Chernivtsi National University,. Chernivtsi 58012, Ukraine

16:00 **Embedded SiGe alloy nanoparticles formed by co-sputtering of Si, Ge** **T.P 4**
A. Hernández-Hernández(1,2), L. A. Hernández-Hernández(3), F. De Moure-Flores(4), E. Campos-González(1), J. G. Quiñones-Galván(5), J. Santoyo-Salazar(1) J. Aguilar-Hernández(3), G. Contreras-Puente(3), G. Santana (2) and M. Meléndez-Lira(1).
(1) Departamento de Física, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, A.P. 14740, C.P. 07300, México, Distrito Federal, México. (2) Instituto de Investigaciones en Materiales, Universidad Autónoma de México, Circuito Exterior, Ciudad Universitaria, Coyoacán, 04510, México, D. F. (3) Escuela Superior de Física y Matemáticas del Instituto Politécnico Nacional, Edificio 9 U.P. Adolfo López Mateos, Col. San Pedro Zacatenco, C.P. 07730 (4) Facultad de Química Materiales, Universidad Autónoma de Querétaro, Querétaro, 76010, México. (5) Departamento de Física, Instituto Nacional de Investigaciones Nucleares, Apdo. Postal 18-1027, México, DF 11801, México

16:00 **Growth of dilute bismides GaAsBi/GaAs nanowires by metalorganic vapor phase epitaxy** **T.P 5**
Y. Soda*, H. Fitouri, C. Bilel, A. Rebey, and B. El Jani
University of Monastir, Faculty of Sciences Unité de Recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5019 Monastir, Tunisia E-mail: * benzaied.yethreb@yahoo.fr

16:00 **Investigation of the structural relationship of the liquid and solid phases during the formation of Al single crystals on the basis of analysis of AE signals** **T.P 6**
VB Vorontsov, V.K.Pershin , AS Cherepanov
Department «Physics and Chemistry» URALS STATE UNIVERSITY of RAILWAY TRANSPORT

16:00 **Modelling of carbon nanoparticles adsorbed on graphene** **T.P 7**
Veera Krasnenko1, Aile Tamm1, Vadim Boltruško1, Anna-Liisa Peikolainen2, Jekaterina Kozlova1, Kaupo Kukli1, Vladimir Hizhnyakov1
1 University of Tartu, Institute of Physics, Department of Materials Science, Riia 142, EE-51014 Tartu, Estonia; 2 IMS Lab, Institute of Technology, University of Tartu, Nooruse 1, EE-50411 Tartu,Estonia

16:00 **Liquid Metal Engineering and Its Implications to Solidification Science and Technologies** **T.P 8**
Z.Fan
The EPSRC Centre-LiME, BCAST, Brunel University, Uxbridge, UB8 3PH, UK

16:00 **THERMODYNAMIC STUDY OF THE TERNARY SYSTEM GALLIUM-ARSENIC-BISMUTH** **T.P 9**
N. Elayech*, H. Fitouri, Y. Soda, A. Rebey, and B. El Jani
Université de Monastir, Faculté des Sciences de Monastir Unité de Recherche sur les Hétéro-Epitaxies et Applications, 5000 Monastir, Tunisia E-mail: * elayech@yahoo.fr

16:00 **Nonphotochemical light-induce nucleation (NPLIN) of sulfathiazole crystals** **T.P 10**
Wenjing Li, Aziza Ikni, Philippe Scouflaire, Anne Spasojevic – de Biré
Laboratoire “Structures Propriétés et Modélisation des Solides”, UMR 8580 du CNRS, Ecole Centrale Paris, 92295 Châtenay-Malabry, France; Laboratoire EM2C, UPR 288 du CNRS, Ecole Centrale Paris, 92295 Châtenay-Malabry Cedex, France

16:00 **Atomic scale investigation of phase decomposition of Fe-22%Cr during thermal aging and subsequent heavy ion irradiation** **T.P 11**
A.A. Aleev, O.A. Korchuganova, S.V. Rogozhkin
SSC RF ITEP, NRNU MEPH; SSC RF ITEP, NRNU MEPH; SSC RF ITEP, NRNU MEPH

16:00 **Atomic Ordering in Liquid Aluminium Induced by Substrates with Misfits** **T.P 12**
H. Men, Z. Fan
The EPSRC Centre - LiME, BCAST, Brunel University, Uxbridge, UB8 3PH, UK

16:00 **Heterogeneous Nucleation mechanism of Mg on Zr-modified MgO surfaces** **T.P 13**
Y. Wang, G. Peng, Z. Fan
The EPSRC Centre-LiME, BCAST, Brunel University, Uxbridge UB8 3PH, UK

27 May 2014

Nucleation and growth in solution I : Lennart Bergström

09:00 **Pre-nucleation Clusters as Solute Precursors in Crystallization** **T.P 13**
Denis Gebauer
Dept. of Chemistry - Physical Chemistry, Zukunftskolleg, University of Konstanz, Konstanz, Germany

09:30 **A Novel View on Calcium Phosphate Nucleation** **T.P 14**
John K. Berg, Matthias Kellermeier, Stefan L.P. Wolf, Markus Drechsler, Denis Gebauer
Department of Chemistry, Physical Chemistry, University of Konstanz, Universitaetsstrasse 10, 78464 Konstanz, Germany; Department of Chemistry, Physical Chemistry, University of Konstanz, Universitaetsstrasse 10, 78464 Konstanz, Germany; Department of Chemistry, Physical Chemistry, University of Konstanz, Universitaetsstrasse 10, 78464 Konstanz, Germany; Institute of Macromolecular Chemistry II, University of Bayreuth, Universitaetsstrasse 30, 95440 Bayreuth, Germany; Department of Chemistry, Physical Chemistry, University of Konstanz, Universitaetsstrasse 10, 78464 Konstanz, Germany

09:45 **S-layer protein reassembly and its applications** **T.P 15**
Pum D., Toca-Herrera J.L., Sleytr U.B.
University of Natural Resources and Life Sciences, Dept. of Nanobiotechnology, Institute of Biophysics

10:00 **Coffee break**

Nucleation and growth in solution II : Helmut Cölfen

10:30 **In situ electron microscopy in liquids – New perspectives for studying biological and bioinspired material systems** **T.P 16**
Dr. Roland Kröger
Department of Physics, The University of York, Heslington, York YO10 5DD - United Kingdom Email: roland.kroger@york.ac.uk

11:00 **Nonequilibrium growth of microcrystalls and dendrite patterns in material sciences applications** **T.P 17**
Marina Voinova, Larissa Starukhina
Chalmers University of Technology, 41296, Goteborg, Sweden; Kharkov National University, Astronomical Institute, Kharkov, Ukraine

11:15 **Experimental demonstration of the carbamazepine crystallization from Non-Photochemical LASER Induced Nucleation in acetonitrile and methanol** **T.P 18**
Aziza Ikni, Bertrand Clair, Philippe Scouflaire, Stéphane Veesler, Jean-Michel Gillet, Nouha El Hassan, Françoise Dumas, Anne Spasojević-de Biré
CNRS, UMR 8580, Laboratory “Structures Propriétés et Modélisation des Solides” (SPMS)Grande Voie des Vignes, 92295 Châtenay-Malabry; CNRS, UPR 288, Laboratory “Energétique Moléculaire et Macroscopique, Combustion” (EM2C), Grande Voie des Vignes, 92290 Châatenay-Malabry; CNRS , UMR 7325, Laboratory “Centre Interdisciplinaire de Nanoscience de Marseille” (CINaM), Campus de Luminy, Case 913 13288 Marseille; CNRS, UMR 8076, Laboratory BIOCIS, Faculté de Pharmacie, Université Paris-Sud, 5, rue Jean-Baptiste Clément, 92296 Châtenay-Malabry, France

11:30 **Lunch break**

Crystallization from the gas phase : Markus Niederberger

13:30 **Non-Classical Crystallization in the Gas Phase Synthesis: Growth of Thin Films and Nanowires by Charged Nanoparticles** **T.P 19**
Nong-Moon Hwang
Department of Materials Science and Engineering Seoul National University

14:00 **Nanoscale Confined Crystallization of TiO2 Tubular Structure** **T.P 20**
Seonhee Lee, Myungjun Kim, Hyunchul Kim, Changdeuck Bae, Hyunjung Shin
Department of Energy Science, Sungkyunkwan University, Suwon, Korea

14:15 **Deposition of Zirconium Oxide on Graphene stimulated by Carbon Nanoparticles** **T.P 21**
Aile Tamm1, Veera Krasenko1, Vadim Boltruško1, Jun Lu2, Anna-Liisa Peikolainen3, Jekaterina Kozlova1, Lars Hultman2, Kaupo Kukli1,4, Vladimir Hiznjakov1, Jaan Aarik1
1 University of Tartu, Institute of Physics, Riia 142, 51014 Tartu, Estonia; 2 Linköping University, Department of Physics, Chemistry and Biology (IFM), Thin Film Physics Division, 58183 Linköping, Sweden; 3 University of Tartu, Institute of Technology, IMS Lab, Nooruse 1, 50411 Tartu, Estonia; 4 University of Helsinki, Department of Chemistry, P.O. Box 55, FI-00014 Univ. Helsinki, Finland.

14:30 **Break without Coffee**

Modelling of nucleation : Helmut Cölfen

14:45 **Epitaxial Nucleation and its Application to Grain Refinement** **T.P 22**
Z. Fan
BCAST, Brunel University, Uxbridge, Middlesex, UB8 3PH, UK

15:15 **Heterogeneous nucleation mechanism of Al by TiB2 Inoculation** **T.P 23**
Y. Wang, Z. Fan
The EPSRC Centre-LiME, BCAST, Brunel University, Uxbridge UB8 3PH, UK

15:30 **Molecular Dynamic Simulation of the Atomic Structure of Aluminium Solid-liquid Interfaces** **T.P 24**
H. Men, Z. Fan
The EPSRC Centre - LiME, BCAST, Brunel University, Uxbridge, UB8 3PH, UK

15:45 **Crystal nucleation and growth in a melt of short semiflexible chains** **T.P 25**
Bart Vorselaars, David Quigley
Department of Physics, University of Warwick, Coventry, West Midlands, United Kingdom

16:00 **Coffee break**

SYMPOSIUM U

Crystal growth related twins and point defects in semiconductors and dielectrics

Symposium Organizers:

Thierry Duffar, Université de Grenoble, Saint Martin d'Hères, France

Michael Neubert, Leibniz Institut für Kristallzüchtung, Berlin, Germany

Detlef Klimm, Leibniz Institut für Kristallzüchtung, Berlin, Germany

Michael Dudley, Stony Brook University, USA

Published in Crystal Research and Technology (Wiley)

Freiberger Compound Materials

FEE

IKZ Leibniz Leibniz-Gemeinschaft

InPACT

POINT DEFECTS 1 : Prof. P. Rudolph

09:00 **Extended concept of stoichiometry for oxide materials** — U.I 1
Satoshi Uda
Tohoku University

09:30 **Ab initio calculations of the self trapped hole in SrF2, as well as bulk and surface hydroxyl impurities in CaF2 and BaF2** — U.I 2
R. I. Eglitis(a), H. Shi(b) and R. Jia(c)
(a) Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia; (b) School of Science, Beijing Institute of Technology, 100081, Beijing, PR China; (c) Department of Chemie, Technische Universitat Munchen, Lichtenbergstrasse 4, 85747 Garching, Germany

09:45 **Defects in undoped pulse laser deposition grown ZnO** — U.I 3
Z. L. Wang*, C. C. Ling*, W. Anwand**, A. Wagner**
*Department of Physics, The University of Hong Kong, Pokfulam Road, Hong Kong, P. R. China; **Institute für Strahlenphysik, Helmholtz-Zentrum Dresden-Rossendorf, Postfach 510119, D-01314 Dresden, Germany

10:00 **Break**

POINT DEFECTS 2 : Dr. S. Eichler

10:30 **Stoichiometric deviations in II-VI semiconductors** — U.II 1
Peter Rudolph
Crystal Technology Consulting, Schönefeld, Germany

11:00 **Effect of Gas Phase Supersaturation on EL2 Incorporation in HVPE n-GaAs Layers** — U.II 2
K. L. Schulte, T. F. Kuech
Department of Chemical and Biological Engineering, University of Wisconsin-Madison, Madison, WI 53706

11:15 **UNIVERSAL APPROACH FOR NONSTOICHIOMETRY DETERMINATION IN BINARY CHEMICAL COMPOUNDS** — U.II 3
IgorAvetissov
D.Mendeleyev University of Chemical Technology of Russia

11:45 **The excellent high-temperature dielectric properties of N-doped 3C-SiC: First-principles calculations and experiments** — U.II 4
Yan-Kun Dou, Hai-Bo Jin, Jing-Bo Li
Beijing Institute of Technology

12:00 **Lunch**

POINT DEFECTS 3 : Prof. S. Uda

14:00 **Point defects in nitride semiconductors** — U.III 1
Chris G. Van de Walle
Materials Department, University of California, Santa Barbara, California, USA

14:30 **Surface processes involving gallium and indium and other atoms on GaN(0001) and InGaN(0001) surfaces in ammonia rich conditions - Density Functional Theory (DFT) study** — U.III 2
Pawel Kempisty, Pawel Strąk, Stanislaw Krukowski
Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland

14:45 **Point defects in GaAs: the industrial point of view** — U.III 3
S. Eichler, U. Kretzer, M. Jurisch
Freiberger Compound Materials GmbH

15:15 **Break**

16:00 **Point Defect Roundtable** — U.IV 1
All Symposium chairs

TWINNING 1 : Prof. K. Fujiwara

08:30 **Twinning** — U.V 1
K. Peter D. Lagerlof
Department of Materials Science and Engineering Case Western Reserve University Cleveland, OH 44106, USA

09:00 **The role of polarity in formation of twin defects at oxide-oxide and oxide-semiconductor heterostructures** — U.V 2
V.K Lazarov, K. McKeena, P.J. Hasnip , D. Gikls, G. Moeen Uddin and M. Weinert*
University of York, UK *University of Wisconsin-Milwaukee, USA

09:15 **Twins formation during GaAs epitaxial lateral overgrowth** — U.V 3
C. Renard1, N. Cherkashin2, T. Molière1,3, A. Jaffre3, G. Hallais1, L. Vincent1, J. Alvarez3, D. Mencaraglia3, D. Bouchier1
1) IEF, Univ Paris-Sud, CNRS, UMR 8622, 91405, Orsay, France; 2) CEMES, CNRS UPR 8011 and Université de Toulouse, 29 rue Jeanne Marvig, 31055 Toulouse, France; 3) LGEP-Supelec, UMR CNRS 8507, Université Pierre et Marie Curie, Université Paris-Sud, 11 rue Joliot Curie, Plateau de Moulon, 91192, Gif sur Yvette, France

09:30 **Twinning in GaAs nanowires** — U.V 4
T Walther, AB Krysa
Dept Electronic and Electrical Engineering, University of Sheffield, UK

09:45 **Lattice Kinetic Monte Carlo modeling of Solid Phase Epitaxial Regrowth for silicon and germanium materials** — U.V 5
Ignacio Martin-Bragado, José Luis Gomez-Selles and Benoit Sklenard
IMDEA Materials Institute, Getafe, Madrid Spain and CEA/LETI/STMicroelectronics, Grenoble, France.

10:00 **Break**

TWINNING 2 : Prof. P. Lagerlof

10:30 **Effect of twin boundary on melt growth behaviors of silicon** — U.VI 1
Kozo Fujiwara
Institute for Materials Research (IMR), Tohoku University

11:00 **FACETING AND GROOVING DURING DIRECTIONAL SOLIDIFICATION OF MULTI-CRYSTALLINE SILICON : IN SITU CHARACTERISATION AND MODELLING** — U.VI 2
Amina TANDJAOUI (a), Simona EPURE (a), Thierry DUFFAR (a), Nathalie MANGELINCK-NOEL (b), (c), Guillaume REINHART (b), (c), Bernard BILLIA (b), (c), Tamzin LAFFORD (d)
(a) SIMaP-EPM, Grenoble-INP-CNRS-UJF, BP 75, 38402 Saint Martin d'Héres cedex, France; (b)Aix-Marseille University and (c)CNRS, IM2NP, UMR CNRS 7334, campus Saint-Jérôme, Case 142, 13397 Marseille Cedex 20, France; (d) ESRF, 6, rue Jules Horowitz, BP220, 38043 Grenoble Cedex 9, France.

11:15 **Multiple twinned structure occurences on (111) growth facet during seeded directional solidification: characterization and mechanism** — U.VI 3
V.A. Oliveira1, B. Marie1, C. Cayron2, M. Marinova-Atanassova2, M.G. Tsoutsouva3, T.A. Lafford3, J. Baruchel3, D. Camel1
1CEA-INES, Savoie Technolac, Bourget du Lac, France. 2CEA/LITEN, 17 rue des Martyrs, Grenoble Cedex 9, 38054, France. 3European Synchrotron Radiation Facility, Grenoble, France.

11:30 **Twinning mechanisms monitored by X-ray synchrotron imaging during multi-crystalline silicon solidification** — U.VI 4
Nathalie Mangelinck-Noël, Amina Tandjaoui, Guillaume Reinhart, Bernard Billia, Tamzin Lafford, José Baruchel
Nathalie Mangelinck-Noël (a,b); Amina Tandjaoui (c); Guillaume Reinhart (a,b); Bernard Billia (a,b); Tamzin Lafford (d); José Baruchel (d) (a)Aix-Marseille Univ & (b) CNRS, IM2NP, UMR CNRS 7334, campus Saint-Jérôme, Case 142, 13397 Marseille Cedex 20, France. (c) SIMaP-EPM, Grenoble-INP-CNRS-UJF, BP 75, 38402 Saint Martin d'Hères cedex, France (d)ESRF-Polygone Scientifique Louis Néel, BP220, 38043 Grenoble Cedex, France

12:00 **X-ray topographic observation of twin generation in Czochralski-grown Si and SiGe** — U.VI 5
Ichiro Yonenaga, Kaihei Inoue
Institute for Materials Research, Tohoku University

12:15 **Low cristalline defect density in GaP/Si nanolayers** — U.VI 6
Y. Ping Wang1, J. Stodolna2, T. Nguyen Thanh1, A. Létoublon1, J. Kuyyalil1, N. Bertru1, A. Le Corre1, A. Ponchet2, C. Magen3, J. Even1, C. Cornet1, O.Durand1
1: Université Européenne de Bretagne, INSA, FOTON-OHM, UMR 6082, F-35708 Rennes, France 2: CEMES-CNRS, Université de Toulouse, 29 rue Jeanne Marvig, BP94347 Toulouse cedex 04, France 3: INA-Universidad de Zaragoza, Pedro Cerbuna, 12, 50009 Zaragoza, Spain

12:30 **Lunch**

14:00 **Twin Roundtable** — U.VII 1
All symposium chairmen

15:45 **Break**

POSTER SESSION : Prof. M. Dudley

16:00 **Oxygen nonstoichiometry and defect structure Analysis of Al-Doped SrFeO3-δ** — U.P 1
Fodil hanane(Etudiante de doctorat),omari mahmoud (professeur)
faculte de science et technologie universitie de biskra,faculte de science exacte universitie de biskra

16:00 **High Temperature Electrical Conductivity in Undoped ZnO** — U.P 2
K.Lott1, T.Nirk1, L.Türn1, J.Toomela1, A.Öpik1, E.Gorokhova2, A.Vishnjakov3
1 Department of Materials Science, Tallinn University of Technology, Ehitajate tee 5, 19086, Tallinn, Estonia; 2 S.I.Vavilov State Optical Institute, Babushkina street 36-1, 192171 St.Petersburg, Russia; 3 Department of Physical Chemistry, D.Mendelejev University of Chemical Technology of Russia, Miusskaya Sq.9, 125047 Moscow, Russia

16:00 **Ion-cut toward nitride materials** — U.P 3
U. Dadwal, R. Singh
Indian Institute of Technology Delhi

16:00 **ZnO piezoelectric thin films prepared by Pulsed Laser Deposition deposited onto glass and Si-polycrystalline substrates** — U.P 4
Adel Taabouche1, 2,*, Abderrahmane Bouabellou1, Fouad Kermiche1, Faouzi Hanini1, Yacine Bouachiba1, Chawki Benazzouz3, Azzeddine Grid2
1 Thin Films and Interfaces Laboratory, University of Constantine1, Constantine, Algeria 2 Welding and NDT Research Centre (CSC). BP 64 CHERAGA – ALGER-TA 3 Center CRNA, 2 Bd Franz Fanon, Algiers, Algeria

16:00 **High Performance a-IGZO Oxide TFTs with hybride gate dielectric layer** — U.P 5
Sang Chul Lim*1, Jae Bon Koo1, Chan Woo Park1, Soon-Won Jung1, Bock Soon Na1 , Sang Seok Lee1, Kyoung Ik Cho1, Jeong Seon Choi1 and Hye Yong Chu1
1Electronics and Telecommunications Research Institute (ETRI)

16:00 **Thermal stability of hydrogen in ZnO and formation of hidden hydrogen ; role of point defects** — U.P 6
M. A. Lahmer, K. Guergouri
Departement of physics, university of Boumerdes, Boumerdes 35000. Algeria
Laboratoire de physique-chimie des semiconducteurs, université Mentouri, Constantine. algerie

16:00 **Defects in CdSb, ZnSb and In4Se3 crystals which are used as substrates for epitaxial structures** — U.P 7
Savchuk A.I., Strebezhev V.V., Gritsyuk B.M., Strebezhev V.M., Yuriychuk I.M.
Chernivtsi National University, Institute of Physical-Technical and Computer Science

16:00 **Growth of dilute bismides GaAsBi/GaAs nanowires by metalorganic vapor phase epitaxy** — U.P 8
Y. Soda*, H. Fitouri, C. Bilel, A. Rebey, and B. El Jani
University of Monastir, Faculty of Sciences Unité de Recherche sur les Hétéro-Epitaxies et Applications (URHEA), 5019 Monastir, Tunisia E-mail: * benzaied.yethreb@yahoo.fr

16:00 **Nonstoichiometry of AIIBVI semiconductors** — U.P 9
Elena Mozhevitina, Andrew Khomyakov, Igor Avetissov.
D.Mendeleyev University of Chemical Technology of Russia

16:00 **Influence of Self-assembled Monolayer on Indium Zinc Oxide Semiconductor Thin-film Transistors** — U.P 10
Yong Suk Yang, In-Kyu You, Sung-Hoon Hong, Ju-hyeon Park, Ho-Gyeong Yun, Young Hun Kang*, Changjin Lee*, and Song Yun Cho*
Electronics and Telecommunications Research Institute (ETRI), 138 Gajeong, Yuseong, Daejeon 305-700, Korea *Korea Research Institute of Chemical Technology (KRICT), 141 Gajeong, Yuseong, Daejeon 305-600, Korea

16:00 **Study of Oxygen Concentration and Interface Optimization in Czochralski Process for Production of Low-Cost, High-Quality Ingot** — U.P 11
YuJin Jung, Jae Hak Jung*
Yeungnam University

16:00 **First-principles study of electronic structure of Ce3+, Pr3+ and Nd3+ centers in alkaline-earth fluorides including spin-orbit and scalar relativistic effects.** — U.P 12
N.V.Popov(1,2), A.S.Mysovsky(1,2), E.A.Radzhabov(1)
(1) A.P. Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia, (2) Irkutsk State Technical University, Irkutsk, Russia;

16:00 **Lead incorporation mechanism in LiF crystals** — U.P 13
P. Pochet,1 F. D'Acapito,2 F. Somma,3 P. Aloe,3 R. M. Montereali,4 M. A. Vincenti,4 and S. Polosan,5
1 Laboratoire de Simulation Atomistique (L_Sim), SP2M, CEA/UJF-Grenoble 1, INAC, Grenoble F-38054, France 2 CNR-IOM-OGG c/o ESRF, GILDA-CRG, BP 220, 6 Rue Jules Horowitz, F-38043 Grenoble, France 3 Department of Physics, University of Roma Tre, V. della Vasca Navale 84, I-00146 Roma, Italy 4 ENEA, Photonics Micro- and Nano-Structures Laboratory, UTAPRAD-MNF, C.R. Frascati, V. E. Fermi 45, I-00044 Frascati (Rome), Italy 5 National Institute of Materials Physics, Bucharest-Magurele 077125, Romania

16:00 **Experimental evidence of the defect effect in Si/SiO2 multilayer structures** — U.P 14
L. Bouaziz1,2, D. Gamra1, M. Lejeune2, A. Zeinert2, K. Zellama2, and H. Bouchriha1
1 Laboratoire de Materiaux Avances et Phenomenes Quantiques, Faculte des Sciences de Tunis, Universite de Tunis El Manar, Campus universitaire, 1068 Tunis, Tunisie. 2 Laboratoire de Physique de la Matiere Condensee, Universite de Picardie Jules Verne, UFR des Sciences, 33 rue Saint-Leu, 80039 Amiens Cedex, France.

16:00 **Dewetting and antimonide crystals properties: On the relation between dislocation density and conduction mechanism** — U.P 15
A. A. Ebnalwaled 1 , T. Duffar 2, L. Sylla 3
1Electronics & Nano Devices Lab, Physics Department, Facultyof Science, South Valley University, Qena 83523, Egypt 2 SIMaP-EPM, Saint Martin d'Hères, 38402 France 3SolarworldInnovations GmbH, Berthelsdorfer Str. 111A, 09599 Freiberg, Germany

16:00 **Measurement of Bi segregation in Ga(As,Bi) thin layers by scanning transmission electron microscopy** — U.P 16
T Walther, F Bastiman
Kroto Centre for High Resolution Imaging and Analysis, Dept Electronic and Electrical Engineering, University of Sheffield, UK; Paul Drude Institute, Berlin, Germany

16:00 **Radiation damage analysis of the intrinsic defects in CuInSe2 single crystals** — U.P 17
F.Z. Satour1*, A. Merabet2, A. Zegadi1
1 LCCNS, Département d'Electronique, Faculté de Technologie, 2 LPMMM, IOMP Université Ferhat Abbas – Sétif 1, 19000 Sétif, ALGERIA

16:00 **A STUDY ON THE EFFECT OF OXYGEN IMPLANTS IN CUINSE2 BY PHOTOACOUSTIC SPECTROSCOPY** **U.P 18**
Ameur Zegadi*, Mustapha Rouha, Fatima Zohra Satour
LCCNS, Département d'Electronique, Faculté de Technologie, Université Ferhat Abbas - Sétif 1, Algeria.

16:00 **The domain boundaries effect at some macroscopic measurements in ferroelectric single crystals** **U.P 19**
E.Yakushkin
Institute of Crystallography RAS, Moscow, 119333, Russia

16:00 **Performance and Microstructure Analysis of Vacuum Annealed ZnO Thin-Film Transistors** **U.P 20**
XIA Yu-Qian, SUN Lei, XU Hao, ZHANG Yi-Bo, WANG Yi and ZHANG Sheng-Dong
Institute of Microelectronics, Peking University

SYMPOSIUM V

Effect of natural and forced convection in materials crystallization

Symposium Organizers:

Kader Zaidat , SIMAP laboratory, St Martin d'Heres, France

Yves Delannoy , SIMAP laboratory, St Martin d'Heres, France

Yves Fautrelle, Grenoble Institute of Technology, St Martin d'Heres, France

Elias Vlieg, Radboud University Nijmegen, The Netherlands

28 May 2014

08:30 **Opening of the symposium V** — **V.I 1**
Kader ZAIDAT
Laboratoire SiMaP/Grenoble-inp

In situ observation : K. Zaidat

08:40 **In situ observation of freckle formation in Ga - In alloys under the influence of melt convection** — **V.I 1**
N. Shevchenko, G. Gerbeth, S. Eckert
Helmholtz-Zentrum Dresden-Rossendorf, P.O. Box 510119, 01314 Dresden, Germany

09:10 **In-situ X-ray synchrotron radiography study of the effect of forced convection on the development of a static dendritic array in an Al-15Cu alloy.** — **V.I 2**
E. Liotti (1), A. Lui (1), S. Kumar (1), R. Vincent (1), Z. Guo (2), T. Connolley (3), P.S. Grant (1).
(1) University of Oxford, Department of Materials, UK; (2) Department of Mechanical Engineering, Tsinghua University, China; (3) Diamond Light Source, UK.

09:25 **In-situ and real-time analysis of effects induced by a permanent magnetic field during directional solidification of Al-4wt%Cu** — **V.I 3**
G. Salloum-Abou-Jaoude (1,2), H. Nguyen-Thi (1,2), J. Wang (3,4), G. Reinhart (1,2), N. Mangelinck (1,2), Z.M. Ren (3), Y. Fautrelle (4), T. Lafford (5)
(1) Aix- Marseille University & (2) CNRS, IM2NP, UMR 7334, Campus Saint-Jerome, Case 142, 13397 Marseille Cedex 20, France (3) Dept. of Material Science and Eng., Shanghai University, Shanghai 200072, P. R. China (4) SIMAP/EPM – Madylam/CNRS, ENSHMG BP 75, 38402 St. Martin d'Hères Cedex, France (5) ESRF, 6 rue Jules Horowitz, BP 220, 38043 Grenoble Cedex 9, France

09:40 **Influence of convection on Fe bearing intermetallic formation in model Al alloys: A real-time synchrotron X-ray radiography study** — **V.I 4**
S. Kumar1 , E. Liotti1, A. Lui1, R. Vincent1, T. Connolley2, K.A.Q. O'Reilly1, P.S. Grant1
1 Department of Materials, University of Oxford, Parks Road, Oxford, OX1 3PH, UK and The EPSRC Centre for Innovative Manufacturing in Liquid Metal Engineering, 2 Diamond Light Source, Harwell Science and Innovation Campus, Didcot, OX11 0DE, United Kingdom

09:55 **Flow-induced travelling waves on solidfication interfaces.** — **V.I 5**
A. Pocheau, T.Jiang, M. Georgelin
Aix Marseille University, IRPHE

10:10 **Coffee break**

Modelisation of Dendritic Growth : V. Botton

10:30 **A Mesoscopic model for solidification of systems of large number of columnar dendrites** — **V.II 1**
A. Kharicha, M.Stefan-kharicha, M. Wu, A. Ludwig
Lehrstuhl für Simulation und Modellierung metallurgischer Prozesse Department of Metallurgy University of Leoben

11:00 **FREE SURFACE STUDY IN A SILICON MELT WITH ROTATING CRUCIBLE** — **V.II 2**
Faiza Mokhtari 1,3, Abdelkrim Merah 2,3 & Ahcene Bouabdallah 3
1Faculté des Sciences, Université Mouloud Mammeri de Tizi Ouzou, Algeria 2Faculté des Sciences de l'Ingénieur, Université M'Hamed Bougara de Boumerdes, Algeria 3LTSE Laboratory, University of Science and Technology. Algiers, Algeria

11:15 **Comparing the Effects of Thermoelectric Magnetohydrodynamics and Forced Convection in Solidification** — **V.II 3**
A. Kao, K. Pericleous, P. D. Lee
Centre of Numerical Modelling and Process Analysis, University of Greenwich; Centre of Numerical Modelling and Process Analysis, University of Greenwich; The Manchester X-Ray Imaging Facility, School of Materials, The University of Manchester

11:30 **A 2D½ model of binary alloy solidification experiment in the AFRODITE setup.** — **V.II 4**
R. Boussaa, V. Botton, K. Zaidat, D. Henry, H. Ben Hadid and Y. Fautrelle
LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL; LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL; CNRS-SIMAP-EPM PHELMA;LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL; LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL; CNRS-SIMAP-EPM PHELMA

11:45 **Analysis of macrosegregation formation and columnar-to-equiaxed transition during solidification of Al- 4 wt. %Cu ingot using a 5-phase model** — **V.II 5**
M. Ahmadein1,2,a, M. Wu1,3,b, and A. Ludwig1,d
1 Chair for Modeling and Simulation of Metallurgical Processes, University of Leoben, Austria 2 Department of Production Engineering and Mechanical, Tanta University, Egypt 3 Christian-Doppler Laboratory for Advanced Process Simulation of Solidification & Melting, University of Leoben, Austria

12:00 **Lunch**

Solidification under external field : K. Zaidat

14:00 **Enhancement of GaAs VGF process by using traveling magnetic fields** — **V.III 1**
Christiane Frank-Rotsch, Natasha Dropka, Alexander Glacki
Leibniz Institute for Crystal Growth Max-Born-Strasse 2 12489 Berlin Germany

14:30 **Solidification Possibilities under Different Types of Magnetic Field at the University of Miskolc in Hungary** — **V.III 2**
András Roósz, Arnold Rónaföldi, Jenő Kovács
MTA-ME Materials Science Research Group H-3515 Miskolc-Egyetemváros, Hungary

14:45 **The effect of forced melt flow induced by rotating magnetic field on the structure of Al-Al3Ni eutectic** — **V.III 3**
Zsolt Veres, János Geiger, Dóra Daniella Dudás, András Roósz
University of Miskolc, Institute of Physical Metallurgy, Metalforming and Nanotechnology, Miskolc-Egyetemváros, Hungary; Hungarian Academy of Science – University of Miskolc, Materials Science Research Group, Hungary

15:00 **Liquid Metal Engineering and Its Implications to Solidification Science and Technologies** — **V.III 4**
Zhongyun FAN
The EPSRC Centre-LiME, BCAST, Brunel University, Uxbridge, UB8 3PH, UK

15:15 **Wetting/De-wetting of Ag film by strain engineering** — **V.III 5**
Yang Hee Song, Jong-Lam Lee
Department of Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea

15:30 **Coffee break**

16:00 **PLENARY SESSION**

Modelisation and silicon : Y. Delannoy

08:30 **Numerical Investigation of Carbon and Silicon Carbide Contamination in the Melting Process of a CZ-Si Crystal Growth** — V.IV 1
Xin Liu , Bing Gao, Satoshi Nakano, Koichi Kakimoto
Research Institute for Applied Mechanics (RIAM), Kyushu-University

09:00 **Transient numerical simulations of solute segregation in a lid driven cavity** — V.IV 2
Mickael Albaric, Marc Chatelain, Jeauffrey Baquerre, David Pelletier, Claire Audoin
CEA, LITEN, Materials and Photovoltaic Cells

09:15 **Multi crystalline silicon solidification under controlled forced convection** — V.IV 3
M. Cablea1, K. Zaidat1, A. Nouri2, A. Gagnoud1 and Y. Delannoy1
1. SIMAP/EPM, 1340 rue de la piscine, F38402, Saint Martin d'Heres Cedex, France 2. Clean Power Innovation, 2901 Tasman Dr., Santa Clara, CA 9505, USA

09:30 **Silicon sample for PV application grown under reduced melt convection** — V.IV 4
M. Gonik^1, A. Croel ^ 2 , A. Le Donne^3 , M.Acciarri^3 and S. Binetti^3
1 Centre for Material Researches (PHOTON), Alexandrov (Russian); 2 Institute for Geosciences, Albert-Ludwigs-University of Freiburg , Albertstr. 23b D- 79104 Freiburg (Germany) ; 3 Milano-Bicocca Solar Energy Research Center (MIB-SOLAR), Dept. of Materials Science, University of Milano-Bicocca, via Cozzi 55, Milano (Italy)

09:45 **Simulation of the influence of gas flow on melt convection and phase boundaries in FZ silicon single crystal growth** — V.IV 5
A. Sabanskis, J. Virbulis
University of Latvia, Faculty of Physics and Mathematics, Zellu St 8, LV-1002 Riga, Latvia

10:00 **Coffee break**

Solidification under microgravity : Y. Fautrelle

10:30 **Formation of intermetallic phases in AlSi7Fe1 alloy processed under microgravity and forced fluid flow conditions** — V.V 1
S. Steinbach, L. Ratke, G. Zimmermann
Institut für Materialphysik im Weltraum, Deutsches Zentrum für Luft- und Raumfahrt (DLR), 51170 Köln, Germany; ACCESS e.V., 52072 Aachen, Germany

11:00 **Modeling of crystallization of CdTe and related compounds from Te solution under terrestrial and microgravity conditions** — V.V 2
Carmen Stelian, Thierry Duffar
SIMAP-EPM, 1340 Rue de la Piscine, BP 75, F-38402 Saint Martin d'Hères, France

11:15 **Influence of Convection on the 3D-Alloy Solidification in DECLIC-DSI: Comparison 1g/μg Experiments** — V.V 3
F.L. Mota1, L. Chen1, N. Bergeon1, D. Tourret2, J.-M. Debierre1, R. Guérin1, B. Billia1, A. Karma2, and R. Trivedi3
1IM2NP, CNRS, Marseille, France 2Physics Department, Northeastern University, Boston, USA 3Department of Materials Science & Engineering, Iowa State University, USA

11:30 **SiGe crystal growth aboard the International Space Station** — V.V 4
Kyoichi Kinoshita1, Yasutomo Arai1, Takao Tsukada2, Yuko Inatomi1, Hiroaki Miyata3, Ryota Tanaka3
1) Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (JAXA); 2) Department of Chemical Engineering, Tohoku University; 3) Advance Engineering Services Co., Ltd.,

11:45 **Dendrite interaction mechanism in columnar and equiaxed growth in the transparent organic neopentylglycol-(d)camphor alloy** — V.V 5
L. Sturz, G. Zimmermann
Access e.V, INtzestr. 5, 52072 Aachen, Germany

12:00 **Lunch**

Solidification under external field : A. Kharicha

14:00 **Acoustic streaming: a new tool for crystal-growth ?** — V.VI 1
V. Botton, B. Moudjed, D. Henry, H. Ben Hadid and J.P. Garandet
LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL;LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL;LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL;LMFA CNRS UMR 5509, Université de Lyon, ECL, INSA de Lyon, UCBL; CEA,DEN/DANS/DM2S/STMF/LIEFT

14:30 **Dendritic Fragmentation Criterion for Solidification in Presence of Ultrasonic Stirring** — V.VI 2
Ankit Mahato, Parikshit Jain, Arvind Kumar
Indian Institute of Technology, Kanpur, India

14:45 **Mechanisms of Solidification in the Melt Conditioned Direct Chill (MC-DC) Casting Technology** — V.VI 3
Jayesh B Patel, Xia Mingxu, Zhongyun Fan
The EPSRC Centre, LiME, BCAST, Brunel University, Uxbridge, Middlesex, UB8 3PH, United Kingdom

15:00 **Melt structure control in crystal growth process** — V.VI 4
Andrey Sadovskiy, Ekaterina Sukhanova, Stanislav Belov, Igor Avetissov
D. Mendeleyev University of Chemical Technology of Russia, Armoled Ltd.

15:15 **Novel electromagnetic stirring technique in a direct-solidification configuration** — V.VI 5
Radu Negrila, Alexandra Popescu, Daniel Vizman
Faculty of Physics, West University of Timisoara, Bd. V. Parvan 4, 300223-Timisoara, Romania

15:30 **Coffee break**

Session Posters : K. Zaidat and Y. Delannoy

16:00 **Forced convection effects on dendritic growth and freckle formation** — VP1 1
N. Shevchenko, O. Roshchupkina, O. Sokolova*, S. Eckert
Helmholtz-Zentrum Dresden-Rossendorf, P.O. Box 510119, 01314 Dresden, Germany; *Perm National Research Polytechnic University, Perm, Russia

16:00 **Comparison of Microstructures of Al-7Si-1Fe Alloy solidified in Rotating and in Travelling Magnetic Field by using the same Solidification Parameters** — VP1 2
Jenő Kovács, Arnold Rónaföldi, András Roósz
MTA-ME Materials Science Research Group

16:00 **Convective mass transfer and crystallization of the surface layers in the "coating/substrate" system subjected to compression plasma flows impact** — VP1 3
V.I. Shymanski1, N.N. Cherenda1, V.V. Uglov1, V.M. Astashynski2
1Belarusian State University, Minsk, Belarus; 2Heat and mass transfer Institute of National Academy of Science of Belarus, Minsk, Belarus

16:00 **In-situ synchrotron X-ray radiography study of the effect of induced convection on nucleation and equiaxed growth in a grain refined Al-15Cu alloy.** — VP1 4
E. Liotti (1), A. Lui (1), S. Kumar (1), R. Vincent (1), K.A.Q. O'Reilly (1), T. Connolley (2), P.S. Grant (1).
(1) University of Oxford, Department of Materials, UK; (2) Diamond Light Source, UK.

16:00 **Impact of a travelling magnetic field on solidification process in a benchmark experiment** — VP1 5
Lakhdar HACHANI1,2 , Kader ZAIDAT1, Yves FAUTRELLE1
1 CNRS/SIMAP/EPM, ENSHMG BP75 38402 St Martin d'Hères Cedex, France
2Laboratoire de mécanique, université de Laghouat, Algérie

16:00 **Influence of the Rayleigh number on the Columnar to equiaxed transition in a cast cell** — VP1 6
A.Kharicha, M.Stefan-Kharicha, M.Wu, A. Ludwig
Lehrstuhl für Simulation und Modellierung metallurgischer Prozesse Department of Metallurgy University of Leoben

16:00 **The effect of the melt flow induced by RMF on microstructure formation of directionally solidified Sn–1.6Cd peritectic alloys** **VP1 7**
M. Svéda, A. Sycheva, J. Kovács, A. Rónaföldi, A. Roósz
MTA-ME Materials Science Research Group

16:00 **Simulation of the solidification of Al-4Cu alloy under rotating magnetic field using Ansys Fluent** **VP1 8**
Csaba Nagy, András Roósz, Yves Du Terrail, Yves Fautrelle, Olga Budenkova
MTA-ME Materials Science Research Group; MTA-ME Materials Science Research Group; SIMAP/EPM Laboratory; SIMAP/EPM Laboratory; SIMAP/EPM Laboratory;

16:00 **Hydrodynamic and magnetohydrodynamic instabilities in silicon crystal growth** **VP1 9**
A. Merah1,2, F. Mokhtari2,3, A. Bouabdallah2
1 M'hammed Bougara University, Boumerdes, Algeria 2 LTSE Laboratory, University of Science and Technology. BP 32 Elalia, Babezzouar, Algiers, Algeria 3 Université Mouloud Mammeri de Tizi Ouzou, Algeria

SYMPOSIUM W

Crystals for energy conversion and storage

Symposium Organizers:

Jochen Friedrich, Fraunhofer IISB, Erlangen, Germany

Koichi Kakimoto, RIAM, Kyushu University, Kasuga, Japan

Jeffrey Derby, University of Minnesota, Minneapolis, USA

WBG - Nitride Crystals : J. Friedrich

16:15 **GaN bulk crystals – status and challenges** W.1 1
Izabella Grzegory
Institute of High Pressure Physics PAS Unipress Warsaw, Poland

16:45 **Chemistry of Ammonothermal Nitride Crystal Growth** W.1 2
Shiyu Zhang, Theresia M. M. Richter, Jan Hertrampf, Nicolas S. U. Alt, Eberhard Schlücker, Rainer Niewa
Shiyu Zhang; Theresia M. M. Richter; Jan Hertrampf; Rainer Niewa, Universität Stuttgart, Institut für Anorganische Chemie, Pfaffenwaldring 55, 70569 Stuttgart, Germany Nicolas S. U. Alt; Eberhard Schlücker, Friedrich-Alexander-Universität Erlangen-Nürnberg, Lehrstuhl für Prozessmaschinen und Anlagentechnik, Cauerstr. 4, 91058 Erlangen, Germany

17:15 **Charge transfer contribution to adsorption energy– consequences to crystal growth of semiconductors from the vapor** W.1 3
Stanislaw Krukowski, Pawel Kempisty, Pawel Strąk, Konrad Sakowski1
Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland and Interdisciplinary Centre for Materials Modeling, Warsaw University, Pawińskiego 5a, 02-106 Warsaw, Poland

17:30 **Multiphonon Processes in cubic and hexagonal GaN and ZnO** W.1 4
H.W. Kunert 1, A.G. J. Machatine 1, M. Govender 1,2, B. Mwakikunga 2
1 Department of Physics, University of Pretoria, South Africa, 2 National Centre for Nano-structured Materials, CSIR, P. O. Box 395, Pretoria, 0001, South Africa

17:45 **Break**

Energy generation, conversion & storage : K. Kakimoto

18:00 **Development of single crystalline magnetoelastic materials for energy conversion applications** W.2 1
Thomas A. Lograsso
Division of Materials Science and Engineering, Ames Laboratory, Ames IA 50011

18:30 **Investigation of High Performance Relaxor-based Ferroelectric Single Crystals and Their Applications in Infrared Detectors** W.2 2
Long Li, Haosu Luo, Xiangyong Zhao, Xiaobing Li, Qing Xu, Linrong Yang, Wenning Di
Key Laboratory of Inorganic Functional Materials and Devices, Shanghai Institute of Ceramics, Chinese Academy of Sciences

18:45 **Conformational studies of poly(vinylidene fluoride) (PVDF) – a density functional theory investigation of the formation of the piezoelectric β-phase PVDF** W.2 3
Martin Bohlén, Kim Bolton
University of Borås – School of Engineering, Allégatan 1, 501 90 Borås, Sweden

19:00 **Pyroelectricity in the model perovskite SrTiO3?** W.2 4
Jachalke S. (1), Mehner E. (1), Hanzig J. (1), Hanzig F. (1), Zschornak M. (1), Stoecker H. (1), Meyer D.C. (1)
(1) TU Bergakademie Freiberg, Leipziger Str. 23, 09596 Freiberg

WBG - Hot Topics in Epitaxy : I. Grzegory

08:15 **Growth of AlN bulk crystals for AlGaN-based devices (UV LEDs, lasers, sensors, and power electronics)** W.3 1
Matthias Bickermann, Andrea Dittmar, Carsten Hartmann, Klaus Irmscher, Sandro Kollowa, Albert Kwasniewski, Frank Langhans, Tom Neugut, Jürgen Wollweber, Arne Knauer, Markus Weyers, Christoph Reich, Frank Mehnke, Christian Kuhn, Michael Kneissl
Leibniz-Institute for Crystal Growth, Max-Born-Strasse 2, 12489 Berlin, Germany; Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Str. 4 12489 Berlin, Germany; Institute of Solid State Physics, Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany

08:45 **Growth of large size diamond single crystals by plasma assisted chemical vapour deposition** W.3 2
Alexandre Tallaire
LSPM-CNRS, Université Paris 13

09:15 **GaN on Si – a hype or the bright future** W.3 3
Marianne Germain
EpiGaN nv, Kempische Steenweg 293, 3500 Hasselt, Belgium

09:45 **High temperature epitaxial growth of graphene and SiC** W.3 4
Mikael Syväjärvi
Linköping University and Graphensic AB, Sweden

10:15 **Coffee Break**

WBG - SiC : M. Syväjärvi

10:45 **Development of SiC crystal growth in the past, present and future** W.4 1
Shin-ichi NISHIZAWA
National Institute of Advanced Industrial Science and Technology

11:15 **Growth of SiC bulk crystals for application in power electronic devices** W.4 2
Peter J. Wellmann
Materials Department 6, University of Erlangen-Nürnberg, Martensstr. 7, D-91058 Erlangen, Germany

11:45 **Three-dimensional modeling of basal plane dislocations in 4H-SiC** W.4 3
Bing Gao, Satoshi Nakano, Koichi Kakimoto
Research Institute for Applied Mechanics, Kyushu University, Japan

12:00 **Optimization of power control in reduction of basal plane dislocations during PVT growth of 4H-SiC single crystal** W.4 4
Bing Gao, Satoshi Nakano, Koichi Kakimoto
Research Institute for Applied Mechanics, Kyushu University, Japan

12:15 **Deposition of high quality 3C-SiC/Si heteroepitaxial layers at 1200°C** W.4 5
Martin Wilhelm, Marcel Rieth, Peter Wellmann
Department of Materials Science, Chair of Materials for Electronics and Energy Technology, Friedrich-Alexander-University Erlangen-Nürnberg, Martensstr. 7, 91058 Erlangen, Germany

12:30 **Lunch Break**

WBG - High Melting Oxides : A. Tailaire

14:00 **Crystal Growth of Sapphire for Substrates for High-Brightness, Light Emitting Diodes** W.5 1
Frank J. Bruni
P.O. Box 2413, Santa Rosa, California 95403 USA

14:30 **Crystal growth of Ga2O3 for power device and LED applications** **W.5 2**
Akito Kuramata*, Takekazu Masui#, Kimiyoshi Koshi#, Shinya Watanabe*, Yu Yamaoka#, Yoshikatsu Morishima*, Kazuyuki Iizuka*, Yoshihiro Yamashita*, Shinkuro Sato*, Kohei Sasaki*, Masataka Higashiwaki+ and Shigenobu Yamakoshi*
*Tamura Corporation, Sayama, Saitama 350–1328, Japan, #Koha Co. Ltd., Nerima, Tokyo 176–0022, Japan, +National Institute of Information and Communications Technology, Koganei, Tokyo 184–8795, Japan

15:00 **High-quality ZnO nanorods obtained by the ultra fast hydro-thermal method for solar cells & photoresistors applications** **W.5 3**
B. S. Witkowski 1, L. Wachnicki 1, S. Gieraltowska 1, R. Pietruszka 1, G. Luka 1, E. Zielony 2, P. Bieganski 2, E. Popko 2, M. Godlewski 1,3
1 Polish Academy of Sciences, Institute of Physics, Warsaw, Poland; 2 Institute of Physics, Wroclaw University of Technology, Wroclaw, Poland; 3 Cardinal Stefan Wyszynski University, College of Science, Department of Mathematics and Natural Sciences, Warsaw, Poland

15:15 **Visible-blind wavelength-selective monolithic multichannel ultraviolet photodiodes based on (Mg,Zn)O thin films** **W.5 4**
Zhipeng Zhang, Holger von Wenckstern, Jörg Lenzner, Michael Lorenz, and Marius Grundmann
Institut für Experimentelle Physik II, Fakultät für Physik und Geowissenschaften, Universität Leipzig, Linnéstraße 5, 04103 Leipzig, Germany

15:30 **Coffee Break**

16:00 **PLENARY SESSION**

29 May 2014

Silicon - Multicrystalline for PV : A. Jouini

08:15 **The growth of high efficiency multicrystalline silicon wafers via directional solidification for photovoltaic material** **W.6 1**
Bing Dai
GCL Energy Holdings Ltd., 19F, SIFC, Times Square, HuaChi Street, Suzhou Industrial Park, China

08:45 **Recent Development of High-Performance Multi-crystalline Silicon for Photovoltaic Industry** **W.6 2**
C.W. Lan1*, Y. M. Yang2, A. Yu2, B. Hsu2, W.C. Hsu2, A. Yang3
1 Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan 2 Sino-American Silicon Productions Inc., Hsin-chu, Taiwan 3 Solartech Energy Inc., Hsin-chu, Taiwan

09:15 **Understanding the performance of fine grained vs. conventional mc-Si, based on grain orientation and –boundary type distribution** **W.6 3**
T. Lehmann (1), E. Meissner (2), C. Reimann (2), J. Friedrich (1,2)
(1) Fraunhofer THM, Am St.-Niclas-Schacht 13, 09599 Freiberg, Germany; (2) Department Crystal Growth, Fraunhofer IISB, Schottkystrasse 10, 91058 Erlangen, Germany

09:30 **Defect Analysis for Impurity Control in Multicrystalline n-type Silicon Growth** **W.6 4**
P. Krenckel, F.Schindler, B. Karches, C. Stieghorst, N. Wiehl, G. Hampel, C. Plonka-Spehr, B. Ponsard, H. Gerstenberg, P. Kudejova, S. Riepe
Fraunhofer Institute for Solar Energy Systems, Heidenhofstraße 2, 79110 Freiburg, Germany; Fraunhofer Institute for Solar Energy Systems, Heidenhofstraße 2, 79110 Freiburg, Germany; Johannes Gutenberg-University Mainz, Fritz-Strassmann-Weg 2, 55128 Mainz, Germany; Johannes Gutenberg-University Mainz, Fritz-Strassmann-Weg 2, 55128 Mainz, Germany; Johannes Gutenberg-University Mainz, Fritz-Strassmann-Weg 2, 55128 Mainz, Germany; Johannes Gutenberg-University Mainz, Fritz-Strassmann-Weg 2, 55128 Mainz, Germany; Johannes Gutenberg-University Mainz, Fritz-Strassmann-Weg 2, 55128 Mainz, Germany; SCK.CEN - BR2 Reactor, Boeretang 200, B-2400 MOL, Belgium; Technische Universitaet Muenchen, Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II), Lichtenbergstr. 1, 85747 Garching; Technische Universitaet Muenchen, Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II), Lichtenbergstr. 1, 85747 Garching; Fraunhofer Institute for Solar Energy Systems, Heidenhofstraße 2, 79110 Freiburg, Germany

09:45 **Modeling of Particle Engulfment during the Growth of Multicrystalline Silicon for Solar Cells** **W.6 5**
Yutao Tao, Andrew Yeckel, Jeffrey J. Daerby
Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN 55455, U.S.A.

10:00 **Dislocation developments in a multicrystalline silicon ingot solidified under the influence of travelling magnetic fields** **W.6 6**
Torunn Ervik, Uta Juda, Juliane Walter, Frank M. Kie?ling
Torunn Ervik; Uta Juda; Frank M. Kiessling, Leibniz Institute for Crystal Growth, Max-Born-Str. 2, 12489 Berlin, Germany Juliane Walter, SolarWorld Innovations GmbH, Berthelsdorfer Str. 111A, 09599 Freiberg, Germany

10:15 **Coffee Break**

Silicon - Novel Crystal growth Techniques : C.H. Lan

10:45 **Horizontal ribbon growth via the Floating Silicon Method: A kerfless method for producing single-crystal photovoltaic silicon** **W.7 1**
Peter Kellerman
Applied Materials, Varian Semiconductor Equipment

11:15 **Analysis of the Horizontal Ribbon Growth Process for Solar Silicon** **W.7 2**
Parthiv Daggolu, Andrew Yeckel, and Jefrey J. Derby
Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN 55455, U.S.A.

11:30 **Fast growth of thin silicon ribbons by the RST method** **W.7 3**
Bertrand Heilbronn, Emilie Jolivet, Fabrice De Moro, Romain Varrot, Benjamin Chau, Elsa Tupin
Solarforce, France

12:00 **New Crystal Growth Techniques for Novel Group IV Materials and the Investigation of their Structure-property Relationships** **W.7 4**
George S. Nolas
Department of Physics, University of South Florida, Tampa, FL, USA

12:15 **Adaptation of the Kyropoulos process to grow Silicon crystals for photovoltaic applications** **W.7 5**
L. Lhomond1, A. Nouri1, G. Chichignoud1, Y. Delannoy1, F. Lissalde2, M. Albaric3, A. Jouini3 and K. Zaïdat1
1SIMAP EPM CNRS, 1340 rue de la piscine, 38402 Saint-Martin-d'Hères Cedex, France ; 2Cyberstar, Parc Sud Galaxie 1 rue des Tropiques, BP 344, 38435 Echirolles Cedex, France ; 3CEA, 50 avenue du Lac Léman, 73375 Le Bourget-du-Lac, France

12:30 **Lunch Break**

Silicon - Singlecrystalline for Powerelectronics : J.J. Derby

14:00 **Origins of structure loss in heavily doped Cz silicon crystals** **W.8 1**
Ichiro Yonenaga
Institute for Materials Research, Tohoku University

14:30 **Point defects in heavily As-doped Czochralski Silicon** **W.8 2**
L. Stockmeier (1); C. Bergmann (2); M. Zschorsch (1); L. Lehmann (3); J. Friedrich (1)
(1) Fraunhofer Technologiezentrum Halbleitermaterialien, Am St.-Niclas-Schacht 13, 09599 Freiberg; (2) Lehrstuhl für Kristallografie und Strukturphysik, Staudtstr. 3, 91058 Erlangen; (3) Siltronic AG, Berthelsdorfer Straße 113, 09599 Freiberg

14:45 **Design and Numerical Optimization of a Novel CZ Furnace with Double Heaters, Movable Heat Shield and Ar Flow Guide** **W.8 3**
Wenjia Su, Ran Zuo
School of Energy and Power, Jiangsu University, Zhenjiang, China; SIMAP-EPM, BP75, 38402 Saint Martin d'Hè res, France

15:00 **Prospects of Floating-Zone Growth of Silicon Crystals for Power Electronics and Solar Cells** **W.8 4**
Peter Dold, Frank Zobel, Roland Kunert
Fraunhofer CSP, Otto-Eißfeldt-Str. 12, 06120 Halle, Germany

15:30 **Coffee Break**

Poster Session : J. Friedrich

16:00 **Plasma-Assisted Molecular Beam Epitaxial Growth of** **WP.9 1**
Yong Tae Kim1, Ji -Ho Park1,2, Akihiro Wakahara2, Hiroshi Okada2, Hiroto Sekiguchi2
Semiconductor Materials and Devices Laboratory, 1Korea Institute of Science and Technology, Hwarangno 14-gil 5, Seoul, Korea; 2Department of Electronics and Information Engineering, Toyohashi University of Technology, 1-1 Hibarigaoka, Toyohashi, Japan

16:00 **Numerical Simulation of Axial Oxygen Concentration Distribution in the Silicon Crystal during the Czochralski Growth with a Transverse Magnetic Field** **WP.9 2**
Jyh-Chen Chen, Pei-Yi Chiang, Ching-Hsin Chang, Chun-Hung Chen, Chien-Cheng Liu
Department of Mechanical Engineering, National Central University, Taiwan, R.O.C.;Sino-American Silicon Products Inc., Taiwan, R.O.C.

16:00 **Structural Characterization of Bismuth Zinc Oxide Thin Films and Thermoelectric Properties Prepared by PAMBE** **WP.9 3**
Soon-Ku Hong, Dong Seok Lim, Myoungho Joen, Hyojin Kim, Dojin Kim, Soon-Gil Yoon, Jeong Yong Lee, Hyung Koun Cho
Chungnam National University, KAIST, Sungkyunkwan University

16:00 **Optical and optoelectronic properties of porous silicon and silicon nanowires for solar cells** **WP.9 4**
R. Ouertani, C. Amri, M. Ben Rabha
Laboratoire de Photovoltaïque, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisia

16:00 **Optimization of the conditions of pressure and time deposition for the elaboration of a-SiH thin films by PECVD** **WP.9 5**
Sana Ben Amor, Wissem Dimassi, Rachid Ouertani and Hatem Ezzaouia
Photovoltaic Laboratory Research and Technology Centre of Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia

16:00 **Aluminum doped zinc oxide Wide bandgap p-type optical window for μc-Si superstrate solar cell** **WP.9 6**
A. Bouloufa1, F. Khaled1,2, Kamal Djessas3
1Laboratoire d'Electrochimie et Matériaux, Université de Sétif-1, Algérie. 2Département d'Electronique, Université Mohamed El Bachir El Ibrahimi de Bordj Bou Arréridj, Algérie. 3Laboratoire Procédés Matériaux et Energie Solaire PROMES-CNRS, 66100 Perpignan, France.

16:00 **Studies on optical properties of Potassium pentaborate and Sodium pentaborate single crystals for frequency conversion application** **WP.9 7**
Lakshmipriya.M, Rajan Babu.D, Ezhil Vizhi
Crystal Growth and Crystallography Division, School of Advanced Sciences VIT University, Vellore-14, Tamil Nadu, India

16:00 **Nucleation Kinetics, Growth and Characterization of Piperazinium L-Tartrate (PLT) Single Crystals for frequency conversion** **WP.9 8**
Vijayalakshmi.M, Rajan Babu.D, Ezhil Vizhi
Crystal Growth and Crystallography Division, School of Advanced Sciences VIT University, Vellore-14, Tamil Nadu, India

16:00 **Effect of cesium chloride addition on crystal growth, structural, optical, thermal properties of γ-glycine single crystal** **WP.9 9**
Yogambal.C, Rajan Babu.D, Ezhil Vizhi
Crystal Growth and Crystallography Division, School of Advanced Sciences VIT University, Vellore-14, Tamil Nadu, India

16:00 **Growth and characterization of SnxSbySz Sulfosalt crystals** **WP.9 10**
D. Abdelkader, N. Khemiri, P. Miska, M. Ben Rabeh*, M. Kanzari
Laboratoire de Photovoltaique et Materiaux Semi-conducteurs-ENIT BP 37, le Belvedere 1002-Tunis, Tunisie; Institut Jean Lamour (IJL) CNRS UMR 7198, Département de Chimie et Physique des Solides et des Surfaces, Faculté des Sciences et Technologies, BP 70239, F-54506 Vandoeuvre les Nancy Cedex, France; Laboratoire de Photovoltaiques et Materiaux Semi-conducteurs-ENIT-IPEITunis Montfleury-Universite de Tunis

16:00 **Optical characterization of Er-induced changes of the defect structure in ZnSe single crystals** **WP.9 11**
Iu. Nasieka, M. Boyko, V. Strelchuk, N. Kovalenko, A. Gerasimenko
Iu. Nasieka, M. Boyko, V. Strelchuk - Lashkarev Institute of Semiconductor Physics of NAS of Ukraine, 41 Pr. Nauki, 03028 Kyiv, Ukraine; N. Kovalenko, A. Gerasimenko - Institute for Single Crystals of NAS of Ukraine, 61001, Lenina Ave. 60, Kharkiv, Ukraine

16:00 **Direct Observation of Carbon Nanostructure Growth at Liquid-solid Interfaces** **WP.9 12**
Linfeng Fei, Tieyu Sun, Helen L. W. Chan, Yu Wang
Department of Applied Physics and Material Research Center, The Hong Kong Polytechnic University, Hong Kong

16:00 **Germanium nanocrystals embedded in a SiO2 matrix driving by surface roughness.** **WP.9 13**
A. Hernández-Hernández(1,2), L. A. Hernández-Hernández(3), F. De Moure-Flores(4), E. Campos-Gonzalez(1), J. G. Quiñones-Galván(5), J. Santoyo-Salazar(1) J. Aguilar-Hernández(3), G. Contreras-Puente(3), G. Santana (2) and M. Meléndez-Lira(1).
(1) Departamento de Física, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, A.P. 14740, C.P. 07300, México, Distrito Federal, México. (2) Instituto de Investigaciones en Materiales, Universidad Autónoma de México, Circuito Exterior, Ciudad Universitaria, Coyoacán, 04510, México, D. F. (3) Escuela Superior de Física y Matemáticas del Instituto Politécnico Nacional, Edificio 9 U.P. Adolfo López Mateos, Col. San Pedro Zacatenco, C.P. 07730 (4) Facultad de Química Materiales, Universidad Autónoma de Querétaro, Querétaro, 76010, México. (5) Departamento de Física, Instituto Nacional de Investigaciones Nucleares, Apdo. Postal 18-1027, México, DF 11801, México

16:00 **Investigation of cantilever driving low frequency energy harvesters based on relaxor-based single crystals** **WP.9 14**
Bo Ren, Chundong Xu, Zhu Liang, Wenning Di, Xiangyong Zhao, Haosu Luo
Key Laboratory of Inorganic Functional Material and Device, Shanghai Institute of Ceramics, Chinese Academy of Sciences

16:00 **Modeling of heat and mass transfer in AlN MOVPE reactor as a tool for design of modern ceramic materials for high power electronics applications** **WP.9 15**
Jakub Nieścior 1, Jakub Skibinski 1, Piotr Caban 2, Tomasz Wejrzanowski 1, Krzysztof J. Kurzydlowski 1
1 Faculty of Materials Science Engineering Warsaw University of Technology, Warsaw, Poland; 2 Institute of Electronic Materials Technology, Warsaw, Poland

16:00 **Selective read of stored information in RE doped aluminium perovskites** **WP.9 16**
Chiriu D., Ricci P.C., Carbonaro C.M., Salis M., Stagi L.
Department of Physics University of cagliari

16:00 **Modeling of SiC crystal growth proces in PVT reactor** **WP.9 17**
M. Grybczuk(1), T. Wejrzanowski(1), E. Tymicki(2), J. Dagiel, K. J. Kurzydłowski(1)
1 Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland; 2 Institute of Electronic Materials Technology, Warsaw, Poland

16:00 **Direct Fabrication of LiCoO2 Crystal Layers onto Stainless Steel Substrates by Flux Coating** **WP.9 18**
Yusuke Mizuno[1], Nobuyuki Zettsu[1,2], Takuya Sakaguchi[3], Toshiya Saito[3], Hajime Wagata[1,2], Shuji Oishi[1], Katsuya Teshima[1,2]
[1] Shinshu University; [2] JST-CREST; [3] Toyota Motor Corporation

16:00 **Growth of GaAs nanowires on the selective areas of patterned Si (001) substrate** **WP.9 19**
H. Suzuki1), D. Kodera2), A. Haga1), I. Harada1), A. Fukuyama1), T. Ikari1), and Y. Ohshita2)
1 Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki, Japan; 2 Toyota Technological Institute, 2-12-1 Hisakata, Tempakuku, Nagoya 468-8511, Japan

16:00 **Crystal growth and structural studies of BaCaBO3F (BCBF)** **WP.9 20**
M. Burianek, M. Teck, O. Medenbach, M. Mühlberg, R.X. Fischer
M. Burianek: Department of Geosciences, University of Bremen, Germany; M.Teck: Department of Chemistry, University of Bremen, Germany; O. Medenbach: Institute of Mineralogy, Ruhr-University Bochum, Germany; M. Mühlberg: Institute of Crystallography, University of Cologne, Germany; R.X. Fischer: Department of Geosciences, University of Bremen, Germany

16:00 **ZnS nanorods by spray pyrolysis** **WP.9 21**
T. Dedova, I. Gromyko, M. Krunks, V. Mikli, , T. Unt, A. Mere
Department of Materials Science, Tallinn University of Technology, Estonia

16:00 **Interface state density (Dit) evaluation of high quality hetero-epitaxial 3C-SiC(001) for high-power MOSFET applications.** **WP.9 22**
R. Anzalone, S. Privitera, M. Camarda, A. Alberti, G. Mannino, S. Di Franco and F. La Via.
Institute for Microelectronics and Microsystems (IMM) of CNR

16:00 **The crystal structure and optical properties of CdTe nano-composite obtained by treatment of GaTe layers in Cd vapor** **WP.9 23**
Nicolae Spalatu, Iuliana Caraman, Dumitru Untila, Jaan Hiie
Physics Department, Moldova State University, A. Mateevici str. 60, Chisinau MD 2009, Republic of Moldova; Vasile Alecsandri University of Bacau, Calea Marasesti 157, Bacau, 600115, Romania; Department of Materials Science, Tallinn University of Technology, Ehitajate tee 5, Tallinn 19086, Estonia

16:00 **Molecular processes leading to gallium attachment at GaN(0001) surface during growth of gallium nitride by MOVPE method - ab initio study** **WP.9 24**
Agnieszka Jamroz, Pawel Kempisty, Pawel Strak, Stanislaw Krukowski
Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland; Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland; Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland; Institute of High Pressure Physics, Polish Academy of Sciences, Sokołowska 29/37, 01-142 Warsaw, Poland, Interdisciplinary Centre for Materials Modeling, Warsaw University, Pawińskiego 5a, 02-106 Warsaw, Poland

16:00 **Thermoelectric properties of AZO/VO2 thin films** **WP.9 25**
Adriana Nogueira, Joana Loureiro, Lúcia M.Ferreira, Alexandra Rodrigues, Joana Figueira, Rodrigo Martins, Isabel Ferreira
CENIMAT/I3N Departamento de Ciência dos Materiais Faculdade de Ciências e Tecnologia - FCT, Universidade Nova de Lisboa CEMOP-UNINOVA 2829-516 Caparica Portugal

16:00 **INFLUENCE OF ANNEALING TEMPERATURE ON THE OPTOLECTRONIC PROPERTIES OF V2O5 THIN FILMS DEPOSITED ON Ag, Au and Sn NANO-PARTICLES** **WP.9 26**
A. Nogueira, V. Eugénio, J. Loureiro, L.M. Ferreira, A. Rodrigues, R. Martins, I. Ferreira
CENIMAT/I3N, Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa and CEMOP-UNINOVA, 2829-516 Caparica, Portugal

16:00 **Formation of Ferroelectric Thin Films using Reactive Magnetron Layer by Layer Deposition Technique** **WP.9 27**
Vytautas Astasauskas, Aleksandras Iljinas, Vytautas Stankus, Brigita Abakeviciene, Jurgita Cyvienė, Sigitas Joneliunas
Department of Physics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania

16:00 **One-step aqueous solution synthesis of SixGe1-x nanocrystals** **WP.9 28**
Darragh P. Carolan, Keith Linehan, Hugh Doyle
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

16:00 **Sonochemical synthesis and electrochemical characterization ofα-nickel hydroxide: precursor effects** **WP.9 29**
. Sinem Ertaş, Recep Kaş, Uğur ?nal, ?zg?r Birer
KUYTAM

16:00 **Fabrication of large-scale arrays of Si-based nanocrystals via thin film dewetting** **WP.9 30**
M. Naffouti*(1), M. Abbarchi(1), A. Benkouider(1), A. Ronda(1), L. Favre(1) G. Boudarham(2), N. Bonod(2), S. Bidault(3) and I. Berbezier(1)
(1) IM2NP-CNRS UMR 7334, AMU 13397 Marseille, France, (2) Institut Fresnel, CNRS UMR 7249, AMU,13397 Marseille, France, (3) Institut Langevin, CNRS UMR 7587 ESPCI, ParisTech, Paris, France

Silicon - Mono-like for PV : P. Dold

08:30 **Status and future of mono-like silicon crystals grown by directional solidification** W.10 1
Anis Jouini
CEA/LITEN - Department of Solar, Le Bourget-du-Lac, France

09:00 **Undercooling measurement and nucleation study of silicon droplet solidification on various substrates** W.10 2
M.G. Tsoutsouva1, T. Duffar2, C. Garnier2, G. Fournier2
1European Synchrotron Radiation Facility, 6 Rue Jules Horowitz, 38043 Grenoble, Cedex 9, France; 2SIMaP–EPM, PHELMA, BP75, 38402 Saint Martin d'Heres, France

09:15 **Quasi continuous recharging during directional solidification of silicon ingots for PV applications** W.10 3
M. Trempa1, M. Beier1, B. Gründig-Wendrock3, C. Reimann1, J. Friedrich1,2, K. Dadzis3, L. Sylla3, T. Richter3
1 Department Crystal Growth, Fraunhofer IISB, Schottkystrasse 10, 91058 Erlangen, Germany; 2 Fraunhofer THM, Am St.-Niclas-Schacht 13, 09599 Freiberg, Germany; 3SolarWorld Innovations GmbH, Berthelsdorfer Str. 111A, 09599 Freiberg, Germany

09:30 **Crystal growth of mono-like silicon ingot using functional grain boundaries** W.10 4
Kentaro Kutsukake, Yutaka Ohno, Momoko Deura, Ichiro Yonenaga; Noritaka Usami
Tohoku University; Nagoya University

09:45 **Thermal effects on oxygen-related defects in CZ-silicon for solar cells** W.10 5
M. Juel; R. Søndenå; G. Stokkan; Ø. Nielsen; Ø. Mjøs
SINTEF Materials and Chemistry, Box 4760 Sluppen, NO-7465 Trondheim, Norway; Institute for Energy Technology, Instituttveien 18, NO-2007 Kjeller, Norway; SINTEF Materials and Chemistry, Box 4760 Sluppen, NO-7465 Trondheim, Norway; NorSun AS, Sommerrogaten 13-15, NO-0255 Oslo, Norway; Norwegian Crystals, Ørnesveien 3, NO-8160 Glomfjord, Norway

10:00 **Coffee Break**

Energy generation, conversion & storage : J. Friedrich

10:30 **Present stage and future prospects of development of compressor blade material** W.11 1
Tomonori Kitashima
National Institute for Materials Science, Japan

11:00 **Novel casting technologies for single crystalline nickel-based superalloy turbine blades** W.11 2
Ralf Rettig, Matthias Hofmeister, Martin M. Franke, Robert F. Singer
Institute of Science and Technology of Metals, Department of Materials Science and Engineering, University of Erlangen, Martensstr. 5, D-91058 Erlangen, Germany

11:30 **Surface Coating Mediated Swelling and Fracture in Lithiated Core-Shell Nanowires** W.11 3
G. Sandu(1), L. Brassart(2), J.-F. Gohy(3), T. Pardoen(2), S. Melinte(1) and A. Vlad(1)
(1) ICTM, Université catholique de Louvain, Louvain la Neuve, B-1348 Belgium.
(2) IMMC, Université catholique de Louvain, Louvain la Neuve, B-1348 Belgium.
(3) IMCN, Université catholique de Louvain, Louvain la Neuve, B-1348 Belgium.

11:45 **Self-Assembled Ultrathin Anatase TiO2 Nanosheets with Reactive (001) Facets for Highly Enhanced Reversible Li Storage** W.11 4
L.H. Nguyen, V. Aravindan*, S.A. Kulkarni, F. Yanan, R.R. Prabhakar, S.K. Batabyal and S. Madhavi
Energy Research Institute @ NTU (ERI@N), Nanyang Technological University, Singapore 637553 (Singapore) School of Materials Science and Engineering, Nanyang Technological University, Singapore 639798 (Singapore)

12:00 **Highly efficient photocatalytic water splitting with colloidal CdS nanorods by mediated hole scavenging** W.11 5
Thomas Simon, Maximilian Berr, Aleksandar Vaneski, David Volbers, Regina Wyrwich, Markus Doeblinger, Andrei Susha, Andrey Rogach, Frank Jaeckel, Jacek Stolarczyk and Jochen Feldmann
Photonics and Optoelectronics Group, Ludwig-Maximilians-University Munchen, Amalienstr. 54,80799 Munich (Germany); Nanosystems Initiative Munich (NIM), Schellingstr. 4, 80799 Munich (Germany); Department of Physics and Materials Science and Centre for Functional Photonics, City University of Hong Kong, Tat Chee Avenue, Hong Kong; Department of Chemistry, Ludwig-Maximilians-University Munchen, Butenandtstr. 5-13 (E), 81377 Munich, Germany; Department of Physics and Stephenson Institute for Renewable Energy, University of Liverpool, Chadwick Building, Peach Street, Liverpool L69 7ZF, UK

12:15 **LUNCH**

SYMPOSIUM X

Materials research for group IV semiconductors: growth, characterization & techno. developments

Symposium Organizers:

Gudrun Kissinger, IHP, Frankfurt (Oder), Germany

Sergio Pizzini, University of Milano-Bicocca, Italy

Hiroshi Yamada-Kaneta, Kyusyu Institute of Technology, Fukuoka, Japan

Cor Claeys , IMEC, Leuven, Belgium

Deren Yang, Zhejiang University, Hangzhou, P. R. China

Gregory Wilson, National Renewable Energy Laboratory, Golden, USA

26 May 2014

09:00 **Opening**

Device Technology : M. Lemme and Y.-C. See

09:15 **Technology and Collaborative Innovation in the Mobile Nanoelectronics Era** X.1 1
Yee-Chaung See
Taiwan Semiconductor Manufacturing Company

09:45 **A Hybrid Optical-Electrical Pathway to Quantum Computing in Silicon** X.1 2
Jeffrey C. McCallum 1, Chunming Yin 2, Milos Rancic 3, Gabriele G. de Boo 2, Nikolas Stavrias 1, Matthew J. Sellars 3 and Sven Rogge 2
1 Centre of Excellence for Quantum Computation and Communication Technology, School of Physics, University of Melbourne, Melbourne, Victoria 3010, Australia. 2 Centre of Excellence for Quantum Computation and Communication Technology, School of Physics, University of New South Wales, Sydney, New South Wales 2052, Australia. 3 Centre of Excellence for Quantum Computation and Communication Technology, RSPE, Australian National University, Canberra, Australian Capital Territory 0200, Australia.

10:00 **Coffee Break**

10:30 **Mechanism-Engineered Steep-Slope Transistors with Improved Switching Behavior for Future Ultra-Low Power Applications** X.1 3
Ru Huang, Qianqian Huang, Chunlei Wu, Zhan Zhan, Yingxin Qiu, Jiaxin Wang,Yangyuan Wang
Key Laboratory of Microelectronic Devices and Circuits(MOE); Institute of Microelectronics, Peking University, Beijing 100871, China

11:00 **Surface Nucleation and Grain Growth of SiGe/Si bi-layer for Vertical Channel in VNANDs** X.1 4
Sangsoo Lee 1, Yong-Hoon Son 1,2, Kihyun Hwang 2, Yoo Gyun Shin 2 and Euijoon Yoon 1*
1 Department of Materials Science and Engineering, Seoul National University, Seoul 151-742, Korea. 2 Semiconductor R&D Center, Samsung Electronics Co., Ltd., Hwasung 445-701, Korea.

11:15 **Comparison between experimental and simulated strain profiles in Ge channels with embedded source/drain stressors** X.1 5
R. Buehler; G. Eneman; P. Favia; H. Bender; B. Vincent; A. Hikavyy; R. Loo; J.A. Martino; C. Claeys; E. Simoen; N. Collaert; and A. Thean
Imec, Kapeldreef 75, B-3001 Leuven, Belgium LSI/PSI/USP University of Sao Paulo, Sao Paulo, Brazil EE Dept., KU Leuven, Leuven, Belgium Depart of Solid-St. Physics, Ghent University, Gent, Belgium

11:30 **Ultrathin GeSn pMOSFETs on Si (111) by solid phase epitaxy** X.1 6
Tatsuro Maeda, Wipakorn Jevasuwan, Hiroyuki Hattori, Noriyuki Uchida, Shu Miura, Masatoshi Tanaka, J. -P. Locquet, R. R. Lieten
National Institute of Advanced Industrial Science and Technology, Yokohama National University, KU Leuven, IMEC

11:45 **Monolithic integration of high performance germanium (Ge) based infrared photodetector on silicon and Ge on insulator (GeOI) substrates** X.1 7
K. Takhar1, M. Biswas1, D. Tetzlaff2, T. Wietler2, H. J. Osten2 and Apurba Laha1
1Department of Electrical Engineering and Center of Excellence in Nanoelectronics, Indian Institute of Technology Bombay, Mumbai 400076, India 2Institute of Electronic Materials and Devices, Leibniz University Hannover, Schneiderberg 32, 30167 Hannover, Germany

12:00 **Lunch Break**

Graphene : C. Claeys and M. Caymax

14:00 **CVD graphene for integrated graphene devices** X.2 1
M.C.Lemme
University of Siegen

14:30 **Graphene and Silicon Carbide: from Fundamental and Functionalization to Applications** X.2 2
Patrick Soukiassian
Commissariat à l'Energie Atomique et aux Energies Alternatives, Saclay, France and Synchrotron SOLEIL, L'Orme des Merisiers,Saint Aubin, France

15:00 **Nanoscale electrical characterization of graphene/AlGaN/GaN heterostructures** X.2 3
G. Fisichella 1,2, G. Greco 1, F. Roccaforte 1, S. Ravesi 3, F. Giannazzo 1
1 CNR-IMM, Catania, Italy; 2 Department of Electronic Engineering, University of Catania, Italy; 3 STMicroelectronics, Catania, Italy

15:15 **Kinetic Monte Carlo simulations of graphene growth and manipulation** X.2 4
I. Dereztis, G. Fisicaro, F. Giannazzo, G. Nicotra, S. Poma, S. Scalese, G. Angilella and A. La Magna
CNR-IMM Catania VIII Strada 5, Catania (Italy); Dipartimento di Fisica Università di Catania, Via Santa Sofia 64 Catania Italy

15:30 **Coffee Break**

Nanocrystals and Nanostructure Applications : A. Cavallini and D. Yang

16:00 **Defect dynamics and heat flow in Si and Si nanostructures** X.3 1
S.K. Estreicher, T.M. Gibbons, and M.B. Bebek
Physics department, Texas Tech University, Lubbock TX 79409-1051, USA

16:30 **Self-assembled nano-voids and gettered Au dots in SiGe/Si layers for plasmonic application** X.3 2
P.I.Gaiduk, A.Nylandsted Larsen
Department of Physics and Astronomy/iNANO, Aarhus University, Denmark

16:45 **Investigation of Schottky Barriers in Ni-silicided Silicon Nanowire Devices** X.3 3
Jürgen Beister1, Andre Wachowiak1, André Heinzig123, Walter M. Weber13, Thomas Mikolajick123
1 NaMLab gGmbH, Nöthnitzer Strasse 64, 01187 Dresden, Germany; 2 Chair for Nanoelectronic Materials, TU Dresden, Nöthnitzer Strasse 64, 01187 Dresden, Germany; 3 Center for Advancing Electronics Dresden (CfAED), TU Dresden, 01062 Dresden, Germany

17:00 **Horizontal Integration and Electrical Characterisation of Si/SiGe Nanowire Tunnel FETs** X.3 4
Virginie Brouzet 1&2, Bassem Salem 1, Priyanka Periwal 1, Guillaume Rosaz 1, Thierry Baron 1, Franck Bassani 1, Pascal Gentile 3, Gerard Ghibaudo 2
1 LTM /CNRS-UMR 5129 CNRS-UJF, CEA Grenoble, 17 Rue des Martyrs F-38054 Grenoble-France;2 IMEP-LAHC, UMR 5130, MINATEC/INPG, 38016 Grenoble; 3 CEA/INAC/SiNaPS, 17 Rue des Martyrs 38054 Grenoble-France

17:15 **Phosphorus-Hyperdoped Si Nanocrystals : A Model for Localized Surface Plasmon Resonance** X.3 5
X. Pi, C. Delerue
State Key Laboratory of Silicon Materials and Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China ; IEMN-Department ISEN, UMR CNRS 8520, Lille 59046, France

17:30 **Enhancement of 1.54 μm emission due to the sensitization of Er3+ ions by quantum confined Ge nanocrystals** X.3 6
S. Manna1, S. Das1*, N. Prtljaga2†, L. Pavesi2 and S. K. Ray1
1 Department of Physic, Indian Institute of Technology Kharagpur, Kharagpur -721 302, India; 2 Dipartimento di Fisica, Laboratorio di Nanoscienze, Università di Trento, Italy; * Currently at Hitachi Cambridge Laboratory, UK; † Currently at LDSD group, University of Sheffield, U.K.

17:45 **Using surface chemistry to exquisitely tune the photoluminescent response of silicon nanocrystals.** X.3 7
Jonathan Veinot
Department of Chemistry University of Alberta Edmonton, Alberta, Canada, T6G2G2

18:00 **Size Controlled Synthesis and Surface Mediated Emission Colour Tuning of Silicon Nanocrystals** **X.3 8**
Keith Linehan, Hugh Doyle
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

18:15 **Synthesis of large crystalline Si nanoparticles by inductively coupled plasma chemical vapour deposition** **X.3 9**
Giovanni Mannino1, Alessandra Alberti1, Rosa Ruggeri1, Silvia Scalese1, Giulia Di Geronimo2, Antonio Terrasi, Agata Pennisi2, Giuseppe Faraci2
1 CNR-IMM Catania, Strada VIII n°5 Zona Industriale, 95121 Catania (Italy) 2 Università di Catania, Dipartimento di Fisica, Via Santa Sofia 64, 95123 Catania (Italy)

27 May 2014

Silicon Materials I : K. Kakimoto and W. von Ammon

08:30 **Defect formation behavior due to interaction between light elements and point defects in CZ-Si crystal growth** **X.4 1**
W.Sugimura, T.Ono, K.Nakamura, M.Hourai and K.Higashida
SUMCO Corporation, Department of Materials and Engineering, Kyushu University

09:00 **Improvement of the growth stability for large diameter Si -Float-Zone crystals by controlling the gas flow** **X.4 2**
Hans-Joachim Rost*, Robert Menzel*, Helge Riemann*, Michael Wuenscher*, Sandra Haufe**
*Leibniz Institute for Crystal Growth, Max-Born-Str.2, D-12489 Berlin; ** Humboldt-University Berlin, Institute of Physics, Newton Str. D-12489 Berlin

09:15 **Compensation-doped silicon for photovoltaic applications** **X.4 3**
Chengquan Xiao, Xuegong Yu, Deren Yang
State Key Laboratory of Silicon Materials and Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, People's Republic of China

09:30 **Analysis of the reduction of the tensile stress by post-growth annealing methods in multicrystalline Silicon wafers produced by the RST process** **X.4 4**
A. Tejero1, O. Martínez1, M.A. González1, J. Jiménez1, E. Tupin2, C. Belouet2, C. Baillis3
1 GdS-Optronlab, Dpto. Física Materia Condensada, Univ. de Valladolid, Edificio I+D, Paseo de Belén 11, 47011 Valladolid (Spain). 2 Solarforce, 1 rue du Dauphin 38300 Bourgoin-Jallieu (France) 3 EC2-Modélisation, 66 bd Niels BOHR CS 52132 - 69603 Villeurbanne (France)

09:45 **Purification of SoG silicon by millisecond range internal gettering of metal impurities** **X.4 5**
S. Prucnal1, F. L. Bregolin1, K. Krockert2, U. Wiesenhütter1 and W. Skorupa1
1Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, P.O. Box 510119, 01314 Dresden, Germany 2Institute for Experimental Physics, TU Bergakademie Freiberg, Leipziger Str. 23, 09599 Freiberg, Germany

10:00 **Coffee Break**

Silicon Materials II : T. Goto and B. G. Svensson

10:30 **FZ and CZ silicon crystal growth: Cost driving factors and new perspectives** **X.5 1**
Wilfried von Ammon
VON AMMON Consulting

11:00 **Si powder based thin layers and substrates sintered by thermal spray** **X.5 2**
M. Vardavoulias*, R. Gloeckner**, E. Behnaz**, N. Andersen***, S. Diplas****, A. Karlsson****, M. Stange****, J.S. Graff****, A. Ulyashin****
*Pyrogenesis, Lavrion, Greece **Elkem Solar ***University of Oslo, Norway ****SINTEF, Oslo, Norway

11:15 **Synthesis and characterization of highly stable electrodeposited silicon thin films** **X.5 3**
C. Vichery, V. Le Nader, C. Frantz, Y. Zhang, J. Whitby, D. Alberts, J. Michler, L. Philippe
EMPA, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Mechanics of Materials and Nanostructures, Feuerwerkerstrasse 39, CH-3602, Thun, Switzerland

11:30 **Room temperature kerfless silicon thin foils obtained via a stress inducing epoxy layer** **X.5 4**
P.Bellanger, P.-O.Bouchard, M. Bernacki, J.M.Serra
Faculdade de Ciências, Universidade de Lisboa/SESUL, Campo Grande, 1749-016 Lisboa, Portugal; Mines ParisTech, CEMEF – Centre de Mise en Forme des Matériaux, CNRS UMR 7635, BP 207, 1 rue Claude Daunesse, 06904 Sophia Antipolis Cedex, France; Mines ParisTech, CEMEF – Centre de Mise en Forme des Matériaux, CNRS UMR 7635, BP 207, 1 rue Claude Daunesse, 06904 Sophia Antipolis Cedex, France; Faculdade de Ciências, Universidade de Lisboa/SESUL, Campo Grande, 1749-016 Lisboa, Portugal

12:15 **Lunch Break**

Epitaxial Growth of Group IV Semiconductors : R. Huang and P. Soukiassian

14:00 **Monolithic integration of Ge and III-V compound semiconductors on 300mm Si for CMOS** **X.6 1**
Matty Caymax, Roger Loo, Clement Merckling, Weiming Guo, Sijia Jiang1, M. Heyns1, W. Vandervorst2
Imec, Kapeldreef 75, B-3001 Leuven, Belgium 1Also with Department of Metallurgy and Materials Engineering, KULeuven, Kasteelpark Arenberg 44-bus 2450,3001 Leuven, Belgium 2Also with Department of Physics and Astronomy, KULeuven, Celestijnenlaan 200D-bus 2418, 3001 Leuven,Belgium

14:30 **Designing dislocation filters in buffer layers** **X.6 2**
Thomas Ward (1), Ana M Sanchez (1), M. Tang (2), J. Wu (2), H-Y Liu (2) and Richard Beanland (1)
(1) Department of Physics, University of Warwick, Coventry CV4 7AL, UK (2) Department of Electronic and Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK

14:45 **Effect of sub-monolayer carbon mediation on interfacial mixing in Ge growth on Si(100)** **X.6 3**
Yuhki Itoh, Ryo Hayase, Shinji Hatakeyama, Tomoyuki Kawashima, and Katsuyoshi Washio
Graduate School of Engineering Tohoku University

15:00 **Comparison of SiGe relaxed buffer layers grown on Si(001) substrate by forward and reverse Ge grading approaches** **X.6 4**
Vineet Sivadasan, Maksym Myronov, Stephen Rhead and David R. Leadley
Department of Physics, The University of Warwick, Coventry CV4 7AL, UK

15:15 **Template assisted growth and anomalous dielectric properties of (100) oriented Gd2O3 thin films on Si(100)** **X.6 5**
Ayan Roy Chaudhuri, A. Fissel, H. J. Osten
Institute of Electronic Materials and Devices, Leibniz University of Hannover, Schneiderberg 32, D-30167 Hannover, Germany; Information Technology Laboratory, Leibniz University of Hannover, Schneiderberg 32, D-30167 Hannover, Germany; Institute of Electronic Materials and Devices, Leibniz University of Hannover, Schneiderberg 32, D-30167 Hannover, Germany

15:30 **Suppression of twin defects in crystalline GeSn alloys on silicon by solid phase epitaxy** **X.6 6**
Ruben R. Lieten1,2, Jin Won Seo1, Wipakorn Jevasuwan3, Hiroyuki Hattori3, Noriyuki Uchida3, Shu Miura4, Masatoshi Tanaka4, Jean-Pierre Locquet1, Tatsuro Maeda3
1 KU Leuven, 3001 Leuven, Belgium Phone: +32-16-32-7228 E-mail: ruben.lieten@fys.kuleuven.be 2 IMEC, 3001 Leuven, Belgium 3 National Institute for Advanced Industrial Science and Technology (AIST) Tsukuba, Ibaraki 305-8562, Japan 4 Yokohama National University Yokohama, Kanagawa , 240-8501, Japan

15:45 **Thermally induced pit formation and Sn diffusion in strained GeSn films** **X.6 7**
C. Fleischmann1,2, R. R. Lieten2,3, P. Hönicke4, F. Seidel1,2, S. Zaima5, T. Conard2, K. Temst1, W. Vandervorst1,2, and A. Vantomme1
1 Instituut voor Kern- en Stralingsfysica, KU Leuven,Celestijnenlaan 200D, BE-3001 Leuven, Belgium; 2 imec, Kapeldreef 75, BE-3001 Leuven, Belgium; 3 Department of Physics and Astronomy, KU Leuven, BE-3001 Leuven, Belgium; 4 Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany; 5 Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan

16:00 **Coffee Break**

Photovoltaics : X. Yu and A. Magerl

16:30 **Epitaxial growth of guest-free Si clathrate film on Si substrate for new solar cell device structure application** **X.7 1**
K. Sakai 1, T. Haraguchi 2, F. Ohashi 3, T. Kume 3, H. Suzuki 2, A. Fukuyama 2, S. Nonomura 3, and T. Ikari 2
1 Center for Collaborative Research & Community Cooperation, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki, Japan. 2 Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki, Japan. 3 Faculty of Engineering, Gifu University, 1-1 Yanagido, Gifu, Japan.

16:45 **Study of diffusion processes at the III-V/IV interface in multijunction solar cells** **X.7 2**
K.S. Zelentsov (1), A.S. Gudovskikh (1), N.A. Kalyuzhnyy (2), S.A. Mintairov (2)
(1) St. Petersburg Academic University-Nanotechnology Research and Education Centre of Russian Academy of Sciences, Hlopina str. 8/3, 194021, St.Petersburg, Russia; (2) A.F. Ioffe Physico-technical Institute, Polytechnicheskaya str. 26, 194021 St.-Petersburg, Russia;

17:00 **Influence of copper contamination on the reverse and forward characteristics of multicrystalline p-type silicon solar cells** **X.7 3**
T. Turmagambetov, S. Dubois, J. P. Garandet, B. Martel, N. Enjalbert, J. Veirman, E. Pihan
CEA-INES

17:15 **Structural and electrical properties of hydrogenated microcrystalline silicon-carbon alloys deposited at low substrate temperature by RF-PECVD** **X.7 4**
S. Gaiaschi, M-E. Gueunier-Farret, C. Longeaud, E.V. Johnson, P. Chapon, J-P. Kleider
LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE LPICM-CNRS, Ecole Polytechnique, 91128 Palaiseau, FRANCE; LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE; LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE; LPICM-CNRS, Ecole Polytechnique, 91128 Palaiseau, FRANCE; HORIBA Jobin Yvon, 16-18, rue du Canal, 91165 Longjumeau CEDEX, FRANCE; LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE

17:30 **Thin film growth of type II Ge clathrate on Ge substrates** **X.7 5**
F. Ohashi, T. Sugiyama, A. Noguchi, T. Kume, T. Ban and S. Nonomura
Faculty of Engineering, Gifu University, 1-1 Yanagido, Gifu, Japan

17:45 **Predicting the impurity-defect complexes population in silicon: a coupled DFT/continuous kinetic study** **X.7 6**
G. Brenet,1 D. Timerkaeva,1,2 E. Sgourou,3 C. Londos,3 D. Caliste,1 and P. Pochet,1
1 Laboratoire de Simulation Atomistique (L_Sim), SP2M, INAC, CEA-UJF, 38054 Grenoble Cedex 9, France 2 Kazan Federal University, 18 Kremlevskaya St., Kazan, 420018, Russia 3 University of Athens, Solid State Physics Section, Panepistimiopolis Zografos, Athens 157 84, Greece

Postersession 1 : G. Kissinger and H. Yamada-Kaneta

18:00 **Purification of metallurgical-grade silicon via acid leaching and annealing thermal** **XP.8 1**
Marouan Khalifa, Messaoud Hajji, Malek Atyaoui, Rachid Ouertani,Hatem Ezzaouiaa
Photovoltaic Laboratory Research and Technology Centre on Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia

18:00 **Effect of ultrasound on the defect structure of the Si-SiO2 system** **XP.8 2**
D.Kropman, T.Laas, E.Dauksta
Tallinn University of Technology,Tallinn University,Riga Technical University

18:00 **Isovalent defect engineering strategies to control A-centres in silicon** **XP.8 3**
H. Wang,1 A. Chroneos,2,3,a) C. A. Londos,4 E. N. Sgourou,4 and U. Schwingenschlögl1,b)
1PSE Division, KAUST, Thuwal 23955-6900, Saudi Arabia 2Engineering and Innovation, The Open University, Milton Keynes MK7 6AA, United Kingdom 3Department of Materials, Imperial College, London SW7 2AZ, United Kingdom 4University of Athens, Solid State Physics Section, Panepistimiopolis Zografos, Athens 157 84, Greece

18:00 **Structural characterization and optical properties of pulsed laser deposition of Se75Te25 and Se75Te17Ge8 amorphous thin films** **XP.8 4**
S. M. Salem(1), H. Zhied(2), A. Lahmar(3), A.M.Salem(1,4), G.B.Sakr(5), P. Barroy(3), N.Teleb(1,3), M. El Marssi(3)
(1) Electron Microscope and Thin Films Department, National Research Center, Dokki, Cairo, Egypt, (2) Physics Department, College of Girls for Arts, Science and Education, University of Ain Shams, Cairo, Egypt (3) Laboratoire de Physique de la Mati?re Condens?e, LPMC, Universit? de Picardie Jules Verne, Amiens, France. (4) Physics Department-University College-Umm Al-Qura University-Saudi Arabia Kingdom. (5) Physics Department, Faculty of Education, University of Ain Shams, Cairo, Egypt.

18:00 **Ion beam analysis of Heusler alloy Fe3Si epitaxially grown on Si(111)** **XP.8 5**
Yuki Kawakubo1, Yuya Noguchi1, Tomoaki Hirata1, Hiroyuki Kobayashi1, Kazumasa Narumi2, Seiji Sakai2, Kohei Hamaya3, Yoshihito Maeda1,2
1 Department of Computer Science and Electronics, Kyushu Institute of Technology, Kawazu 680-4, Iizuka, Fukuoka 820-8502, Japan, 2 Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki 319-1195, Japan, 3 Department of Electronics, Kyushu University, Motooka 744, Fukuoka 819-0395, Japan

18:00 **Low power UV background as a bridge between the LCV and IR telecommunications** **XP.8 6**
M. Vieira1,2,3, M. A. Vieira1,2, V. Silva 1,2, P. Louro1,2, A. Fantoni 1,2
1Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1959-007 Lisboa, Portugal 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal

18:00 **Graphene and thin layers graphite formation by carbon implantation and annealing** **XP.8 7**
G. Gutierrez (1), F. Aweke(1), D. Muller (1), C. Speisser (1), G. Morvan (3), J. Arabski (2), F. Antoni(1), F. Le Normand (1, *)
(1) ICube-Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, Université de Strasbourg-CNRS, 23, rue du Loess, 67037 STRASBOURG Cedex, France (2) IPCMS-Institut de Physique et de Chimie des Matériaux de Strasbourg, UMR7504 CNRS/UdS, 23, rue du Loess , BP 43, 67034 STRASBOURG Cedex 2, France (3) LHyGeS-Laboratoire d'Hydrologie et de Géochimie de Strasbourg, UMR7517 CNRS/EOST/UdS, 1, rueBlessig 67084 STRASBOURG Cedex, France. *) Corresponding author: francois.le-normand@unistra.fr

18:00 **Deciphering mechanisms of enhanced-retarded oxygen diffusion in doped Si** **XP.8 8**
Dilyara Timerkaeva, Damien Caliste, Pascal Pochet
Dilyara Timerkaeva 1. Laboratoire de Simulation Atomistique (L_Sim), SP2M, INAC, CEA-UJF, 17 Av. des Martyrs, 38054 Grenoble, France, 2. Kazan Federal University, 18 Kremlyovskaya st., 420008 Kazan, Russian Federation; Damien Caliste 1. Laboratoire de Simulation Atomistique (L_Sim), SP2M, INAC, CEA-UJF, 17 Av. des Martyrs, 38054 Grenoble, France; Pascal Pochet 1. Laboratoire de Simulation Atomistique (L_Sim), SP2M, INAC, CEA-UJF, 17 Av. des Martyrs, 38054 Grenoble, France

18:00 **Inherent interface point defects in thermally grown (211)Si/SiO2 probed by electron spin resonance** **XP.8 9**
S. Iacovo, A. Stesmans
Department of Physics and Astronomy, University of Leuven, 3001 Leuven, Belgium

18:00 **Kinetic study of oxygen complexes and vacancy oxygen-related defects in silicon.** **XP.8 10**
V.Quemener, B. Raeissi, F. Herklotz, L. Murin, E. V. Monakhov, B. G. Svensson
Department of Physics, Center for Material Science and Nanotechnology, University of Oslo, P.O. Box 1048 Blindern, N-0316 Oslo, Norway.

18:00 **Traps in bismuth irradiated silicon** **XP.8 11**
M.L. Ciurea, S. Lazanu, A. Slav, and C. Palade
National Institute of Materials Physics, POBox MG-7, Magurele 77125 Romania

18:00 **An amazing choice of semiconductors for high-frequency FET: H-terminated polycrystalline diamond film prepared by DC arc jet CVD** **XP.8 12**
C.M. Li, J.L. Liu, L.X. Chen, J.J. Wei, L.F. Hei, J.J. Wang, Z.H. Feng, H. Guo
School of Materials Science and Engineering ,University of Science and Technology Beijing, Beijing 100083, P.R. China; Science and Technology on ASIC Laboratory, Hebei Semiconductor Research Institute, Shi Jia Zhuang 050051, P.R. China; Institute of Laser, Academy of Science of Hebei Province, Shi Jia Zhuang 050000, P.R. China

18:00 **Improved Wet Chemical Transfer Process to Obtain Clean High Quality Graphene** **XP.8 13**
Geetanjali Deokar, J.-L. Codron, E. Pichonat, X. Wallart, H. Happy, D. Vignaud
Institute of Electronics Microelectronics and Nanotechnology, University of Lille 1 Av. Poincaré CS 60069 59652 Villeneuve d'Ascq Cedex, France

18:00 **ELECTRON BEAM SILICON PURIFICATION** **XP.8 14**
Kravtsov Anatoly, Kravtsov Alexey
SIA «KEPP EU»; «KEPP-service» Ltd

18:00 **SiGe light-emitting structures with self-assembled islands for Si-based optical interconnections** **XP.8 15**
A.V. Novikov1, A.A. Tonkikh2, D. V. Yurasov1, A.A. Antonov1, N.A. Baydakova1, K.E. Kudryavtsev1, M.V. Shaleev1, D.N. Lobanov1, and Z.F. Krasilnik1
1 Institute for Physics of Microstructures RAS , 603950, GSP-105, Nizhny Novgorod, Russia; 2 Centre for Innovation Competence SiLi-nano, Martin Luther University Halle-Wittenberg, Karl-Freiherr-von-Fritsch-Str. 3, 06120 Halle, Germany

18:00 **Electrical properties of polysilicon in SOI structures** **XP.8 16**
Anatoly Druzhinin (1, 2), Ihor Ostrovskii (1, 2), Yuriy Khoverko (1, 2), Iurii Kogut (1), Volodymyr Peretyatko (1)
1 - National Lviv Polytechnic University, Lviv, Ukraine; 2 - International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland

18:00 **Mobility of charge carriers in diluted n- and p-Si(1-x)Ge(x) at x<0.1** **XP.8 17**
V.V. Emtsev (1), G.A. Oganesyan (1), N. Abrosimov (2), V. V. Kozlovski (3)
(1) Ioffe Physicotechnical Institute, Russian Academy of Sciences, 194021 St. Petersburg, Russia; (2) Leibniz Institute for Crystal Growth, Max-Born Str. 2, D-12489 Berlin, Germany (3) St. Petersburg Polytechnical State University, 195251 St. Petersburg, Russia

18:00 **Stimulated Oxygen Impurity Gettering Under Ultra-Shallow Junction Formation in Silicon** **XP.8 18**
O. Oberemok1, V. Klad'ko1, V. Litovchenko1, B. Romanyuk1, V. Popov1, V. Melnik1, A. Sarikov1, O. Gudymenko1 and J. Vanhellemont2
1 V. Lashkarev Institute of Semiconductor Physics NAS of Ukraine, 41 Prospect Nauki, 03028 Kyiv, Ukraine; 2 Department of Solid State Sciences, Ghent University, B-9000 Ghent, Belgium

18:00 **Structure, electronic properties and annealing behavior of di-interstitial-oxygen center in silicon** **XP.8 19**
N. Ganagona, E.V. Monakhov, B.G. Svensson, V.P. Markevich, A.R. Peaker, B. Hamilton, V.E. Gusakov, S.B. Lastovskii, L.I. Murin
Department of Physics, University of Oslo, PO Box 1048, Blindern, NO-0316 Oslo, Norway; Photon Science Institute, The University of Manchester, Manchester M13 9PL, United Kingdom; Scientific-Practical Materials Research Center of NAS of Belarus, Minsk 220072, Belarus

18:00 **Charge transition level of GePb1 centers at interfaces of SiO2/GexSi1-x/SiO2 heterostructures investigated by positron annihilation spectroscopy** **XP.8 20**
O. Madia1, N. Segercrantz2, V. Afanas'ev1, A. Stesmans1, L. Souriau3, J. Slotte2, F. Tuomisto2
1 KULeuven, Leuven, Belgium ; 2 Aalto University of Technology, Helsinki, Finland ; 3 IMEC, Leuven, Belgium

18:00 **Effect of nitrogen mole fraction on hydrogenated amorphous silicon nitride deposited by DC magnetron sputtering: Transition between metallic and reactive sputtering process** **XP.8 21**
K. Mokeddem, M. Kechouane
Département de Physique, Faculté des sciences, Université de M'hamed Bouguara, Avenue de l'indépendance 35000 Boumerdes; Laboratoire de Physique des Matériaux, Faculté de Physique, BP N°32, 16111 Bab- Ezzouar, USTHB, Alger, ALGERIA. Tel: 213 21 24 79 12, ext. 062, Fax: 213 21 24 73 44;

18:00 **Current–voltage characteristics of (Mo/Au)/AlGaN/GaN/Si Schottky diodes** **XP.8 22**
H. MOSBAHIa, M.Charfeddinea, M. GASSOUMIa, C. GAQUIEREb, M. A. ZAIDIa, H. MAAREFa
aLaboratoire de Micro-Optoélectronique et Nanostructures, Faculté des Sciences de Monastir, Avenue de l'environnement5000 Monastir, Tunisia. bInstitut d'Electronique de Microélectronique et de Nanotechnologie IEMN, Département hyperfréquences et Semiconducteurs, Université des Sciences et Technologies de Lille, Avenue Poincaré, 59652 Villeneuve d'Ascq Cedex, France.

18:00 **Formation of Low-Resistance Ohmic Contacts to MoS2 by Rapid Thermal Annealing** **XP.8 23**
Min Ji Park, Jung Ki Min, Kyung-Hwa Yoo
Department of Physics, Yonsei University, Seoul, 120-749, Republic of Korea

18:00 **Microcrystalline silicon film deposition over crystalline, sintered and powder substrates using an inline optical processing CVD system** **XP.8 24**
A.Augusto, F. Serra, A.M. Vallera, J.M.Serra
Faculdade de Ciências, Universidade de Lisboa/SESUL, Campo Grande, 1749-016 Lisboa, Portugal

18:00 **Properties of electrodeposited Germanium thin films** **XP.8 25**
Y.Uchida1, T. Funayama1□Y. Kogure1, K. Ueno2
Teikyo Univ. of Sci. 1, Shibaura Inst. Tech. 2

18:00 **Infrared study of thermal donor in Ge crystal** **XP.8 26**
K. Inoue, T. Taishi, Y. Murao, K. Kutsukake, M. Deura, Y. Ohno, I. Yonenaga
Institute for Materials Research, Tohoku University ; Faculty of engneering, Shinshu University

18:00 **Search for semiconducting Si clathrate: ternary type-I Si clathrate K8Ga8Si38** **XP.8 27**
Motoharu Imai1, Masaru Iioka2, Haruhiko Udono2, and Yoji Imai3
1Superconducting Properties Unit, National Institute for Materials Science, Tsukuba Japan; 2 College of Engineering, Ibaraki University, Hitachi, Japan; 3 Advanced Manufacturing Research Institute, National Institute for Advanced Industrial Science and Technology, Tsukuba, Japan

18:00 **Determination of Optical Bandgap and Germanium Content of Hydrogenated Microcrystalline Si1-xGex Films by Ultraviolet-visible and Auger Electron Spectroscopy Measurements** **XP.8 28**
Kyungsoo Jang, Youn-Jung Lee, S. M. Iftiquar, Junhee Jung, Jiwoong Kim, Jaehyun Cho, Taeyong Kim and Junsin Yi
Sungkyunkwan University

18:00 **Switchable charge states on a silicon surface : Single Atom Memory application** **XP.8 29**
Daejin Eom, Chang-Youn Moon, Ja-Yong Koo
Korea Research Institute of Standards and Science, Daejon, Korea

18:00 **Physical properties of SixCyO1-x-y thin films** **XP.8 30**
You-Cheng Jhang, Chih-Cheng Kao*
Department of Electro-Optical Engineering, Southern Taiwan University of Science and Technology

18:00 **Characterization of in-situ B doped polycrystalline Ge layers** **XP.8 31**
Hyunchul Jang, Byongju Kim, Sangmo Koo, Sun-Wook Kim, and Dae-Hong Ko
Department of Materials Science and Engineering, Yonsei University

18:00 **Vacancies in heavily n-type doped germanium** **XP.8 32**
J. Kujala, T. Südkamp, H. Bracht, F. Tuomisto, J. Slotte
Aalto University P.O. Box 11100 FI-00076 AALTO Finland; University of Münster, Münster, Germany

18:00 **In-situ B-doped Ge epitaxial layers on Si (001) by ultrahigh vacuum chemical vapor deposition** **XP.8 33**
Byongju Kim, Hyunchul Jang, Sangmo Koo, and Dae-Hong Ko
Department of Materials Science and Engineering, Yonsei University

18:00 **Properties of porous germanium formed by ion implantation** **XP.8 34**
B.C. Johnson 1, J. C. McCallum 1, J. S. Williams 2, G. Impellizzeri 3, L. Romano 3 and M. G. Grimaldi 3
1 School of Physics, University of Melbourne, Victoria, 3010, Australia, 2 Department of Electronic Materials Engineering, Research School of Physics and Engineering, Australian National University, Canberra, 0200 Australia 3 CNR-IMM MATIS and Department of Physics and Astronomy, University of Catania, 64 via S.Sofia, I-95123, Catania, Italy

18:00 **Depletion Behavior of Superjunction Power MOSFETs Visualized by Electron Beam Induced Current and Voltage Contrast Measurements** **XP.8 35**
S. Kirnstoetter, M. Faccinelli, W. Schustereder, J. G. Laven, H.¬J. Schulze, P. Hadley
S. Kirnstoetter, M. Faccinelli, P. Hadley Institute of Solid State Physics, Graz University of Technology, Graz 8010, Austria W. Schustereder Infineon Technologies Austria AG, Villach 9500, Austria J. G. Laven, H.¬J. Schulze Infineon Technologies AG, Munich 81726, Germany

18:00 **Strain relaxation and surface segregation during growth and annealing of GeSi/ Si and GeSiSn/Si heterostructures** **XP.8 37**
V.A. Timofeev; A.I. Nikiforov; V.I. Mashanov; S.A. Teys; O.P. Pchelyakov
Rzhanov Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

18:00 **Photoluminescent and Nonliner-Optical Properties of Nanocomposite Films Based on Silicon and Silicon Carbide** **XP.8 38**
V.Yu. Timoshenko, I.V. Mirgorodskiy, L. A. Golovan, G.K. Mussabek, K.K. Dikhanbayev, T.I. Taurbayev, A.V. Semenov, V.M. Puzikov
Lomonosov Moscow State University, Physics Department, 119991 Moscow, Russia; École Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland; al-Farabi Kazakh National University, Almaty, Kazakhstan; Institute for Single Crystals, National Academy of Science of Ukraine, Kharkov, Ukraine

18:00 **Formation and migration energies of vacancies and interstitials in a high-purity Si crystal** **XP.8 39**
Masashi Suezawa, Yoshiaki Iijima, Ichiro Yonenaga, Naoki Fukata
Institute for Materials Research, Tohoku University; National Institute for Materials Science

18:00 **Some aspects of phosphorus diffusion in germanium in In0,01Ga0,99As/In0,56Ga0,44P/Ge heterostructures** **XP.8 40**
S.P. Kobeleva, I.M. Anfimov, S.Y. Yurchuk, A.V. Turutin
National University of Science and Technology «MISIS»

18:00 **THIN SILICAFILMS DOPED PHOSPHORUS AND BORON OBTAINED BY SOL GEL FOR DIFFUSED N+P AND N+PP+ STRUCTURES** **XP.8 41**
A. D. Péné1, 2, B. Hartiti1, L. Bitjoka2, P.Thevenin3, C. Kapseu2
1MAC&PM Laboratory, ANEPMAER group, Department of Physicsm UH2MC University, FSTM Mohammedia-Morocco; 2 National Advanced School of Agro-Industrial Sciences, University of Ngaoundere-Cameroon; 3LMOPS Laboratory, Lorraine University , Metz-France

18:00 **Strain and Lattice Orientation Imaging by Quick Scanning X-ray Microscopy** **XP.8 42**
G. Chahine1, M.I. Richard1,2, T. Schroeder3, G. Capellini3,4, TN Tran Thi1, T. Schulli1
1 European Synchrotron Radiation Facility, BP 220, F-38043, cedex, Grenoble, France 2 Aix-Marseille Université, CNRS, IM2NP UMR 7334, 13397 Marseille Cedex 20, France 3 Innovations for High Performance Microelectronic, Im Technologiepark 25, 15236 Frankfurt (Oder), Germany 4 Dipartimento di Fisica "E. Amaldi", Università degli Studi Roma Tre, via Vasca Navale 84, 00146 Roma, Italy

18:00 **MOCVD grown Arsenic based III-V materials on blanket and nanopatterned Si(100) substrates showing room temperature photoluminescence** **XP.8 43**
R. Cipro1, M. Martin1, T. Baron1, F. Bassani1, V. Gorbenko1,2, S. David1, S. Arnaud1, JP. Barnes2, Y. Bogumilovicz2, P. Gergaud2, N. Rochas2, V. Loup2, C. Vizioz2, K. Yckache2, N. Chauvin3, X.Y. Bao4, Z .Ye4, D. Carlson4, JB Pin4, E. Sanchez4
1 LTM/CNRS-CEA-LETI, 17, rue des martyrs, 38054 Grenoble, France; 2 CEA, LETI, Minatec Campus, 17, Avenue des Martyrs, 38054 Grenoble C, France; 3 Institut des Nanotechnologies de Lyon (INL)-UMR5270-CNRS; INSA-Lyon, Université de Lyon, 7 Avenue Jean Capelle, 69621 Villeurbanne, France; 4 AMAT, 3050 Bowers Avenue, Santa Clara, CA 95054, USA

18:00 **Band engineering and absorption spectra in compressively strained Ge0.92Sn0.08/Ge quantum well infrared photodetector** **XP.8 44**
N. Yahyaoui1, N. Sfina1, J.-L. Lazzari2, A. Bournel3 and M. Said1*
1Laboratoire de la Matière Condensée et des Nanosciences (LMCN), Département de Physique, Faculté des Sciences de Monastir, Avenue de l'Environnement, 5019 Monastir, Tunisia. 2Centre Interdisciplinaire de Nanoscience de Marseille (CINaM), UMR CNRS 7325 — Aix-Marseille Université, Case 913, Campus de Luminy, 13288 Marseille cedex 9, France. 3Institut d'Electronique Fondamentale (IEF), UMR CNRS 8622 — Université Paris-Sud, Bât. 220, 91405 Orsay cedex, France.

18:00 **Quantitative Analysis of Carbon Impurity Concentration in Silicon Epitaxial Layers by Luminescence Activation Using Carbon Ion Implantation and Electron Irradiation** **XP.8 45**
Satoko NAKAGAWA, Kazuhiko KASHIMA
Global Wafers Japan

18:00 **Properties of a-SiGe:H thin films: correlation between photosensitivity and density of states** **XP.8 46**
L.LAIDOUDI, A.FEDALA, A.RAHAL
Laboratoire de Physique des Matériaux, Equipe: Couches Minces et Semi-conducteurs Département Matériaux et Composants Faculté de Physique, USTHB Alger, Algerie.

18:00 **Micro-Raman and XRD studies of Ge/GeSn heterostructures grown on Si (100) by molecular-beam epitaxy** **XP.8 47**
V.V. Strelchuk (1), A.S. Nikolenko (1), L.V. Borkovska (1), N.O. Korsunska, Yu.G. Sadofyev (2), V.P. Martovitsky (2)
(1) V. Lashkaryov Institute of Semiconductor Physics National Academy of Sciences of Ukraine, 45 Nauky pr., 03028 Kyiv, Ukraine (2) P.N. Lebedev Physical Institute, Russian Academy of Sciences, 119991 Moscow, Russia

18:00 **Determination of the single crystal Ge Young's modulus between room temperature and melt temperature using the impulse excitation technique** **XP.8 48**
A. K. Swarnakar*, O. Van der Biest*, Jan Van Humbeeck * and J. Vanhellemont**
Department of Metallurgy and Materials Engineering (MTM), KU Leuven, Belgium; *Department of Solid State Sciences, Ghent University, Belgium

18:00 **Structural and photoconductivity properties of silicon carbon thin films** **XP.8 49**
G. Ambrosone 1&2, D.K. Basa 3, U. Coscia 2&4, V. Rigato 5, S. Binetti6
1SPIN-CNR, Complesso Universitario MSA, via Cintia, I-80126, Napoli, Italy;2Dipartimento di Fisica, Università di Napoli "Federico II" Complesso Universitario MSA, via Cintia, I-80126 Napoli, Italy; 3Department of Physics, Utkal University, Bhubaneswar-751004, India; 4CNISM Unita' di Napoli, Complesso Universitario MSA, via Cinthia, 80126, Napoli, Italy; 5INFN Laboratori Nazionali Legnaro, 35020 Legnaro (Padova) Italy;6 CNISM and Dipartimento di Scienza dei Materiali, Università Milano-Bicocca, Via Cozzi 53, 20125 Milano, Italy

18:00 **HYDROGEN PASSIVATION OF BULK DEFECTS IN SILICON RST RIBBONS** **XP.8 50**
K. Derbouz1, S. Roques1, F. De Moro2, A. Slaoui1
1-Laboratoire ICUBE, CNRS-Université de Strasbourg, 23 rue du loess, F-67037 Strasbourg, France 2-SOLARFORCE, S.A. ; 1, rue du Dauphin; 38300 Bourgoin-Jallieu

18:00 **Electrically detected magnetic resonance study on defects in Si pn-junctions created by proton implantation** **XP.8 51**
Gernot Gruber(1,2), Peter Hadley(2), Markus Koch(3), Thomas Aichinger(4), Stefan Kirnstötter(2,4), Holger Schulze(4), Werner Schustereder(4)
(1) KAI GmbH, Europastrasse 8, 9500 Villach, Austria; (2) Inst. of Solid State Physics - Graz Univ. of Technology, Petersgasse 16, 8010 Graz, Austria; (3) Inst. of Experimental Physics - Graz Univ. of Technology, Petersgasse 16, 8010 Graz, Austria; (4) Infineon Technologies Austria, Siemensstrasse 2, 9500 Villach, Austria

18:00 **Passivation of acceptors and donors in silicon by atomic fluorine** **XP.8 52**
V. J. B. Torres1, J. Coutinho1, M. J. Rayson2, P. R. Briddon3,
1. I3N, Department of Physics, University of Aveiro, Campus Santiago, PT-3810-193 Aveiro, Portugal; 2. Department of Engineering Sciences and Mathematics, Luleå University of Technology, SE-Luleå S-97187, Sweden; 3. School of Electrical, Electronic and Computer Engineering, Newcastle University, Newcastle Upon Tyne NE1 7RU, UK;

18:00 **Processing-induced near-interfacial thermal donor generation in (100)Si/Si oxycarbide insulator structures revealed by electron spin resonance** **XP.8 53**
A. Stesmans, S. Iacovo, S. Nguyen, V. V. Afanas'ev
Department of Physics and Astronomy, University of Leuven, 3001 Leuven, Belgium

18:00 **Effect of total gas pressure on the sputtered hydrogenated amorphous silicon** **XP.8 54**
A. Fedala, A. Dad, M. Khefiani-Guellil, W. Habila, S. Tata
Equipe Couches Minces et Semiconducteurs, Laboratoire de Physique des Matériaux, Faculté de Physique, BP N°32, 16111 Bab- Ezzouar, USTHB, Alger, ALGERIA. Tel: 213 21 24 79 12, ext. 062; Fax: 213 21 24 73 44 e-mail: afedala@yahoo.fr

18:00 **High rate amorphous and crystalline silicon layers formation by pulsed DC magnetron sputtering deposition at elevated temperatures** **XP.8 55**
L. Bailey*, G. Proudfoot*, B. Mackenzie*, M. Cooke*, N. Andersen**, A. Karlsson***, M. Sunding***, A. Ulyashin***
*Oxford Instruments Plasma Technology, Yatton Bristol, BS49 4AP, UK **University of Oslo, Oslo, Norway ***SINTEF, Oslo, Norway

18:00 **MOSFET: An innovative production method** **XP.8 56**
(a)L. Ricardo, (a)G. Lavareda, (a,b)C. Nunes de Carvalho and (b,c)A. Amaral.
(a)Departamento de Ciência dos Materiais, FCT-UNL, Quinta da Torre, 2825-114 Caparica, Portugal, (b)ICEMS, (c)Departamento de Física, IST-UTL, Av. Rovisco Pais, 1049-001 Lisboa, Portugal

18:00 **Electrical and photovoltaic properties of self-assembled Ge nanodomes on Si(001)** **XP.8 57**
M. Kratzer1, C. Prehal1, M. Rubezhanska2, S. Kondratenko3, Y. Kozyrev2, C. Teichert1
1Institute of Physics, Montanuniversität Leoben, Franz Josef Straße 18, 8700 Leoben, Austria; 2O.O. Chuiko Institute of Surface Chemistry, National Academy of Sciences of Ukraine, Kiev, Ukraine; 3National Taras Shevchenko University, Physics Department, Kiev, Ukraine

18:00 **Annealing kinetics of formation of trivacancy-oxygen pairs in p-type Cz-silicon** **XP.8 58**
N. Ganagona, L. Vines, V.P. Markevich, E.V. Monakhov, and B.G. Svensson
Department of Physics/Centre for Materials Science and Nanotechnology, University of Oslo, PO Box 1048, Blindern, N-0316 Oslo, Norway; Photon Science Institute, The University of Manchester, Manchester M13 9PL, United Kingdom

18:00 **DLTS Characterization of H+ Implanted Silicon under Varying Annealing Conditions** **XP.8 59**
M. Jelinek(a), J. G. Laven(b), R. Job(c), H.-J. Schulze(b), W. Schustereder(a), S. Kirnstötter(a, d) M. Rommel(e) and L. Frey(e)
(a) Infineon Technologies Austria AG, 9500 Villach, Austria (b) Infineon Technologies AG, 81726 Munich, Germany (c) Dept.of Electrical Engineering and Computer Sciences, Muenster University of Applied Science, 48565 Steinfurt (d) Institute of Solid State Physics, Graz University of Technology, 8010 Graz (e) Chair of Electron Devices, FAU Erlangen-Nürnberg, 91058 Erlangen

Defects in Silicon : B. O. Kolbesen and V. Voronkov

08:30 **Oxygen Precipitation Investigated by Dynamical X-ray Diffraction** X.9 1
Johannes Will, Christoph Bergmann, Andreas Magerl
University Erlangen-Nürnberg

09:00 **Multiple vacancy species in silicon as evidenced by vacancy profiles installed by Rapid Thermal Annealing** X.9 2
V.V.Voronkov, R.Falster
SunEdison Merano Italy

09:15 **Infrared Defect Dynamics – He irradiation induced complexes in high quality Si crystal** X.9 3
N. Inoue, Y. Goto, T. Sugiyama, K. Watanabe, H. Seki and Y. Kawamura
Tokyo Univ. Agric. & Technol., Toyota Motor Co., Toyota Central R&D Labs., Inc., Systems Eng. Inc., Toray Res. Center Inc., Osaka Pref. Univ.

09:30 **Boron activation dynamics and defects formation in Si solid-phase during nanosecond laser irradiation** X.9 4
G. Fisicaro1, L. Pelaz2, M. Aboy2, P. Lopez2, M. Italia1, K. Huet3, F. Mazzamuto3, F. Cristiano4, Y. Qiu4, E. Bedel-Pereira4, N. Cherkashin5, M. Quillec6, and A. La Magna1
1- CNR IMM, Z.I VIII Strada 5 I -95121 Catania, Italy 2- Department of Electronics, University of Valladolid, 47011 Valladolid, Spain 3- Excico, 13-21 Quai des Gresillons, 92230 Gennevilliers, France 4- LAAS CNRS, 7 avenue du Colonel Roche, 31077 Toulouse, France 5- CEMES, CNRS UPR 8011 and Université de Toulouse, 29 rue Jeanne Marvig, 31055 Toulouse, France 6- Probion, 37 Rue de Fontenay, 92220 Bagneux, France

09:45 **An EBIC and SRP Study of High Temperature Thermal Donors in Proton Implanted p-Type Magnetic Czochralski Silicon** X.9 5
Martin Faccinelli (a), Stefan Kirnstoetter (a,b), Werner Schustereder (b), Peter Hadley (a)
(a) Graz University of Technology (b) Infineon Technologies Austria AG

10:00 **Coffee Break**

10:30 **Surface acoustic wave diagnosis of vacancy in boron doped silicon wafer** X.9 6
T. Goto1, K. Mitsumoto1, M. Akatsu1, S. Baba1, K. Okabe1, 2, R. Takasu1, Y. Nemoto1, Y. Furumura3, H. Saito2, K. Kashima2, and Y. Saito4
1Graduate School of Science and Technology, Niigata University, Niigata 950-2181, Japan 2GlobalWafers Japan Co., Ltd., Seirou Machi, 957-0197, Japan 3Philtech Inc., Bunkyo-ku, Tokyo 113-0033, Japan 4Toshiba Corp., Yokohama 225-8522, Japan

11:00 **Precipitation dynamics of oxygen in boron-doped CZ-silicon measured with dynamical X-ray diffraction** X.9 7
Christoph Bergmann, Alexander Groeschel, Johannes Will, Matthias Weisser, Andreas Magerl
Chair for Crystallography and Structural Physics, FAU Erlangen-Nuremberg, 91058 Erlangen, Germany

11:15 **Rapid thermal process based internal gettering in Czochralski silicon wafers: Adverse effect of grown-in oxygen precipitates** X.9 8
Jian Wang, Chao Gao, Peng Dong, Xiangyang Ma, Deren Yang
State Key Laboratory of Silicon Materials and Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China

11:30 **Oxygen-related defects in monocrystalline silicon for solar cell applications** X.9 9
E.S. Marstein a)*, R. Søndenå a), M. Juel b), M. M'Hamdi c) and Ø. Nielsen d)
a) Institute for Energy Technology, Instituttveien 18, NO-2007 Kjeller, Norway
b) SINTEF Materials and Chemistry, Box 4760 Sluppen, NO-7465 Trondheim, Norway c) SINTEF Materials and Chemistry, Box 124 Forskningsveien 1, NO-0314 Oslo, Norway d) NorSun AS, Sommerrogaten 13-15, NO-0255 Oslo, Norway

12:00 **Lunch Break**

Defects in Photovoltaics : E. S. Marstein and K. Sueoka

13:45 **Defects in quasi-crystalline silicon for photovoltaic application** X.10 1
Xuegong Yu, Deren Yang
State Key Lab of Silicon Materials and Department of Materials Science & Engineering

14:15 **Do nitrogen-related defects limit carrier lifetime in silicon for photovoltaics?** X.10 2
J.D. Murphy (1), M. Al-Amin (1), R.J. Falster (2), V.V. Voronkov (2), K. Bothe (3), V.P. Markevich (4), A.R. Peaker (4), M.J. Stavola (5), N.E. Grant (6), D.H. Macdonald (6), F.E. Rougieux (6)
(1) University of Warwick, UK (2) SunEdison, Italy (3) ISFH, Germany (4) University of Manchester, UK (5) Lehigh University, USA (6) Australian National University, Australia

14:30 **Radial distribution of iron precipitates in silicon crystals grown by Czochralski method from contaminated feedstock** X.10 3
Teimuraz Mchedlidze and Jörg Weber
Technische Universität Dresden, 01062 Dresden, Germany

14:45 **Donor and acceptor levels in highly-doped and compensated Si for photovoltaic application studied by donor-acceptor pair luminescence** X.10 4
Michio Tajima(1,2), Maxime Forster(3), Koji Tanaka(1,2), Hiroyuki Toyota(1), Atsushi Ogura(2)
(1) Institute of Space and Astronautical Science / JAXA, Sagamihara 252-5210, Japan (2) Meiji University, Kawasaki 241-8571, Japan (3) APOLLON SOLAR, 69002 Lyon, France

15:00 **Equilibrium defect concentration of lifetime-degrading defects in boron-doped Cz silicon** X.10 5
D. C. Walter (1), V.V.Voronkov (2), R. Falster (2), B. Lim (1), J. Schmidt (1)
(1) Institute for Solar Energy Research Hamelin (ISFH), Am Ohrberg 1, D-31860 Emmerthal, Germany; (2) SunEdison, Via Nazionale 59, 39012 Merano, Italy

15:15 **Defects in mono-like silicon ingots grown on low angle misoriented seeds for photovoltaic applications** X.10 6
Maria Tsoutsouva1; Vanessa Amaral de Oliveira2; Denis Camel2; Thu Nhi Tran Thi1; José Baruchel1; Benoit Marie2; Tamzin Lafford1
1 European Synchrotron Radiation Facility, BP 220, F-38043, Grenoble Cedex 9, France 2 CEA-INES, Savoie Technolac, F-73375, Le Bourget-du-Lac, France

15:30 **a-Si:H/c-Si heterojunction interface properties from Hall measurements of surface inversion layer** X.10 7
A.S. Gudovskikh (1), E.V. Nikitina (1), J.P.Kleider (2)
(1) St Petersburg Academic University-Nanotechnology Research and Education Centre of Russian Academy of Sciences, Hlopina str. 8/3, 194021, St.-Petersburg, Russia (2) LGEP; CNRS UMR 8507; SUPELEC ; Univ Paris-Sud ; UPMC Univ Paris 06 ; 11 rue Joliot-Curie, Plateau de Moulon, F-91192 Gif-sur-Yvette Cedex, France

15:45 **Coffee Break**

16:00 **PLENARY SESSION**

Ligh Emission : M. Tajima and H. Bracht

08:30 **Light emission and Doping in nanocrystalline Si/SiO2 multilayers** X.11 1
Jun Xu*, Peng Lu, Weiwei Mu, Wei Li and Kunji Chen
National Laboratory of Solid State Microstructures and School of Electronic Science and Engineering, Nanjing University, Nanjing 210093, China

09:00 **Intense blue luminescence from Ce-doped SiOx thin films** X.11 2
J. Weimmerskirch-Aubatin, M. Stoffel, X. Devaux, A. Bouché, M. Vergnat, H. Rinnert
Université de Lorraine, UMR CNRS 7198, Institut Jean Lamour, BP 70239, F-54506 Vandoeuvre-lès-Nancy

09:15 **The electroluminescence of Er-implanted MOS structures with different silicon oxide and silicon nitride environments** X.11 3
L. Rebohle 1, R. Wutzler 1, M. Braun 1, M. Helm 1, W. Skorupa 1, Y. Berencen 2, B. Garrido 2, D. Hiller 3
1 Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden - Rossendorf, Bautzner Landstrasse 400, 01328 Dresden, Germany; 2 Department of Electronics, University of Barcelona, C. de Marti i Franques 1, 08028 Barcelona, Spain; 3 IMTEK, Faculty of Engineering, Albert-Ludwigs-University Freiburg, Georges-Koehler-Allee 103, 79110 Freiburg, Germany

09:30 **Electroluminescence of Germanium-LEDs on Silicon** X.11 4
B. Schwartz, A. Klossek, M. Kittler, M. Oehme, E. Kasper, J. Schulze
Joint Laboratory IHP/BTU, BTU CS, Platz der Deutschen Einheit 1, D-03046 Cottbus, Germany; Joint Laboratory IHP/BTU, BTU CS, Platz der Deutschen Einheit 1, D-03046 Cottbus, Germany; Joint Laboratory IHP/BTU, BTU CS, Platz der Deutschen Einheit 1, D-03046 Cottbus, Germany, IHP microelectronics, Im Technologiepark 25, D-15236 Frankfurt (Oder), Germany; Institut für Halbleitertechnik (IHT), Univ. Stuttgart, Pfaffenwaldring 47, D-70569 Stuttgart, Germany; Institut für Halbleitertechnik (IHT), Univ. Stuttgart, Pfaffenwaldring 47, D-70569 Stuttgart, Germany; Institut für Halbleitertechnik (IHT), Univ. Stuttgart, Pfaffenwaldring 47, D-70569 Stuttgart, Germany

09:45 **Coffee Break**

Modeling and Ab Initio Calculations : C. Kaneta and S. Estreicher

10:15 **Stress and Doping Impact on Intrinsic Point Defect Behavior in Growing Single Crystal Silicon** X.12 1
Koji Sueoka1, Eiji Kamiyama1 and Jan Vanhellemont2
1 Department of Communication Engineering, Okayama Prefectural University, Japan 2 Department of Solid State Sciences, Ghent University, Belgium

10:45 **Molecular dynamics simulations on the oxidation of Si(100)/SiO2 interface: emissions and incorporations of Si-related species into the SiO2 and substrate** X.12 2
Norihiko Takahashi, Takahiro Yamasaki(*), and Chioko Kaneta
Fujitsu Laboratories Limited ((*)Present address : National Institute for Materials Science)

11:15 **One-dimensional interstitial chains in silicon** X.12 3
V.A. Borodin (1), M.G. Ganchenkova (2)
(1) NRC Kurchatov Institute, Moscow, 123182, Russia; (2) NRNU MEPhI, Kashirskoe Sh. 31, 115409, Moscow, Russia

11:30 **Ab initio high-throughput study of extrinsic point defect embedding enthalpies in Si and Ge** X.12 4
Michael Sluydts (1), Jan Vanhellemont (2), Veronique Van Speybroeck (1), Stefaan Cottenier (1)(3)
(1) Center for Molecular Modeling, Ghent University; (2) Department of Solid State Sciences, Ghent University; (3) Department of Materials Science and Engineering, Ghent University

11:45 **Atomistic picture of di-vacancy formation in Si** X.12 6
Eiji Kamiyama, Jan Vanhellemont, and Koji Sueoka
Okayama Prefectural University, Ghent University

12:00 **Lunch Break**

Doping, Implantation, and Gate Dielectrics : E. Simoen and W. Vandervorst

13:45 **Self- and dopant diffusion in silicon, germanium and its alloys** X.13 1
Hartmut Bracht
Institute of Materials Physics, University Münster, Wilhelm-Klemm-Str. 10, D-48149 Münster, Germany

14:15 **Advances in metrology for group IV alloys** X.13 2
Wilfried Vandervorst(1), Arul Kumar(1), Alexis Franquet, Bastien Douhard, Joris Delmotte, Thierry Conard and Roger Loo
Imec, Kapeldreef 75, B-3001 Leuven, Belgium (1)Also with Department of Physics and Astronomy, KULeuven, Celestijnenlaan 200D-bus 2418, 3001 Leuven,Belgium

14:45 **High Dose Proton Implantations into Silicon: A Combined EBIC, SRP and TEM Study** X.13 3
S. Kirnstoetter, M. Faccinelli, M. Jelinek, W. Schustereder, J. G. Laven, H.¬J. Schulze, P. Hadley
S. Kirnstoetter, M. Faccinelli, P. Hadley Institute of Solid State Physics, Graz University of Technology, Graz 8010, Austria M. Jelinek, W. Schustereder Infineon Technologies Austria AG, Villach 9500, Austria J. G. Laven, H.¬J. Schulze Infineon Technologies AG, Munich 81726, Germany

15:00 **Liquid phase epitaxy of Ge(1-x)Sn(x) alloy using ion-implantation and pulsed laser melting** X.13 4
Kun Gao, S. Prucnal, R. Hübner , W. Skorupa, M. Helm, Shengqiang Zhou
Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Institute of Ion Beam Physics and Materials Research, P.O. Box 510119, 01314 Dresden, Germany

15:15 **Electrical Properties of Ultrathin MBE-Grown MgO Dielectrics for Gate stack Applications** X.13 5
Bart Van Bilzen 1, Chen-Yi Su 1, Mariela Menghini 1, Jin Won Seo 2, Jean-Pierre Locquet 1
1Dept. of Physics and Astronomy, KU Leuven, Leuven, Belgium. 2 Dept. of Metallurgy and Materials Engineering, KU Leuven, Leuven, Belgium.

15:30 **Generation of Si dangling bond defects at Si/insulator interface induced by oxygen scavenging** X.13 6
F. Cerbu(1), A. P. D. Nguyen(1), J. Kepa(1), V. V. Afanas'ev(1), A. Stesmans(1)
(1) KULeuven;

15:45 **Long term reliability study of epitaxial neodymium-gadolinium oxides (NGO) on Si substrates for future group IV based CMOS devices** X.13 7
Kankat Ghosh1, S. Das1, A. Fissel2, H. J. Osten2 and Apurba Laha1
1Department of Electrical Engineering and Center of Excellence in Nanoelectronics, Indian Institute of Technology Bombay, Mumbai 400076, India 2Institute of Electronic Materials and Devices, Leibniz University Hannover, Schneiderberg 32, 30167 Hannover, Germany

16:00 **Coffee Break**

Defects in Group IV Semiconductors : V. Markevich and J. Murphy

16:30 **Small vacancy clusters and their complexes with oxygen and group-V impurity atoms in Si, Ge, and SiGe alloys** X.14 1
V.P. Markevich, A.R. Peaker, B. Hamilton, J. Coutinho, S.B. Lastovskii, L.I. Murin, N.V. Abrosimov, V.V. Litvinov
Photon Science Institute, The University of Manchester, Manchester M13 9PL, UK; Department of Physics & I3N, University of Aveiro, 3810-193 Aveiro, Portugal; Scientific-Practical Materials Research Center of NAS of Belarus, Minsk 220072, Belarus; Institute for Crystal Growth, D-12489 Berlin, Germany; Physics Faculty, Belarusian State University, Minsk 220050, Belarus

17:00 **Non-Contact high precision alternative to Hg-probe for dopant profiling in SiC** X.14 2
Andor Czett, Csaba Buday, Sasha Savtchouk, Dimitrij Marinskiy
Semilab Semiconductor Physics Laboratory; Semilab Semiconductor Physics Laboratory; Semilab SDI; Semilab SDI

17:15 **Effect of carbon on the production of the VO defect in electron-irradiated Si and its conversion to the VO2 defect** X.14 3
C. A. Londos1, E. N. Sgourou1, A. Chroneos2,3
1University of Athens, Solid State Physics Section, Panepistimiopolis Zografos, Athens 157 84, Greece 2Department of Materials, Imperial College London, London SW7 2AZ, UK 3Engineering and Innovation, The Open University, Milton Keynes MK7 6AA, United Kingdom

17:30 **Carrier and heat transport properties of polycrystalline GeSn films on SiO2** X.14 4
Noriyuki UCHIDA, Tatsuro Maeda, Ruben. R. Lieten, Jean-Pierre Locquet
Nanoelectronics Research Institute, Advance industrial science and technology; IMEC; Department of Physics and Astronomy, KU Leuven

17:45 **Deep-level transient spectroscopy study of quenched-in defects in germanium** X.14 5
S. H. Segers (1), J. Lauwaert (1), P. Clauws (1), F. Callens (1), J. Vanhellemont (1), E. Simoen (1,2) and H. Vrielinck (1)
(1) Department of Solid State Sciences, Ghent University, Krijgslaan 281 S1, B-9000 Ghent, Belgium (2) IMEC, Kapeldreef 75, B- Leuven, Belgium

Postersession 2 : S. Pizzini and D. Yang

18:00 **Enhancement of IR photoluminescence of beta-FeSi2 nanocrystals by Cu-doping and study of its mechanism** XP.15 1
Tomoaki Hirata1, Yuki Kawakubo1, Takahide Tatsumi1, Yuya Noguchi1, , Hiroyuki Kobayashi1, , Seiya Kagawa1, Tomohiro Nagatsuyu1, Ryotaro Iwamoto1, Kohei Shibahara1, Tatsuya Mizuki1, Kazumasa Narumi2, Seiji Sakai2, Yoshihito Maeda1,2
1Department of Computer Science and Electronics, Kyushu Institute of Technology, Kawazu 680-4, Iizuka, Fukuoka 820-8502, Japan, 2Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki 319-1195, Japan

18:00 **Hybrid density functional theory calculations to study G-centers in irradiated silicon** XP.15 2
H. Wang,1 A. Chroneos,2,3,a) C. A. Londos,4 E. N. Sgourou,4 and U. Schwingenschlögl1,b)
1PSE Division, KAUST, Thuwal 23955-6900, Saudi Arabia 2Engineering and Innovation, The Open University, Milton Keynes MK7 6AA, United Kingdom 3Department of Materials, Imperial College, London SW7 2AZ, United Kingdom 4University of Athens, Solid State Physics Section, Panepistimiopolis Zografos, Athens 157 84, Greece

18:00 **Terbium doped Silicon Nitride films for Light Emitting Diodes applications** XP.15 3
P. Benzo, L. Dumont, J. Cardin, C. Labbé and F. Gourbilleau
CIMAP, UMR CNRS/CEA/ENSICAEN/UCBN, 6 Boulevard Maréchal Juin, 14050 Caen Cedex 4, France

18:00 **Dimensional Dependence of the Gap Energy and Effective Mass in Group IV Nanostructures** XP.15 4
E. G. Barbagiovanni (a), D. J. Lockwood (b), R. N. Costa Filho (c)
(a) MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Universita di Catania, Catania 95123, Italy (b) Measurement Science and Standards, National Research Council, Ottawa, Ontario K1A 0R6, Canada (c) Departamento de Fisica, Universidade Federal do Ceara, Caixa Postal 6030, Campus do Pici, 60455-760 Fortaleza, Ceara, Brazil

18:00 **Comprehensive modeling of amorphization in Ge using Kinetic Monte Carlo** XP.15 5
José Luis Gomez-Selles, Ignacio Martin-Bragado
IMDEA Materials Institute, Getafe, Madrid Spain

18:00 **Optical Emission Characteristics of Strained Ge Nanostructures** XP.15 6
Samit K. Ray, R. Aluguri, S. Manna
Department of Physics , IIT Kharagpur 721 302, India e-mail : physkr@phy.iitkgp.ernet.in

18:00 **Fostered amplification of Raman yield in single Si nanocrystals** XP.15 7
Giuseppe Faraci 1, Giovanni Mannino 2, Alessandra Alberti 2, Rosa Ruggeri 2, and Agata R. Pennisi 1
1 Dipartimento di Fisica e Astronomia, Universit? di Catania; Via Santa Sofia 64, 95123 Catania, Italy 2 CNR-IMM, Catania, Italy

18:00 **A simple techniques to classify and distinguish the origin of photoluminescence from nanocrystalline silicon thin film** XP.15 8
Atif Mossad Ali1,2
1 Department of Physics, Faculty of Science, King Khalid University, Abha, Saudi Arabia 2 Department of Physics, Faculty of Science, Assiut University, Assiut, Egypt

18:00 **A simple fabrication of ultralong strained Ge nanobelts by hololithography and oxidation processes** XP.15 9
Cheng Li, Weifang Lu, Shihao Huang, Jianfang Xu, Jianyuan Wang, Hongkai Lai, Songyan Chen
Department of Physics, Semiconductor photonics research center, Xiamen University, Xiamen Fujian 361005, China

18:00 **First principles analysis on atomic configuration of group IV element in Ge crystal for solar cells** XP.15 10
Ryo Matsutani, Koji Sueoka, Eiji Kamiyama
Department of Communication Engineering, Okayama Prefectural University

18:00 **Basic study on energy band structure of group IV compound semiconductors for solar cell** XP.15 11
Ryo Suwa, Koji Sueoka, Eiji Kamiyama
Department of Communication Engineering Okayama Prefectural University

18:00 **Morphology and composition of Au and Au(Mn) catalysts on Ge(111)** XP.15 12
H. Zitouni (a,b), L. Vincent(c), A. Mehdaoui(a), C. Renard(c), G. Patriarch(d), K. D. Khoudja(b), N. Hakiki(b), L. Josien(a), E. Denys(a), D. Bouchier(c), C. Pirri(a)
(a)IS2M, Université de Haute Alsace, CNRS-UMR7361, 68057 Mulhouse, France (b)Laboratoire de Physique des Couches Minces et des Matériaux pour l'Electronique (LPCM2E) Université d'Oran, BP 1524 El'Mnaouer Oran 31100, Algérie (c) IEF, Université Paris-Sud, UMR 8622 and CNRS, Orsay, 91405 Orsay, France (d) Laboratoire de Photonique et Nanostructure UPR 20 Marcoussis, France

18:00 **Studies of the mechanism of stress applied to the plating film and the substrate of silicon delamination using simulation.** XP.15 13
Sang-hoon Lee, Chinho Park(*)
School of Chemical Engineering, Yeungnam University, 214-1 Dae-dong, Gyeongsan 712-749, Republic of Korea

18:00 **X-ray and ion beam investigations of SiC/Si epitaxial structure** XP.15 14
1 V.K. Egorov, E.V. Egorov, 2 S.A. Kukushkin, A.V. Osipov
1 IMT RAS, Chernogolovka, Moscow District, 142432 Russia 2 IPMech RAS, Saint-Petersburg, Russia

18:00 **Optimized Process Condition for Kerf-less Thin film** XP.15 15
JiNa Lee, JaeHak Jung*
School of Chemical Engineering, Yeungnam University

18:00 **Single Crystalline Beta-FeSi2 Nanowires: Growth and Their Physical Properties** XP.15 16
Chih-Yung Yang, Wei-Jie Huang, Kuo-Chang Lu
Department of Materials Science and Engineering, National Cheng Kung University, Tainan 701, Taiwan

18:00 **GeSi nanostructured films with structure and electrical properties tailored by annealing** XP.15 17
Magdalena Lidia Ciurea, Ana-Maria Lepadatu, Ionel Stavarache, Valentin Serban Teodorescu, Iuliana Pasuk
National Institute of Materials Physics, 105bis Atomistilor Street, 077125 Magurele, Romania

18:00 **Conductance and magnetoresistance of Si whiskers** XP.15 18
A.A. Druzhinin (1, 2), I.P. Ostrovskii (1, 2), Yu.N. Khoverko (1, 2), S.I.Nichkalo (1, 2), R.M. Koretskyy (1, 2), Iu.R.Kogut (1)
1 - National Lviv Polytechnic University, Lviv, Ukraine; 2 - International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland

18:00 **Metastable Ge nanocrystalline in SiGe matrix for photovoltaic** XP.15 19
Yao-Tsung Ouyang, Chien-Hao Su, Jenq-Yang Chang, Shao-Liang Cheng, Po-Chen Lin, Albert T. Wu
Ph.D. candidate; Ph.D.; Professor; Professor; Ph.D. student; Professor

18:00 **Viability of the use of an a-SiC:H multilayer device in a domestic VLC application** **XP.15 20**
P. Louro1,2, V. Silva1,2,M. A Vieira1,2, M. Vieira1,2,3
1Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1949-014 Lisboa, Portugal Tel: +351 21 8317290, Fax: +351 21 8317114, mv@isel.ipl.pt ; 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal

18:00 **Theory describing the creation of silicon nanodots by annealing of thin silicon layers** **XP.15 21**
Maciek Korzec, Marion Dziwnik, Barbara Wagner
TU Berlin

18:00 **Efficient light extraction from 2D photonic crystal slabs with embedded Si nanocrystals** **XP.15 22**
Lukas Ondic, Marian Varga, Karel Hruska, Alexander Kromka, Ivan Pelant
Institute of Physics, ASCR, Prague, Czech Republic

18:00 **Silicon and Germanium-rich oxide films grown by RF magnetron sputtering: structural, optical and luminescent properties** **XP.15 23**
L. Khomenkova1, N. Korsunska1, V. Kladko1, X. Portier2, P. Marie2, F. Gourbilleau2, M. Carrada3, C. Bonafos3, J. Jedrzejewski4, I.Balberg4
1) V. Lashkaryov Institute of Semiconductor Physics, 45 Pr. Nauky, Kyiv 03028, Ukraine; 2) CIMAP/CEA/UMR CNRS 6252/ENSICAEN/UCBN, 6 Blvd. Maréchal Juin, 14050 Caen cedex 4, France; 3) CEMES/CNRS, Université de Toulouse,29 rue J. Marvig 31055 Toulouse Cedex 04; 4) The Racah Institute of Physics, The Hebrew University, Jerusalem 91904, Israel

18:00 **Wavelength-tunable photoluminescence of SixGeyO1-x-y thin films** **XP.15 24**
Wei-Chin Wang, Chih-Cheng Kao*
Department of Electro-Optical Engineering Southern Taiwan University of Science and Technology

18:00 **Three-dimensional impurity distribution at sigma-3 and sigma- 9 grain boundaries in silicon** **XP.15 25**
Yutaka Ohno, Kaihei Inoue, Shunya Ninomiya, Kentaro Kutsukake, Ichiro Yonenaga, Naoki Ebisawa, Hisashi Takamizawa, Yasuo Shimizu, Koji Inoue, Yasuyoshi Nagai, Hideto Yoshida, Seiji Takeda
Institute for Materials Research, Tohoku University; The Oarai Center, Institute for Materials Research, Tohoku University; The Institute of Scientific and Industrial Research, Osaka University

18:00 **Non-classical light emission from defect centres silicon carbide** **XP.15 26**
Brett. C. Johnson 1, Alexander Lohrmann 2, Naoya Iwamoto 3, Timothy J. Karle 2, Stefania Castelletto 4, Takeshi Ohshima 2 and Jeffrey C. McCallum 1
1 Centre for Quantum Computation and Communication Technology, School of Physics, University of Melbourne, Victoria 3010, Australia, 2 School of Physics, University of Melbourne, Victoria 3010, Australia, 3 SemiConductor Analysis and Radiation Effects Group, Japan Atomic Energy Agency, 1233 Watanuki, Takasaki, Gunma 370-1292, Japan 4 School of Aerospace, Mechanical and Manufacturing Engineering, RMIT University, Melbourne, Victoria 3000, Australia

18:00 **Silicon clathrate fabricated as a new photovoltaic material** **XP.15 27**
T. Kume1, F. Ohashi1, T. Ban1, K. Sakai2, H. Suzuki3, A. Fukuyama3, T. Ikari3, and S. Nonomura1
1Faculty of Engineering, Gifu University, 1-1 Yanagido, Gifu, Japan; 2Center for Collaborative Research & Community Cooperation, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki, Japan; 3Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki, Japan;

18:00 **Simulation of symmetric and asymmetric tilt grain boundaries in silicon with intrinsic and impurity defects** **XP.15 28**
Vitaly Yu. Lazebnykh, Andrey S. Mysovsky
83, Lermontova str, Irkutsk state technical university,Irkutsk, 664074, Russia; 83, Lermontova str, Irkutsk state technical university, Irkutsk, 664074, Russia I Vinogradov Institute of Geochemistry SB RAS, 1A, Favorskiy St., PO Box 304, Irkutsk, 650033, Russia

18:00 **a-Si:H/c-Si heterojunction interface based on top-down silicon nanowires: formation and characterization** **XP.15 29**
I.A. Morozov(1), A.S. Gudovskikh(1), D.A. Kudryashov(1), E.V. Nikitina, V. Sivakov(2), F. Talkenberg(2), A. Schleusener(2)
(1)St Petersburg Academic University-Nanotechnology Research and Education Centre of Russian Academy of Sciences, Hlopina str. 8/3, 194021, St.-Petersburg, Russia;(2) Leibniz Institute of Photonic Technology, Albert Einstein Str. 9, 07745 Jena, Germany

18:00 **Photoluminescent Diagnostics of Nonradiative Recombination in Silicon Nanowires Prepared by Metal-Assisted Chemical Etching** **XP.15 30**
K.A. Gonchar1, L.A. Osminkina1, A.I. Efimova1, L.A. Golovan1, V.Yu. Timoshenko1, F. Talkenberg2, V.A. Sivakov2
1 Lomonosov Moscow State University, Physics Department, 119991 Moscow, Russia; 2 Leibniz Institute of Photonic Technology, D-07745 Jena, Germany

18:00 **Intraband transitions in butyl-terminated Si quantum dots** **XP.15 31**
Chris de Weerd, Katerina Dohnalova, Tom Gregorkiewicz
UvA-WZI

18:00 **Bistability of the carbon-substitutional-carbon-interstitial (CsCi) defect in silicon: A hybrid functional study** **XP.15 32**
Cecil N M Ouma; Walter E Meyer
Department of Physics, University of Pretoria, Private Bag X20, Pretoria, 0002, South Africa

18:00 **Band structure engineering of germanium nanowires using strain and n-type doping** **XP.15 33**
K. Guilloy, N. Pauc, P. Gentile, Q. Benoît à la Guillaume, V. Calvo, E. Robin
SiNaPS, SP2M, UMR-E CEA/UJF-Grenoble 1, INAC, Grenoble, France; LEMMA, SP2M, UMR-E CEA/UJF-Grenoble 1, INAC, Grenoble, France

18:00 **Atomic scale simulation of Si/SiO2 boundary conductance** **XP.15 34**
P.-A. Francioso, P. L. Palla, E. Lampin and F. Cleri
IEMN UMR CNRS 8520 and University of Lille - CS 60069 - 59625 Villeneuve d'Ascq Cedex- France

18:00 **In-Situ Photoluminescence Monitoring of Silicon Nanowire Growth during Metal Assisted Chemical Etching** **XP.15 35**
V.A. Georgobiani (a), K.A. Gonchar (a), S.A. Sokolov (a), L.A. Osminkina (a), V.Yu. Timoshenko (a), U. Jerol (b), S.M. Greil (b), J. Rappich (b)
(a) Lomonosov Moscow State University, Physics Department, 119991 Moscow, Russia; (b) Helmholtz-Zentrum Berlin für Materialien und Energie, Inst. für Si-Photovoltaik, D-12489 Berlin, Germany

18:00 **First-principles study of the current-voltage characteristics of strained Sn nanoribbons** **XP.15 36**
B. van den Broek[1]; M. Houssa [1]; E. Scalise [1]; G. Pourtois[2][3]; V.V. Afanas'ev [1]; A. Stesmans [1]
[1] KU Leuven; [2] imec; [3] Univeristy of Antwerp

18:00 **Blue emission of Ge nanostructures in porous aluminum oxide matrix** **XP.15 37**
Rishat Valeev, Artemy Beltyukov, Dmitry Surnin, Raushania Zakirova
Physical-Technical Institute of Ural Brunch of RAS, Izhevsk, Russia; Udmurt State University, Izhevsk, Russia

18:00 **kinetic superlattice Monte Carlo (KslMC) study of the first stages growth of 3C-SiC on misoriented <11-20> and <1-100> 6H-SiC substrates by CVD growth** **XP.15 38**
M. Camarda, A. La Magna, F. La Via
IMM-CNR, Z.I. VIII Strada, 5, 95121, Catania, Italy

18:00 **Outdoor characterization of amorphous silicon based photovoltaic modules: comparison of 5 different module structures** **XP.15 39**
T. Mambrini, A. Migan-Dubois, C. Longeaud, M. Elyaakoubi
T. Mambrini, A. Migan-Dubois, C. Longeaud: LGEP UMR8507,CNRS, Supelec, Sorbonne Université UPMC paris 06, Université Paris Sud 11, 11 rue Joliot Curie 91192 Gif-sur-Yvette Cedex, France; M. Elyaakoubi: Solsia, 3 rue Leon Blum 91120 Palaiseau France

18:00 **Silicon Obtained by MILC and SILC Techniques: Application for Top-Down Litography Nanostructures** **XP.15 40**
M. Thomas, R. Rogel, L. Pichon
Institut d'Electronique et des Télécommunications de Rennes, Département Microélectronique et Microcapteurs, UMR CNRS 6164, Université de Rennes 1, campus de Beaulieu, 263 avenue du général Leclerc, 35042 Rennes cedex, France

18:00 **Electrical activity of titanium hydrogen complexes in silicon: revisiting the density functional perspective** **XP.15 41**
P. Santos (1), J. Coutinho (1), M. J. Rayson (2), P. R. Briddon (3)
1. Department of Physics & I3N, University of Aveiro, Campus Santiago, 3810-193 Aveiro, Portugal; 2. Department of Chemistry, University of Surrey, Guildford GU2 7XH, United Kingdom; 3. School of Electrical, Electronic and Computer Engineering, Newcastle University, Newcastle Upon Tyne NE1 7RU, United Kingdom

18:00 **Raman analysis of silicon and germanium nanowires** **XP.15 42**
M. Israel, 1, 2 A. Moreac, 2 R. Rogel, 1 J. P. Landesman, 2 and L. Pichon1
1 Institute of Electronics and Telecommunications of Rennes, University of Rennes 1, UMR 6164, 35042 Rennes, France; 2 Institute of Physics of Rennes, University of Rennes 1, UMR 6251, 35042 Rennes, France

18:00 **Molybdenum nano-precipitates in silicon: a TEM and DLTS study** **XP.15 43**
S. Leonard, V.P. Markevich, A.R. Peaker, B. Hamilton, K. Youssef, G. Rozgonyi
Photon Science Institute, The University of Manchester, Manchester M13 9PL, United Kingdom: North Carolina State University, Materials Science, Suite 3070, Centennial EB-1 Raleigh, NC 27695-7907, USA

18:00 **Si QDs FORMATION IN DIELECTRIC MATRIX: A DEFECT STUDY** **XP.15 44**
B. Pivac1, P. Dubcek1, V. Janicki1, R. Slunjski1, J. Dasovic1, S. Bernstorff2
1 R. Boskovic Institute, P.O. Box 180, Zagreb, Croatia; 2 Elettra-Sincrotrone Trieste, SS 14, km 163.5, Basovizza (TS), Italy

18:00 **Variation and non homogeneity of photoluminescence spectrum in InAs QDs embedded in In0.15Ga0.85As QWs and its dependence on the temperature and excitation power** **XP.15 45**
I.J. Guerrero Moreno(a),T. V. Torchynska(b), A. Vivas Hernández(a)
(a)ESIME-Instituto Politécnico Nacional, México D. F. 07738, México (b)ESFM-Instituto Politécnico Nacional, México D. F. 07738, México.

18:00 **First investigations of Dark I-V Characteristics measured on P-type Silicon Thin Film deposited by PECVD and HWCVD on N+ -type crystalline Silicon for Photovoltaic Applications** **XP.15 46**
B. Bouziane1, N. El Ghoul2, B. Zebentout1, S.Tizi1, R. Djemai2, Z. Benamara1 and K. Khirouni2
1Laboratoire de MicroElectronique Appliqué, Faculté de Technologie, Université de Sidi Bel Abbes (Algérie). E-mail : b_zebentout@yahoo.fr 2Laboratoire de Physique des Matériaux et des Nanomatériaux appliquée à l'Environnement (LaPhyMNE), Faculté de Gabès (Tunisie).

18:00 **Numerical Approach of Inhomogeneous Silicon Thin Film on the Electrical Conductivity and Capacitance behavior for TFTs Applications** **XP.15 47**
H.Tayoub1, B. Zebentout1, Z. Benamara1, N.ElGhoul2, R. Djemai2 and K. Khirouni2
1Laboratoire de MicroElectronique Appliqué, Faculté de Technologie, Université de Sidi Bel Abbes (Algérie). E-mail : b_zebentout@yahoo.fr 2Laboratoire de Physique des Matériaux et des Nanomatériaux appliquée à l'Environnement (LaPhyMNE), Faculté de Gabès (Tunisie).

18:00 **Emission Colour Tuning of Highly Luminescent Germanium Nanocrystals** **XP.15 48**
Darragh P. Carolan, Hugh Doyle
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

18:00 **Strain-engineered SiGe nanomembranes on Porous Silicon stressor** **XP.15 49**
Jean-No?l Aqua (a), Isabelle Berbezier, Mansour Aouassa, Luc Favre, St?phanie Escaoubas, Adrien Gouy?, Antoine Ronda (b)
(a) Institut des Nanosciences de Paris, UPMC, 4 pl. Jussieu, 75005 Paris (b) CNRS - AMU - IM2NP, Avenue Escadrille Normandie Niemen - Case 142, 13997 Marseille

18:00 **Efficient one-pot synthesis of highly photoluminescent alkyl-functionalised germanium nanocrystals** **XP.15 50**
Darragh P. Carolan, Hugh Doyle
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

18:00 **Ordered arrays of gold catalysts by focused ion beam patterning assisted dewetting** **XP.15 51**
Abdelmalek Benkouider(a), Antoine Ronda(a), Luc Favre(a), Adrien Gouye(a), Elise Ruis Gomes(a), Johann Osmond(b), Anne Delobbe(c), Pierre Sudraud(c), Isabelle Berbezier(a)
(a) IM2NP-CNRS (UMR 7334), Aix-Marseille University, 13397 Marseille Cedex 20 France, (b) Instituteof Photonic Sciences, ICFO, E-08860 Castelldefels, Barcelona, Spain (c) Orsay Physics, 95 Avenue des Monts Aur?liens-ZA Saint-Charles, 13710 Fuveau, France

18:00 **A simulation study of Micromorph tandem solar cell with a microcrystalline Tunnel Recombination Junction** **XP.15 52**
F. Maachou, B.Zebentout, A. Bensmain and Z.Benamara
Faculty of Technology, University of Sidi Bel Abbes, Algeria

18:00 **2DHG mobility anisotropy along and ortogonal to the <110> direction in a selectively B-doped RP-CVD strained Ge quantum wells on Si0.15Ge0.85/(100)Si** **XP.15 53**
A.H.A. Hassan 1),2), O.A. Mironov 1), 3, R.J.H. Morris 1), R.Beanland 1), A. Dobbie 1), and D.R. Leadley 1)
1) Department of Physics, University of Warwick Coventry, CV4 7AL, UK, 2) Department of Physics, Tripoli University, Tripoli, Libya. 3) International Laboratory of High Magnetic Fields and Low Temperatures, 53-421 Wroclaw, Poland

18:00 **Effect of Pd Schottky barrier deposition on radiation induced defects in Si and Ge** **XP.15 54**
F. D. Auret, S. M. M. Coelho, W. E. Meyer and J. M. Nel
Physics Department, University of Pretoria, Pretoria, South Africa.

Nanowires : J. Xu and K. Dohnalova

08:30 **Arrays of Silicon Nanowires as New Perspective for Novel Silicon Applications** — X.16 1
A. Cavallini, S. Carapezzii, A. Castaldini
Department of Physics and Astronomy, University of Bologna, Viale Berti Pichat 6/2, Bologna, Italy

09:00 **Group-IV Semiconductor Nanowires: Synthesis, Optical Properties and Applications** — X.16 2
C.D'andrea1, P. Musumeci1;3, B. Fazio2, M. J. Lo Faro1;2,G. Franzò1, S. Boninelli1, G. Impellizzeri1, A. Terrasi1;3, F. Iacona1, F. Priolo1;3;4, A. Irrera2
1MATIS IMM CNR, Catania, Via Santa Sofia 64, I-95123 2. IPCF CNR Messina, Via stagno Dalcontres 37, Messina 98158 3.Dipartimento di fisica ed astronomia, università di catania, via santa sofia, 64 I-95123 4. Scuola Superiore di Catania, Via Valdisavoia, 9, Catania 95123

09:15 **Allotrope heterostructured Ge nanowires : new Opportunities for more than Moore applications** — X.16 3
Laetitia Vincent, Gilles Patriarche*, G?raldine Hallais, Charles Renard, Cyrille Gard?s, Daniel Bouchier
Univ Paris-Sud, Institut d'Electronique Fondamentale, UMR 8622, Orsay, F-91405 and CNRS, Orsay, F-91405; * CNRS, Laboratoire de Photonique et de Nanostructures, UPR20 , Site Alcatel de Marcoussis, Route de Nozay, Marcoussis, F-91460

09:30 **Silicon-Germanium Nanowires: chemistry and physics in play, from basic principles to advanced applications** — X.16 4
Michele Amato (1), Maurizia Palummo (2), Riccardo Rurali (3) and Stefano Ossicini (4)
(1) Institut d'Electronique Fondamentale, UMR8622, CNRS, Université Paris-Sud, 91405 Orsay, France (2) Dipartimento di Fisica, European Theoretical Spectroscopy Facility (ETSF), Università di Roma, Tor Vergata, Via della Ricerca Scientifica 1, 00133 Roma, Italy (3) Institut de Ciència de Materials de Barcelona (CSIC), Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain (4) Dipartimento di Scienze e Metodi dell'Ingegneria, Università di Modena e Reggio Emilia, Via Amendola 2 Pad. Morselli, I-42100 Reggie Emilia, Italy

09:45 **In situ X-ray scattering investigations on SiGe nanowires: growth, strain and dance** — X.16 5
Tao Zhou, V. Cantelli, O. Ulrich, O. Geaymond, N. Blanc and G. Renaud
CEA-Grenoble; CEA-Grenoble; CEA-Grenoble; Institut Neel; Institut Neel; CEA-Grenoble

10:00 **Coffee Break**

Nanowires, Nanocrystals, Quantum Dots, and Quantum Wells : A. Cavallini and D. Yang

10:15 **Silicon nanoparticles with direct bandgap – "green" nanotechnology for emerging applications** — X.17 1
K. Dohnalova, A. Poddubny, T. Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098XH Amsterdam, The Netherlands; Ioffe Physical-Technical Institute RAS, 26 Polytechnicheskaya, 194021 Saint-Petersburg, Russia; Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098XH Amsterdam, The Netherlands

10:30 **Selective Growth and Ordering of SiGe Nanowires for Band Gap Engineering** — X.17 2
A. Benkouider(b), A. Ronda(b), A. Gouye(b), C. Herrier(b), L. Favre(b), D. Lockwood (b), N. Rowell (b), A. Delobbe(a), P. Sudraud(a), I. Berbezier(b)
(a) CNRS - AMU - IM2NP, Campus de St J?r?me, Case 142, 13397 Marseille CEDEX 20, France (b) Measurement Science and Standards, National Research Council, Ottawa Ontario K1A 0R6, Canada (c) Orsay Physics, 13170 Fuveau, France

10:45 **Controlling the morphology and properties of SiGe nanowires by VS growth** — X.17 3
Jong Woon Lee1, Eun Kyung Lee2, Junho Lee3, Won-Jae Joo4, Sung Jin Kim2, Sungwoo Hwang4, Byoung Lyong Choi4 , Dongmok Whang1
1. Sungkyunkwan University, School of Advanced Materials Science and Engineering, Korea 2. Samsung Electronics, Samsung Advanced Institute of Technology, CAE Group, Korea 3. Samsung Electronics, Samsung Advanced Institute of Technology, AE Group, Korea 4. Samsung Electronics, Samsung Advanced Institute of Technology, Nano Electronics Lab, Korea

11:00 **High-intensity room-temperature light emission from crystalline/amorphous Ge quantum dots** — X.17 4
M. Brehm 1&2, M. Grydlik 1&2
1 Institute of Semiconductor and Solid State Physics, Johannes Kepler University Linz, Austria 2 Institute for Integrative Nanosciences, IFW Dresden, Germany

11:15 **Tuning the growth properties of Ge quantum dot lattices in amorphous oxides by matrix type** — X.17 5
M. Buljan1; M. Jerčinović1; Z. Siketić1; I. Bogdanović-Radović1; I. Delač Marion2; M. Kralj2; M. Ivanda1; G. Dra?ić3; S. Bernstorff4; N. Radić1
1 Ruđer Bo?ković Institute, Bijenička c. 54, 10000 Zagreb, Croatia; 2 Institute of Physics, Bijenička cesta 46 ,10000 Zagreb, Croatia; 3 Jo?ef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia; 4 Elettra-Sincrotrone Trieste, 34149 Basovizza, Italy;

11:30 **Extremely high room temperature mobility of 2D holes in a compressive strained Ge quantum well heterostructure grown by RP-CVD on a standard Si(001) substrate** — X.17 6
Maksym Myronov, Christopher Morrison, John Halpin, Stephen Rhead, Jamie Foronda, David Leadley
Department of Physics, The University of Warwick, Coventry CV4 7AL, UK

11:45 **Temperature dependence of ion-beam mixing in crystalline and amorphous germanium isotope multilayer structures** — X.17 7
Manuel Radek, Hartmut Bracht, Matthias Posselt, Bartosz Liedke, Bernd Schmidt, Dominique Bougeard
Institute of Materials Physics, Westfälische Wilhelms-Universität Münster, 48149 Münster, Germany; Institute of Materials Physics, Westfälische Wilhelms-Universität Münster, 48149 Münster, Germany; Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstraße 400, D-01328 Dresden, Germany; Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstraße 400, D-01328 Dresden, Germany; Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstraße 400, D-01328 Dresden, Germany; Institut für Experimentelle und Angewandte Physik, 93040 Regensburg, Germany

12:00 **Closing Remarks**

12:10 **Lunch**

SYMPOSIUM Y

Advanced materials and characterization techniques for solar cells II

Symposium Organizers:

Salvo Mirabella, CNR-IMM, Catania, Italy

Ivan Gordon, IMEC, Leuven, Belgium

Jan Valenta, Charles University, Prague 2, Czech Republic

Raşit Turan, METU, Ankara, Turkey

Harry Atwater, Caltech, Pasadena,USA

26 May 2014

09:15 **Symposium introduction** **Y1 1**
S. Mirabella
CNR-IMM

09:30 **State-of-the-art and future challenges of Photovoltaics** **Y1 2**
Ivan Gordon
IMEC

10:00 **Break**

Light management I : I. Gordon

10:30 **Engineering gratings for light trapping in photovoltaics** **Y2 1**
Thomas Krauss
York University, UK

11:00 **Light localization and absorption in nanotextured thin-film silicon solar cells** **Y2 2**
M. Aeschlimann 1, T. Brixner 2,3, D. Differt 4, U. Heinzmann 4,5, M. Hensen 4, C. Kramer 2, F. Luekermann 4,5, P. Melchior 1, W. Pfeiffer 4, M. Piecuch 1, C. Schneider 1, H. Stiebig 4,5, C. Strüber 4, P. Thielen 1,6
1 Fachbereich Physik and Research Center OPTIMAS, Technische Universitaet Kaiserslautern, Erwin-Schroedinger-Str. 46, 67663 Kaiserslautern, Germany; 2 Institut für Physikalische und Theoretische Chemie, Universitaet Wuerzburg, Am Hubland, 97074 Wuerzburg, Germany; 3 Roentgen Research Center for Complex Material Systems (RCCM), Universitaet Wuerzburg, Am Hubland, 97074 Wuerzburg, Germany; 4 Fakultaet für Physik, Universitaet Bielefeld, Universitaetsstr. 25, 33615 Bielefeld, Germany; 5 Institut für Innovationstransfer an der Universitaet Bielefeld, Universitaetsstr. 25, 33615 Bielefeld, Germany 6Graduate School of Excellence Materials Science in Mainz, Gottlieb-Daimler-Str. 47, 67663 Kaiserslautern, Germany

11:30 **Photonic structures for light trapping in thin-film solar cells** **Y2 3**
Lucio Claudio Andreani, Angelo Bozzola, Piotr Kowalczewski, Marco Liscidini
Physics Department, University of Pavia, Italy

11:45 **Textured tandem solar cells with spectrally selective multilayer intermediate reflectors** **Y2 4**
A. Hoffmann, U.W. Paetzold, C. Zhang, K. Bittkau, U.Rau
IEK 5 - Photovoltaik, Forschungszentrum Jülich

12:00 **Low-cost high-Haze transparent layers based on ZnO nanorods for solar cells** **Y2 5**
V. Strano(1), R.G.Urso (2), I. Crupi (1), F.Simone (1), E.Ciliberto (2), S.Mirabella (1)
(1) MATIS CNR-IMM and Dipartimento di Fisica e Astronomia Università di Catania; (2) Dipartimento di Chimica Università di Catania

12:15 **Metal Assisted Chemical Etching of GaAs for Light Management in Photovoltaic Devices** **Y2 6**
Paola Lova 1,2, Valentina Robbiano 3, Franco Cacialli 3, Davide Comoretto 4, and Cesare Soci 2.
1 Energy Institute at NTU (ERI@N), Interdisciplinary Graduate School, Nanyang Technological University, 50 Nanyang Avenue, 639798, Singapore; 2 School of Physical and Mathematical Sciences, Division of Physics and Applied Physics, Nanyang technological University, 21 Nanyang Link, 637371, Singapore; 3 Department of Physics and Astronomy and London Centre for Nanotechnology, University College London, Gower Street, London WC1E 6BT, United Kingdom; 4 Dipartimento di Chimica e Chimica Industriale, Università degli studi di Genova, via Dodecaneso 31, 16146 Genoa, Italy

12:30 **Lunch**

Light management II : T. Krauss

14:00 **Spectral shaping usind Si nanocrystals and Er ions** **Y3 1**
T. Gregorkiewicz
Van der Waals - Zeeman Institute, University of Amsterdam

14:30 **Photon up-conversion with Si nanocrystals embedded in SiO2 matrix** **Y3 2**
E. M. L. D. de Jong and T. Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, Netherlands

14:45 **CO-DOPED Si NCS FOR PHOTON DOWN-CONVERSION** **Y3 3**
N.X. Chung, R. Limpens, B. Bruhn, T. Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098XH Amsterdam, the Netherlands

15:00 **Ultra-compact nanophotonic structures for down-conversion and down-shifting enhancement** **Y3 4**
T.Deschamps1,2, E.Drouard1,2, A.Pereira3, R.Peretti1,2, L.Lalouat1,2, A.Guille3, M.Le Coz1,4, E.Fourmond1,4, A.Fave1,4, R. Orobtchouk1,4, B.Moine3, C.Seassal1,2,4
1 Université de Lyon, INL UMR5270 CNRS-INSA-ECL-UCBL 2 Ecole Centrale de Lyon, 36 avenue Guy de Collongue, 69134 Ecully Cedex, France 3 Université de Lyon, ILM UMR5306 CNRS-UCBL, 69622 Villeurbanne, France 4 INSA de Lyon, 7 avenue jean Capelle, 69621 Villeurbanne, France

15:15 **Optical extraction of hot carrier energy from silicon nanocrystals** **Y3 5**
S. Saeed, K. Dohnalova, E. M. L. D. de Jong, T. Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands

15:30 **Structural and Optical Properties of Nd doped SnO2 powder and thin films prepared by sol gel method** **Y3 6**
K. Bouras1*, J.- L. Rehspringer2, G. Schmerber2, G. Ferblantier1, S. Colis2, A. Dinia2 and A. Slaoui1
1ICube, CNRS-Université de Strasbourg, 23 rue du Loess, BP 20 CR, 67037 Strasbourg Cedex 2, France 2IPCMS, CNRS-Université de Strasbourg, UMR7504, 23 rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France

15:45 **ITO-free anode with plasmonic silver nanoparticles for high efficient polymer solar cells** **Y3 7**
P. Morvillo, A. De Girolamo Del Mauro, R. Ricciardi, G. Nenna, R. Diana, C. Minarini
ENEA, P.le E. Fermi, 1, 80055 Portici (NA), Italy

16:00 **Break**

Poster session I : A. Terrasi and R. Turan

16:15 **Pulsed Laser Deposited Nanocrystalline Cu2O thin films for Photovoltaic applications** **YP1 1**
S.F.U. Farhad*1, 2 , David Cherns1
1School of Physics, University of Bristol, HH Wills Physics Laboratory, Tyndall Avenue, Bristol BS8 1TL, United Kingdom. 2Industrial Physics Division, BCSIR Laboratories, Dhaka 1250; Bangladesh Council of Scientific and Industrial Research, Bangladesh.

16:15 **A novel method for the growth of Cu2O/ZnO heterojunctions** **YP1 2**
Sakellis I.1, Moschos I.1, Giamini S.1, Chandrinou C.1, Travlos A.1, Kim C.-Y.2, Lee J.-H.2, Kim J.-G.2 and Boukos N.1
1 National Center for Scientific Research 'Demokritos', IAMPPNM, GR 15310 Agia Paraskevi Attikis, Athens, Greece; 2 Korea Basic Science Institute, Daejeon 305-806, Korea

16:15 **Nitrogen doping into copper oxide thin films for solar cells** **YP1 3**
P. M. Sberna1,2, I. Crupi2, V. Privitera2, F. Simone1, M. Miritello2
1 Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy 2 MATIS CNR-IMM, via S. Sofia 64, 95123 Catania, Italy

16:15 **Properties of the thin-film solar cells with heterojunctions CuInGaSe2-Cd1-xZnxS** **YP1 4**
M.A. Jafarov, E.F. Nasirov
Baku State University, Baku 1045, Z.Khalilov st.23, Azerbaijan

16:15 **In-Situ Characterization During Thermal Processing of CIGS Nanoparticle Films** **YP1 5**
Vanessa L. Pool, M. Imteyaz Ahmad, C. Jackson Stolle, Taylor B. Harvey, Brian A. Korgel, Michael F. Toney
1 The University of Texas at Austin, McKetta Department of Chemical Engineering, Texas Materials Institute, Center for Nano- and Molecular Science, Austin, TX 2SSRL, Materials Science Division, SLAC National Accelerator Laboratory, Menlo Park, CA

16:15 **Preparation of structural controlled Zn(O,S) buffer layers by solution process and the high efficiency Cu(In,Ga)Se2 solar cells.** **YP1 6**
Tetsuhito Okamoto, Hironori Komaki, Junji Sasano, Shigeru Niki, Masanobu Izaki
Toyohashi University of Technology, National Institute of Advanced Industrial Science and Technology (AIST)

16:15 **In-situ monitoring of the degradation of CIGS solar cells** **YP1 7**
M. Theelen, H. Steijvers, Z. Vroon, N. Barreau, M. Zeman
M. Theelen1,2,3; H. Steijvers1; Z. Vroon1; N. Barreau4; M. Zeman2 1 TNO, dept. Thin Film Technology - De Rondom 1, 5612 AP, Eindhoven, The Netherlands 2 Delft University of Technology, Photovoltaic Materials and Devices, Mekelweg 4, 2628 CD Delft, The Netherlands 3 Materials innovation institute (M2i), Mekelweg 2 2628 CD DELFT, The Netherlands 4 Institut des Matériaux Jean Rouxel (IMN)—UMR 6502, Université de Nantes, CNRS, 2 rue de la Houssinière B.P. 32229, 44322 Nantes Cedex 3 France

16:15 **Combinatorial Study of Fe2O3–Nb2O5 Library for All-Oxide Photovoltaics** **YP1 8**
David A Keller, Klimentiy Shimanovich, Hannah-Noa Barad, Assaf Y Anderson, Yaniv Bouhadana, Adam Ginsburg, Eli Rosh-Hodesh, Koushik Majhi, David Sriker, Sven Rühle, Arie Zaban
Bar-Ilan University

16:15 **Mesoscopic Nickel Oxide/Organometallic Perovskite Heterojunction Solar Cells** **YP1 9**
Kuo-Chin Wang, Po-Shen, Shena, Peter Chen
Department of Photonics, National Cheng Kung University, Tainan, Taiwan 701

16:15 **Charge trapping and intraband relaxation in colloidal quantum dot and perovskite photovoltaic materials** **YP1 10**
Artem A. Bakulin, Huib J. Bakker, Zhenhua Sun, Zhuoying Chen
FOM institute AMOLF, Science Park 104, Amsterdam 1098 XG, The Netherlands; Laboratoire de Physique et d'Etude des Matériaux, ESPCI/CNRS/UPMC UMR 8213, 10 rue Vauquelin, 75005 Paris, France;

16:15 **A comparative study of bulk and semibulk structures in InGaN-based solar cell** **YP1 11**
W. El Huni [1], A. Migan [1.2], Z. Djebbour [1.3], S. Sundaram [4], K. Pantzas [4.5], J-P. Salvestrini [6.7], P.L. Voss [4.5], A. Ougazzaden [4.5]
[1]LGEP, UMR8507, CNRS, Supélec, U. Paris-sud 11, UPMC, 11 Rue Joliot-Curie, 91192 Gif-sur-Yvette cedex, France; [2]Université Pierre et Marie Curie, 4 Place Jussieu, 75005 Paris, France; [3]Département des Sciences Physiques, UVSQ, 45 Avenue des États-Unis, 78035 Versailles, France; [4]CNRS, UMI2958 Georgia-tech-CNRS, Metz, France; [5]Georgia Institute of Technology, 2–3 Rue Marconi, 57070 Metz, France; [6]Université de Lorraine, LMOPS, EA4423, 2 Rue E. Belin, 57070 Metz, France; [7]Supélec, LMOPS, EA4423, 2 Rue E. Belin, 57070 Metz, France

16:15 **Improved conversion efficiency of solar cells based on InGaN/GaN multiple-quantum wells** **YP1 12**
Anna Mukhtarova, Sirona Valdueza-Felip, Louis Grenet, Catherine Bougerol, Christophe Durand, Eva Monroy, Joel Eymery
CEA-Grenoble, INAC/SP2M/NPSC, 17 rue des Martyrs, 38054 Grenoble, France CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble, France CNRS-Institut Néel, 25 rue des Martyrs, 38042 Grenoble, France

16:15 **Characterization of Sputtered Cu-Zn-Sn-Te Thin Films for Device Applications** **YP1 13**
Hasan Huseyin Gullu 1-3, Emre Coskun 1-2-3, Ozge Bayrakli 1-3, Idris Candan 1-3, Mehmet Parlak 1-3
1-Department of Physics, Middle East Technical University (METU), Ankara 06800, Turkey 2-Department of Physics, Çanakkale Onsekiz Mart University, Çanakkale 17100 Turkey 3-Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey

16:15 **Charge Carrier Dynamics in Iron Pyrite Films** **YP1 14**
Yu Bi , Arjan J. Houtepen, Gilles Dennler, Tom J. Savenije.
Yu Bi, Arjan J. Houtepen, and Tom J. Savenije Optoelectronic Materials Section, Department of Chemical Engineering, Delft University of Technology, Julianalaan 136, 2628 BL Delft, the Netherlands; Gilles Dennler, IMRA Europe, 220 rue Albert Caquot BP 213, 06904 Sophia Antipolis, France.

16:15 **Double-Band Anticrossing in GaAsSbN — Third-Generation Photovoltaic Materials** **YP1 15**
Kuang-I Lin,1,* Kuo-Lung Lin,2 Bo-Wei Wang,3 and Hao-Hsiung Lin3
1Center for Micro/Nano Science and Technology, National Cheng Kung University, Tainan, Taiwan; 2Department of Electrical Engineering, National Chung Hsing University, Taichung, Taiwan; 3Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; Funding: NSC102-2112-M-006-018 and NSC102-2221-E-002-191-MY3

16:15 **(Sr,Ba)(Si,Ge)2 for solar-cell applications: first-principles insights** **YP1 16**
Mukesh Kumar<1>, Naoto Umezawa<1> and Motoharu Imai<2>
<1> Environmental Remediation Materials Unit, National Institute for Materials Science, Ibaraki 305-0044, Japan <2> Superconducting Properties Unit, National Institute for Materials Science, Ibaraki 305-0047, Japan

16:15 **Designs for novel double-junction solar cell devices and investigation of their TPV and CPV applications** **YP1 17**
M. Emziane
Solar Energy Materials and Devices Laboratory Masdar Institute of Science and Technology Masdar City, PO Box 54224, Abu Dhabi, UAE.

16:15 **Epitaxial lift-off technology of GaAs multijunction solar cells** **YP1 18**
E. Dumiszewska (1), P. Knyps (1), M. Wesolowski (1), A. Krajewska (1), W. Strupinski (1), J. Kalbarczyk (1)
(1) Institue of Electronic Materials Technology, Warsaw, Poland

16:15 **Morphology control in alpha-sexithiophene (a-6T)/fullerene (C60) organic solar cell devices** **YP1 19**
André Luis F. Cauduro, Michal Radziwon, Horst-Günter Rubahn, and Morten Madsen.
NanoSYD, Mads Clausen Institute, University of Southern Denmark, Alsion 2, 6400-Sønderborg, Denmark.

16:15 **Design, Synthesis, and Photovoltaic Performance of Benzothiadiazole-based Conjugated Polymers** **YP1 20**
Yoon-Jung Na, Oh Young Kim, Seok-Ho Hwang*
Department of Polymer Science & Engineering, Dankook University

16:15 **X-ray spectra and electronic structure of P3HT/PBCM photovoltaic interfaces** **YP1 21**
Amy L. Pitman1, I.S. Zhidkov2,3, A.I. Kukharenko2,3, A. Kucherov2,3, E.Z. Kurmaev3, A. Moewes1, S. Achilleas4, S.A. Choulis4 and S.O. Cholakh3
1Department of Physics and Engineering Physics, University of Saskatchewan, 116 Science Place, Saskatoon, Saskatchewan, Canada, S7N 5E2; 2Institute of Metal Physics, Russian Academy of Sciences-Ural Division, 620990 Yekaterinburg, Russia; 3Ural Federal University, 19 Mira Str., 620002 Yekaterinburg, Russia; 4Department of Mechanical Engineering and Material Science and Engineering, Cyprus University of Technology, 3603 Limassol, Cyprus

16:15 **Nanoscale dimples for improved absorption in organic solar cells** **YP1 22**
Goszczak A. J., Rubahn H.G., Madsen M.
Mads Clausen Institute, University of Southern Denmark, Alsion 2, S?nderborg, Denmark

16:15 **Visualization of Lateral Phase Separation in Polymer:Fullerene Solar Cells by Quantitative Evaluation of Luminescence Imaging Measurements** **YP1 23**
Marco Seeland1, Christian Kaestner1, Daniel A. M. Egbe2, Harald Hoppe1
1: Institute of Physics, Technische Universität Ilmenau, Langewiesener Str. 22, D-98693 Ilmenau, Germany; 2: Linz Institute for Organic Solar Cells, Johannes Kepler University Linz, A-4040 Linz, Austria

16:15 **Front contact CdSnO-TiO2 Stoichiometry Gradients and Cation Interdiffusion effects in dye-Sensitized Solar Cells probed by Angle Resolved X-Ray Photoelectron Spectroscopy** **YP1 24**
G. Salvinelli1, G. Drera1, A. Braga23, C. Baratto3, L. Sangaletti1
1 I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, 25121, Brescia, Italy; 2 Nanochemistry Department, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy; 3 CNR-IDASC SENSOR Lab and Department of Information Engineering, Brescia University, Via Valotti 9, 25131 Brescia, Italy;

16:15 **High-resolution depth-resolved Raman and EBSD imaging on focused ion beam wedges in Si-based thin film solar cells** **YP1 25**
G. Sarau1, B. Hoffmann1, P. Klement2, S. Geissendoerfer2, S. Christiansen1
1. Max Planck Institute for the Science of Light, Günther-Scharowsky-Str. 1, 91058 Erlangen, Germany; 2. NEXT ENERGY, EWE Research Centre for Energy Technology, Carl-von-Ossietzky-Str. 15, 26129 Oldenburg, Germany

16:15 **Formation of near-to-junction and bulk traps during crystalline silicon solar cell fabrication process using iron contaminated feedstock** **YP1 26**
Teimuraz Mchedlidze,1 Christian Möller,2 Kevin Lauer,2 and Jörg Weber1
1Technische Universität Dresden, 01062 Dresden, Germany; 2CiS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH, Konrad-Zuse-Str. 14, 99099 Erfurt, Germany

16:15 **Light-trapping measured by Raman spectroscopy in thin film silicon solar cells** **YP1 27**
M. Ledinský (1,2), K. Ganzerová (1), A. Vetushka (1), A. Fejfar (1), G. Bugnon (2), F. Meillaud (2) and C. Ballif (2)
(1) Institute of Physics, Academy of Sciences of the Czech Republic, v. v. i., Cukrovarnická 10, 162 00 Prague, Czech Republic (2) Photovoltaics and Thin Film Electronics Laboratory, École Polytechnique Fédérale de Lausanne (EPFL), Rue de la Maladière 71, CH-2000 Neuchâtel, Switzerland

16:15 **Investigation of laser fired rear-side point contacts on laser-crystallized silicon thin-film solar cells by conductive probe atomic force microscopy** **YP1 28**
Orman Gref1, Jon Sandström1, Moshe Weizman2, Holger Rhein3, Stefan Gall3, Rutger Schlatmann2, Christian Boit1, Felice Friedrich1
1 Technische Universität Berlin, Semiconductor Devices Division / PVcomB, Sekr. E4, Einsteinufer 19, 10587 Berlin, Germany; 2 University of Applied Sciences (HTW) Berlin / PVcomB, Schwarzschildstr. 3, 12489 Berlin, Germany; 3 Helmholtz-Zentrum Berlin für Materialien und Energie (HZB), Silicon Photovoltaics / PVcomB, Kekulestr. 5, 12489 Berlin, Germany

16:15 **Modification of a-Si:H films via non-linear femtosecond laser pulse absorption** **YP1 29**
B. Soleymanzadeh 1, W. Beyer 2,3, F. Luekermann 1, W. Pfeiffer 1, H. Stiebig 1,4
1. Molecular and Surface Physics, University of Bielefeld, D-33615 Bielefeld, Germany; 2. Institut fuer Silizium-Photovoltaik, HZB, Kekulestrasse 5, D-12489 Berlin, Germany; 3. IEK5-Photovoltaik, Forschungszentrum Juelich GmbH, D-52425 J?lich, Germany; 4. Institut fuer Innovationstransfer an der Universitaet Bielefeld, Universitaetsstr. 25, D-33615 Bielefeld, Germany

16:15 **Thin-film silicon solar cell and module analysis by electroluminescence** **YP1 30**
H. Predatsch 1, U. Heinzmann 1, H. Stiebig 1,2
1. Molecular and Surface Physics, University of Bielefeld, D-33615 Bielefeld, Germany; 2. Institut für Innovationstransfer an der Universitaet Bielefeld, Universitaetsstr. 25, D-33615 Bielefeld, Germany

16:15 **Surface and ultrathin layers absorptance spectroscopy for solar cells** **YP1 31**
J. Holovský (1), N. Neykova (1, 2), M. Vaněček (1), S. De Wolf (3), C. Ballif (3)
(1) Institute of Physics, ASCR v. v. i. , Cukrovarnická 10, 16200 Prague, Czech Republic ; (2) Czech Technical University in Prague, Faculty of Nuclear Sciences and Physical Engineering, Trojanova 13, 120 00 Prague, Czech Republic; (3) EPFL-IMT-PVLab, Rue de la Maladière 71b, CP 526 CH-2002 Neuchâtel, Switzerland

16:15 **Buried interfaces in thin-film silicon solar cells as revealed by soft and hard x-rays** **YP1 32**
M. Bär,1,2,3 D. Gerlach,1,4 M. Wimmer,1 R.G. Wilks,1 L. Weinhardt,3,5,6 R. Félix,1 F. Ruske,1 K. Lips,1 J. Hüpkes,7 M. Blum,3,8 C. Lupulescu,1,9 F. Kronast,1 M. Gorgoi,1 W. Yang,8 C. Heske,3,5,6,10 W. Eberhardt,1,9 and B. Rech1
1Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 14109 Berlin, Germany; 2Institut für Physik und Chemie, Brandenburgische Technische Universität Cottbus-Senftenberg, 03046 Cottbus, Germany; 3Department of Chemistry, University of Nevada, Las Vegas, Las Vegas, NV 89154-4003; 4National Institute for Materials Science, Tsukuba, Ibaraki 305-0044, Japan; 5ANKA Synchrotron Radiation Facility, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany; 6Institute for Photon Science and Synchrotron Radiation, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany; 7IEK5 – Photovoltaics, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany; 8Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA 94720; 9Institute for Optics and Atomic Physics, Technische Universität Berlin, 10623 Berlin, Germany; 10Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology, 76128 Karlsruhe, Germany

16:15 **Absolute radiometric calibration of the VIS/NIR micro-spectroscopy apparatus for electro- and photo-luminescence characterizations of solar cells** **YP1 33**
Jan Valenta
Charles University in Prague, Department of Chemical Physics & Optics, Faculty of Mathematics & Physics, Prague, Czechia

16:15 **High speed spectroscopic ellipsometry technique for on-line monitoring in large area solar cell production** **YP1 34**
C. Major1, G. Juhasz1, P. Petrik1, Z. G. Horvath2, M. Fried1,3
1. Institute for Technical Physics and Materials Science, Research Centre for Natural Sciences (MTA TTK MFA), H-1525 Budapest, POB 49, Hungary 2. Institute for Solid State Physics and Optics, Wigner Research Centre for Physics, Hungarian Academy of Sciences 3. Doctoral School of Molecular – and Nanotechnologies, Faculty of Information Technology, University of Pannonia, Egyetem u.10, Veszprém, H-8200, Hungary

16:15 **Influence of growth parameters and rapid thermal annealing on the vacancy concentration in MBE-grown GaAsBi** **YP1 35**
N. Segercrantz, D. Vial, F. Tuomisto, J. Slotte, J. Puustinen and M. Guina
Department of Applied Physics, Aalto University, P.O. Box 14100, FI-00076 Aalto, Finland; Department of Applied Physics, Aalto University, P.O. Box 14100, FI-00076 Aalto, Finland; Department of Applied Physics, Aalto University, P.O. Box 14100, FI-00076 Aalto, Finland; Department of Applied Physics, Aalto University, P.O. Box 14100, FI-00076 Aalto, Finland; Optoelectronics Research Centre, Tampere University of Technology, P.O. Box 692, FI-33101, Tampere, Finland; Optoelectronics Research Centre, Tampere University of Technology, P.O. Box 692, FI-33101, Tampere, Finland

16:15 **In situ observation of strain relaxation during growth interruption in lattice-mismatched III-V heteroepitaxy** **YP1 36**
Y. Ohshita1), T. Nishi1), D. Kodera1), K. Ikeda1), K. Shimomura1), H. Suzuki2), T. Sasaki3), I. Kamiya1) and M. Takahasi3)
(1)Toyota Technological Institute (2)University of Miyazaki (3)Japan Atomic Energy Agency

16:15 **A novel nanocrystal activated Schottky barrier solar cell** **YP1 37**
David Jacques
Doctoral Training Centre in Low Carbon Technologies, Energy Building, Faculty of Engineering, University of Leeds, Leeds LS2 9JT, U.K.

16:15 **Time resolved spectroscopy of GaxIn1-xP-GaAs double-junction solar cell** **YP1 38**
Fang Liu , S.J. Xu
Fang Liu,Department of physics, The University of Hong Kong; S.J. Xu, Department of Physics, The University of Hong Kong

16:15 **Preparation of Thin Films for CdS Nanodipole PV Devices** **YP1 39**
Fang Huang, Xiangxin Liu, Biao Yang, Hui Li Junfeng Han, Marie-paule Besland
The Key Laboratory of Solar Thermal Energy and Photovoltaic System, Institute of Electrical Engineering, Chiness Academy of Sciences; Institut des Mat?riaux Jean Rouxel (IMN), Universit? de Nantes, UMR CNRS;

16:15 **II and IV generations of PV structures based on zinc oxide** **YP1 40**
R. Pietruszka1, G. Luka1, B. S. Witkowski1, L. Wachnicki1, S. Gieraltowska1, E. Zielony2, P. Bieganski2, E. Płaczek-Popko2, M. Godlewski1,3
1Institute of Physics, Polish Academy of Sciences, Warsaw, Poland 2Institute of Physics, Wroclaw University of Technology, Wroclaw, Poland; 3 Department of Mathematics and Natural Sciences College of Science, Cardinal Stefan Wyszynski University, Warsaw, Poland

16:15 **Time resolved photocurrent spectra of GaxIn1-xP-GaAs double-junction solar cells** **YP1 41**
Fang Liu, Z. Deng, J. Q. Ning, S. J. Xu
Department of Physics and HKU-Shenzhen Institute of Research and Innovation (HKU-SIRI), The University of Hong Kong, Pokfulam Road, Hong Kong, China

16:15 **Spray pyrolysis deposition of SnxSy thin films** **YP1 42**
S. Polivtseva1, I. Oja Acik1, A. Mere1, V. Mikli2, M. Krunks1
1 Tallinn University of Technology, Department of Materials Science, Laboratory of Thin Film Chemical Technologies, 19086 Tallinn, Estonia; 2 Tallinn University of Technology, Department of Materials Science, Chair of Semiconductor Materials Technology, 19086 Tallinn, Estonia

16:15 **Electronic and Structural Properties of Cu3BiS3, a Semiconductor for the Absorber Layer of Sustainable Thin Film Solar Cell** **YP1 43**
M.V. Yakushev1,2; P. Maiello3; T. Raadik4; M.J Shaw1; P.R. Edwards1; J. Krustok4; A.V. Mudryi1,4; I. Forbes3; and R.W. Martin1
1Department of Physics, SUPA, University of Strathclyde, Glasgow, G4 0NG, UK; 2Academy of Science of Russia and URFU, Ekaterinburg, Russia; 3Northumbria Photovoltaics Applications Centre, Northumbria University, Newcastle upon Tyne, UK; 4Tallinn University of Technology, Tallinn, Estonia; 5Scientific-Practical Material Research Centre of the National Academy of Science of Belarus, Minsk, Belarus

16:15 **Defect characterization in GaPNAs solar cells** **YP1 44**
A.I. Baranov, A.S. Gudovskikh, K.S. Zelentsov, E.V. Nikitina, A.Yu. Egorov
St Petersburg Academic University-Nanotechnology Research and Education Centre of Russian Academy of Sciences, Hlopina str. 8/3, 194021, St.-Petersburg, Russia

27 May 2014

Light management III : T. Gregorkiewicz

08:30 **Nanophotonic light trapping for high efficiency solar cells** **Y4 1**
Kylie Catchpole
Australian National University

09:00 **Impact of plasmon-assisted light trapping on photocurrent enhancement in thin film a-Si:H solar cells** **Y4 2**
Seweryn Morawiec1,2, Manuel J. Mendes1, Sergej A. Filonovich3, Tiago Mateus3, Salvatore Mirabella1, Hugo Águas3, Isabel Ferreira3, Francesca Simone2, Elvira Fortunato3, Rodrigo Martins3, Francesco Priolo1,2,4, and Isodiana Crupi1
1 MATIS IMM-CNR, via S. Sofia 64, I-95123 Catania, Italy; 2 Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, I-95123 Catania, Italy; 3 CENIMAT/I3N, Departamento de Ciência dos Materiais, and CEMOP/UNINOVA, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal; 4 Scuola Superiore di Catania, Università di Catania, Via Valdisavoia 9, 95123 Catania, Italy

09:15 **Fabrication of plasmonic nanoparticles with controlled size and surface coverage for light trapping in solar cells** **Y4 3**
J. Ortiz Gonzalez, T.S. Frenkel, R. Santbergen, T.V. Pfeiffer, H. Tan, A. Schmidt-Ott, M. Zeman, A.H.M. Smets
Photovoltaic Materials and Devices, Delft University of Technology, the Netherlands; Materials for Energy Conversion and Storage, Delft University of Technology, the Netherlands

09:30 **Plasmonic and dielectric structures for thin-film solar cells - an experimental comparison** **Y4 4**
C. S Schuster (1), S. Morawiec (2), M. J Mendes (2), P. Kowalczewski (3), M. Patrini (3), E. R Martins (4), L. Lewis (5), I. Crupi (2), F. Priolo (2,6), L. Andreani (3), T. F Krauss (1)
(1) Department of Physics, University of York, York, YO10 5DD, UK (2) MATIS CNR-IMM and Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy (3) Department of Physics, University of Pavia, Via Bassi 6, 27100 Pavia, Italy (4) School of Physics and Astronomy, SUPA, University of St Andrews, St. Andrews, KY16 9SS, UK (5) Photonics Device Dynamics Group, Tyndall National Institute, Lee Maltings, Cork, Ireland (6) Scuola Superiore di Catania, Università di Catania, via Valdisavoia 9, 95123 Catania, Italy

09:45 **Effect of SiO2 Dielectric Spacer Layer on the Excitation of Localized Plasmon Resonance of Silver Nanoparticles for Potential Integration in c-Si Solar Cells** **Y4 5**
Hisham Nasser, Firat Es, Alpan Bek, Mehmet Can Gunendi, Oguz Gulseren, Rasit Turan
Hisham Nasser: Micro and Nanotechnology Graduate Program and The Center for Solar Energy Research and Applications (G?NAM), Middle East Technical University; Firat Es: Micro and Nanotechnology Graduate Program and The Center for Solar Energy Research and Applications (G?NAM), Middle East Technical University; Alpan Bek: Department of Physics and The Center for Solar Energy Research and Applications (G?NAM), Middle East Technical University; Mehmet Can Gunendi: Department of Physics, Bilkent University; Oguz Gulseren: Department of Physics, Bilkent University; Rasit Turan: Department of Physics and The Center for Solar Energy Research and Applications (G?NAM), Middle East Technical University

10:00 **Best Poster Award (for poster session I)**

10:10 **Break**

Advanced concepts I : K. Catchpole

10:30 **Toward a rational path to Earth-abundant solar-cell device improvement** **Y5 1**
Tonio Buonassisi
Massachusetts Institute of Technology

11:00 **The effect of interface quality on the performance of ZnO/Cu2O heterojunction solar cells** — Y5 2
Y. Ievskaya1, R. Hoye1, K. Musselman2 and J.L. MacManus-Driscoll1
1, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 2, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom.

11:15 **Open-Circuit Voltage Losses and Conduction Band Alignment in Cuprous Oxide Photovoltaics** — Y5 3
Riley E. Brandt, Yun S. Lee, Niall Mangan, Jian V. Li, Matthew Young, Tonio Buonassisi
Massachusetts Institute of Technology, Cambridge, MA (USA); National Renewable Energy Laboratory, Golden, CO (USA)

11:30 **Dynamic Photocurrent Measurements and Modelling of Quasi 1D Semiconductor Arrays** — Y5 4
Kieren Bradley, David Cherns, David Fermin, Martin Cryan
University of Bristol, University of Bristol, University of Bristol, University of Bristol

11:45 **Combinatorial Absorbers for All-Oxide Photovoltaics** — Y5 5
Assaf Y. Anderson, Hannah-Noa Barad, Adam Ginsburg, David A Keller, Klimentiy Shimanovich, David Sriker, Koushik Majhi, Yaniv Bouhadana and Arie Zaban
Department of Chemistry, Center for Nanotechnology & Advanced Materials, Bar Ilan University, 52900 Ramat Gan, Israel

12:00 **Band gap modification of ZnO and ZnS through solid solution formation for applications in photocatalysis** — Y5 6
.J.N. Hart, M. Cutini, N. L. Allan
School of Materials Science and Engineering, UNSW Australia, UNSW, NSW, Australia; School of Chemistry, University of Bristol, Bristol, United Kingdom; School of Chemistry, University of Bristol, Bristol, United Kingdom

12:15 **Temperature dependent current-voltage characteristics and photovoltaic parameters of semi-transparent ZnO/NiO pn-heterojunctions** — Y5 7
Robert Karsthof, Holger von Wenckstern, Marius Grundmann
Universit?t Leipzig, Institut f?r Experimentelle Physik II, Linn?str. 5, 04103 Leipzig, Germany

12:30 **Lunch**

Advanced concepts II : T. Buonassisi

14:00 **Kesterites: a challenging material for solar cells** — Y6 1
Susanne Siebentritt
University of Luxembourg

14:30 **Carbon-Doublebond-Free Inorganic Printed Perovskite Solar Cells** — Y6 2
Seigo ITO
University of Hyogo

15:00 **Halogen Bond Passivation of Organometal-Halide Perovskite Solar Cells** — Y6 3
Antonio Abate, Henry J. Snaith
Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford, OX1 3PU, United Kingdom

15:15 **Defect passivation by Cd treatment in Cu2ZnSnSe4 and Cu(InGa)Se2 solar cells** — Y6 4
K. Ben Messaoud, M. Buffiere, G. Brammertz, H. ElAnzeery, S. oueslati, M. Meuris, M. Amlouk, J. Poortmans
KACST-Intel Consortium Center of Excellence in Nano-manufacturing Applications (CENA), Riyadh, KSA ; imec division IMOMEC – partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium ; Institute for Material Research (IMO) Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium ; Unité de Physique des Dispositifs à Semiconducteurs Department of Physics, Faculty of Sciences of Tunis, El Manar, Tunisia ; Department of Physics, Faculty of Sciences of Bizerte, Tunisia ; Department of Electrical Engineering, KU Leuven, Kasteelpark Arenberg 10, 3001 Heverlee, Belgium ; imec – partner in Solliance, Kapeldreef 75, 3001 Leuven, Belgium ; Microelectronics System Design department, Nile University, Cairo, Egypt

15:30 **Charge separation at small organic molecule/CuInSe2 hybrid interfaces and the influence of sodium** — Y6 5
N. von Morzé, S. Fengler, T. Dittrich, S. Wiesner, T. Münchenberg, C. A. Kaufmann, M. Rusu, M. Ch. Lux-Steiner
Bereich Solarenergieforschung, Helmholtz-Zentrum Berlin für Materialien und Energie, Lise-Meitner Campus, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

15:45 **Influence of the binder content on the properties of printed CuInSe2 solar cells** — Y6 6
M. Buffiere1,2,3*, A.E. Zaghi2,3,4, N. Lenaers2,3,4, M. Batuk5, S. Khelifi6, J. Drijkoningen7,8, V. Afanasiev9, J. Kepa9, A. Stesmans9, J. Hadermann5, J. D'Haen7,8, J. Manca7,8, J. Vleugels9, M. Meuris7,8, J. Poortmans1,2
1 Department of Electrical Engineering (ESAT), KU Leuven, Kasteelpark Arenberg 10, 3001 Heverlee, Belgium 2 imec- partner in Solliance, Kapeldreef 75, 3001 Leuven, Belgium 3 SIM vzw, Technologiepark 935, 9052 Zwijnaarde, Belgium 4 Department of Metallurgy and Materials Engineering (MTM), KU Leuven, Kasteelpark 44, 3001 Heverlee, Belgium 5 Electron Microscopy for Materials Science (EMAT), University of Antwerp, Groenenborgerlaan 171, 2020 Antwerp, Belgium 6 Electronics and Information Systems department (ELIS), University of Gent, Sint-Pietersnieuwstraat 41, 9000 Gent, Belgium 7 imec division IMOMEC - partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium 8 Institute for Material Research (IMO) Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium 9 Department of Physics and Astronomy (FYS), KU Leuven, Celestijnenlaan 200D, 3001 Leuven, Belgium

16:00 **Break**

Poster session II : S. Christiansen and J. Valenta

16:15 **Efficient energy transfer from ZnO to Nd3+ ions in Nd-doped ZnO films deposited by magnetron reactive sputtering** — YP2 1
M. Balestrieri (1), G. Ferblantier (2), S. Colis (1), G. Schmerber (1), M. Ziegler (1), M. Gallart (1), D. Muller (2), P. Gilliot (1), A. Slaoui (2) and A. Dinia (1)
(1) Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, CNRS UMR 7504, 23 rue du Lœss, B.P. 43, F-67034 Strasbourg Cedex 2, France; (2) ICube, Université de Strasbourg, CNRS UMR 7357, 23 rue du Lœss, B.P. 20, F-67037 Strasbourg Cedex 2, France

16:15 **Influence of annealing methods on the properties of ZnO:Er:Yb up-converters** — YP2 2
Marta Lluscà, Julià Lopez-Vidrier, Isabel Sánchez, Aldrin Antony, Sara Lauzurica, Carlos Molpeceres, Sergi Hernández, Blas Garrido, Joan Bertomeu
Universitat de Barcelona; Indian Institute of Technology Bombay, Universidad Politécnica de Madrid.

16:15 **Study of Tb3+-Yb3+ doped Silicon Nitride frequency conversion layers for Solar Cell Applications** — YP2 3
L. Dumont*, P. Benzo*, J. Cardin*, C. Labbé*, I-S Yu□, F. Gourbilleau*
* CIMAP CNRS/CEA/ENSICAEN/UCBN, 6 Boulevard Maréchal Juin, 14050 Caen Cedex 4, France □ Department of Materials Science and Engineering, National Dong Hwa University, Da Hsueh Rd, Shoufeng, Hualien 97401,Taiwan

16:15 **A quantitative study of ZnO materials as possible down-shifters for Si solar cells** — YP2 4
Umme Aiman Mahmood, Keivan Sedhigi, Benjamin Riedmueller, Ulrich Herr
Institute for Micro- and Nanomaterials, Ulm University, D-89081 Ulm, Germany

16:15 **Down-conversion vs. antireflective properties of the rare earth doped TiO2 ? SiO2 binary system** — YP2 5
M. Drev1,2, U. Opara Kra?ovec2, Andrej Čampa2, M. Topič2
1CBS Institute, Prijateljeva cesta 12, Trebnje SI8210, Slovenia. 2Faculty of Electrical Engineering, Tr?a?ka 25, SI1000 Ljubljana.

16:15 **Luminescent solar concentrators based on anthracene/tetracene molecular cocrystals** — YP2 6
Gianmarco Griffini, Luigi Brambilla, Marinella Levi, Chiara Castiglioni, Mirella Del Zoppo, Stefano Turri
Department of Chemistry, Materials and Chemical Engineering «Giulio Natta» of Politecnico di Milano (Italy)

16:15 **Improved durability of down-converting luminescent solar concentrators based on fluoropolymers** YP2 7
Gianmarco Griffini, Marinella Levi, Stefano Turri
Department of Chemistry, Materials and Chemical Engineering «Giulio Natta» of Politecnico di Milano (Italy)

16:15 **Low-cost and Flexible Nanocone Anti-Reflection Films with Self-Cleaning Function for High-Efficiency Photovoltaics** YP2 8
Qingfeng Lin,1 Kwong-Hoi Tsui,1 Hungtao Chou,2 Qianpeng Zhang,1 Huiying Fu,1 Pengfei Qi,2 and Zhiyong Fan1*
1Department of Electronic and Computer Engineering, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China SAR; 2 Clean Energy International, 46535 Fremont Blvd, Fremont, CA 94538, USA.

16:15 **Patterned nanostructures for ultrathin crystalline silicon photovoltaics** YP2 9
Yunae Cho (1), Minji Gwon (1), Dong-Wook Kim *(1), Joondong Kim (2)
(1) Department. of Physics, Ewha Womans University, Seoul, 120-750, Korea; (2) Department of Electrical Engineering, Incheon National University, Incheon 406-772, Korea

16:15 **Advanced Light trapping Approaches using ICP-RIE dry etching for high efficiency n-i-pThin-Film Silicon Solar Cells** YP2 10
Sangho Kim, Vinh Ai Dao, Chonghoon Shin and Junsin Yi*
Department of Energy Science, Sungkyunkwan University, Suwon, 440-746, Korea

16:15 **Key parameters of silicon micropillar arrays for solar cell performance optimization** YP2 11
Di Zhou1, Y. Pennec1, B.Djafari-Rouhani1, O. Cristini2, T. Xu3, Y. Lambert1 and D. Stiévenard1
1- Institut d'Electronique et de Microélectronique et de Nanotechnologies, IEMN, (CNRS, UMR 8520), Groupe de Physique, Cité scientifique, avenue Poincaré, 59652 Villeneuve d'Ascq, France 2 - PHLAM, UMR8523, Université de Lille 1, 59652 Villeneuve d'Asq Cédex, France 3- Key Laboratory of Advanced Display and System Application, Shanghai University, 149 Yanchang Road, Shanghai 200072, People's Republic of China

16:15 **An analytic model for carrier transport in thin-film crystalline silicon solar cells with light trapping** YP2 12
Angelo Bozzola , Piotr Kowalczewski, and Lucio Claudio Andreani
Department of Physics, University of Pavia, Via Bassi 6, I-27100 Pavia, Italy

16:15 **Light trapping and carrier recombination in thin-film solar cells with randomly rough textures** YP2 13
Piotr Kowalczewski, Angelo Bozzola, Marco Liscidini, and Lucio Claudio Andreani
Department of Physics, University of Pavia, Via Bassi 6, I-27100 Pavia, Italy

16:15 **Colloidal quantum dots and metal nanoparticles team up for plasmon-enhanced intermediate band solar cells** YP2 14
Manuel J. Mendes(1), Estela Hernández(2), Esther López(2), Pablo García-Linares(2), Iñigo Ramiro(2), Irene Artacho(2), Elisa Antolín(2), Ignacio Tobías(2), Isodiana Crupi(1), Antonio Martí(2), Antonio Luque(2)
1) MATIS CNR-IMM, via S. Sofia 64, 95123 Catania, Italy 2) Instituto de Energía Solar, E.T.S.I. Telecomunicación, Universidad Politécnica de Madrid, Avda. Complutense 30, 28040 Madrid, Spain

16:15 **Optical and microscopic study of the plasmonic structures designed as back reflectors for thin film silicon solar cells** YP2 15
I. Crupi 1, S. Morawiec 1, M. Müller 2, K. Ganzerová 2, J. Holovský 2, A. Vetushka 2, M. Ledinský 2, M. J. Mendes 1, S. Mirabella 1, F. Priolo 1,3, A. Fejfar 2
1) MATIS CNR-IMM and Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy 2) Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnicka 10, Prague, Czech Republic 3) Scuola Superiore di Catania, Università di Catania, via Valdisavoia 9, 95123 Catania, Italy

16:15 **Role and effect of silver nanoparticles in grooving complex silicon nanostructures using a a novel metal assisted chemical vapor phase etching method (MAC-VPE).** YP2 16
Rachid Ouertani, Chohdi Amri, Abderrahmen Hamdi, Wissem Dimessi, Ezzaouia Hatem.
Laboratoire de Photovoltaique, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cedria, BP95, 2050 Hammam-if.Tunisie.

16:15 **Silver nanopillars for plasmon-enhanced absorption in thin films** YP2 17
R. Mailhes, T. Nychyporuk, M. Lemiti and V. Lysenko
Institut des Nanotechnologies de Lyon (INL)

16:15 **Enhanced broadband light absorption in silicon film by large-size lumpy silver particles** YP2 18
Dongsheng Li, Meng Yuan, and Deren Yang
State Key Laboratory of Silicon Materials and Department of Materials Science and Engineering, Zhejiang University

16:15 **Influence of the annealing on optical properties and structure of DLC:Ag thin films** YP2 19
A. Čiegis, Š. Meškinis, A. Vasiliauskas, K. Šlapikas, R. Gudaitis, S. Tamulevičius
Institute of Materials Science of Kaunas University of Technology, Savanorių 271, 50131 Kaunas, Lithuania

16:15 **Spectroscopic ellipsometry study of ITO/Ag hybrid nanorod layers for plasmonic solar cell application** YP2 20
P. Basa, L. Makai, A. A. Khosroabadi, P. Gangopadhyay, R. A. Norwood
P. Basa; L. Makai: Semilab Semiconductor Physics Laboratory Co. Ltd., Budapest XI., Prielle K. u. 2. 1117, Hungary A. A. Khosroabadi; P. Gangopadhyay; R. A. Norwood: College of Optical Sciences, The University of Arizona, Tucson, Arizona 85721, USA

16:15 **Smooth surface stacked metal-oxide nanoparticle TCO substrate with strong light-scattering** YP2 21
Shuhei Miura, Kazutoshi Suzuki, Shinichi Noda, Shuichi Nonomura
Environmental and Renewal Energy Systems Division Graduate School of Engineering, Gifu University

16:15 **Laser based synthesis of metallic nanoparticles towards efficient plasmonic solar cells** YP2 22
A. Gentile, G. Cacciato, F. Ruffino, R. Reitano, G. Scapellato, E. Bruno, M. Zimbone, S. Lombardo, A. Battaglia, M. G. Grimaldi
A. Gentile, G. Cacciato, F. Ruffino, G. Scapellato, E. Bruno, M. Zimbone, M. G. Grimaldi Department of Physics and Astronomy and MATIS- CNR-IMM - University of Catania, via S. Sofia 64 95123 Catania, Italy R. Reitano Department of Physics and Astronomy - University of Catania, via S. Sofia 64 S. Lombardo CNR-IMM, Stradale Primosole 50, I-95121 Catania, Italy A. Battaglia 3SUN S.r.l. Contrada Blocco torrazze sn - Zona Industriale 95121 - Catania, Italy

16:15 **Controlling Self-organized Production of Plasmonic Enhancement Interfaces for Solar Cells** YP2 23
Mona Zolfaghari Borra (a-b), Seda Kayra Güllü (b-c-d), Raşit Turan (a-b-c), Alpan Bek (a-b-c)
a- Micro and Nanotechnology Program of Graduate School of Natural and Applied Sciences, Middle East Technical University, Ankara 06800, Turkey b- Center for Solar Energy Research and Applications, Middle East Technical University, Ankara 06800, Turkey c- Department of Physics, Middle East Technical University, Ankara 06800, Turkey d- Electrical and Electronics Engineering Department, Physics Unit, Atılım University, Ankara 06836, Turkey

16:15 **Aluminium nano particles for future photovoltaic applications** YP2 24
P. Dubcek1, B. Pivac1, N. Radic1, S. Bernstorff2
1 R. Boskovic Institute, P.O. Box 180, Zagreb, Croatia; 2 Elettra-Sincrotrone Trieste, SS 14, km 163.5, Basovizza (TS), Italy

16:15 **The excellent thermal stability of rear surface passivation layer SiON-Al2O3 stacks in PERC solar cell** YP2 25
Kuk-Hyun Cho, Hyo Sik Chang
Graduate school of Energy Science Technology, Chungnam National University

16:15 **Silicon nanostructure based on metal-nanoparticle-assisted chemical etching** YP2 26
M. Ben Rabha1,2, M. Hajjaji2, M. Gaidi1,3, B. Bessais2
1Riyadh College of Technology, Technical and Vocational Training Corporation 2Laboratoire de Photovoltaïque, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisia 3Emirates college of Technology

16:15 **Optical and optoelectronic properties of porous silicon and silicon nanowires for solar cells** YP2 27
R. Ouertani, C. Amri, M. Ben Rabha
Laboratoire de Photovoltaïque, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisia

16:15 **Al2O3 passivation of silicon nanowires: Effects on optical and optoelectronic properties** YP2 28
A. HAJJAJI1, 2, I. Ka1, M. Ben Rabha2, M. GAIDI2, B. BESSAIS2, and M. A. El KHAKANI1
1Institut National de la Recherche Scientifique, INRS-Énergie, Matériaux et Télécommunications, 1650, Blvd. Lionel-Boulet, Varennes, QC, Canada J3X-1S2 2Laboratoire de Photovoltaïque, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisia

16:15 **Absorption enhancement in organic solar cells by the use of wrinkled PDMS** YP2 29
André Luis F. Cauduro, Stefan N. Johansen, Horst-Günter Rubahn, and Morten Madsen
NanoSYD, Mads Clausen Institute, University of Southern Denmark, Alsion 2, 6400-Sønderborg, Denmark.

16:15 **Optical simulation of multijunction solar cells based on III-V nanowires on silicon** YP2 30
Abdennacer Benali(a), Jérôme Michallon(c), Philippe Regreny(a), Emmanuel Drouard(a), Pedro Rojo(a), Alain Fave(b), Anne Kaminski-Cachopo(c), Michel Gendry(a)
a Institut de Nanotechnologies de Lyon, UMR 5270 – Ecole Centrale de Lyon, 36 avenue Guy de Collongue, 69134 Ecully, France b Institut de Nanotechnologies de Lyon, UMR 5270 – INSA de Lyon, Bâtiment Blaise Pascal, 20 avenue Albert Einstein, 69100 Villeurbanne, France c Institut de Micro Electronique et de Photonique – Laboratoire d'Hyperfréquence et de Caractérisation, UMR 5130, 3, rue Parvis Louis Néel, BP 257, 38016 Grenoble, France

16:15 **Numerical simulation of multijunction nanowire solar cells on silicon wafers** YP2 31
Kudryashov Dmitry, Gudovskikh Alexander, Morozov Ivan
SPbAU RAS - St. Petersburg Academic University

16:15 **Promising Tactic for Achieving High-Efficiency Hybrid Heterojunction Solar Cells** YP2 32
Chien-Ting Liu, Subramani Thiyagu, Chen-Chih Hsueh, Hong-Jhang Syu, Sung-Ting Yang, Pin-Chun Shen, Yu-Wen Cheng, Hao-Yu Wu and Ching-Fuh Lin
Graduate Institute of Photonics and Optoelectronics, National Taiwan University.

16:15 **Computational modelling and fabrication of luminescent sheet concentrators for photovoltaic devices** YP2 33
A.-L. Joudrier (1), F. Proise (1,2), R. Grapin (1), J.-L. Pelouard (2), and J.-F. Guillemoles (1)
(1) Institute of Research and Development on Photovoltaic Energy, EDF-CNRS-ENSCP, UMR 7174, 6 Quai Watier, 78401 Chatou cedex, France ; (2) Laboratory of Photonic and Nanostructures – CNRS, route de Nozay, 91460 Marcoussis, France

16:15 **Study of the effect of GaAs and InGaAs capping layers on the carrier transport in InAs/GaAs quantum dot infrared photodetectors** YP2 34
Aijaz Ahmad, Akshay Balgarkashi, S. Sengupta and S.Chakrabarti*
Department of Electrical Engineering, Indian Institute of Technology Bombay, Mumbai-400076, Maharashtra, India

16:15 **Study of the Impact of rapid thermal annealing on the optical characteristics of InAs/GaAs quantum dot heterostructures with GaAs and InGaAs capping layers** YP2 35
Akshay Balgarkashi, Aijaz Ahmad, S. Sengupta and S.Chakrabarti*
Department of Electrical Engineering, Indian Institute of Technology Bombay, Mumbai-400076, Maharashtra, India

16:15 **Nanocrystalline Silicon-Oxy-Nitride Films for Photovoltaic Applications: Electrical, Optical and Structural Properties** YP2 36
M. Perani (1), N. Brinkmann (2), D. Cavalcoli (1), B. Terheiden (2)
(1) Department of Physics and Astronomy, University of Bologna, Italy; (2) Department of Physics, University of Konstanz, Germany

16:15 **Simulation based assessment of the impact of contacts and interdot coupling strength on the photovoltaic performance of quantum dot arrays** YP2 37
Aude Berbezier, Urs Aeberhard
IEK-5: Photovoltaik, Forschungszentrum Jülich, 52425 Jülich, Germany

16:15 **HW-CVD silicon-rich silicon carbide films for third generation photovoltaic applications** YP2 38
B. Dridi Rezgui1, R. Jemai2, K. Khirouni2, and B. Bessais2
1Laboratoire de Photovoltaique, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cedria, BP 95, 2050 Hammam-Lif, Tunisia 2Laboratoire de Physique des Materiaux et des Nanomateriaux appliquee a l'Environnement, Faculte des Sciences de Gabes cite Erriadh, 6079 Gabes, University of Gabes, Tunisia

16:15 **The role of hydrogen on the structural and electronic properties of nanocrystalline silicon** YP2 39
Alessandro Mattoni[1], Giorgia Fugallo[2], Luigi Bagolini[1,3], Mark T. Lusk[3]
[1]Consiglio Nazionale delle Ricerche, Istituto Officina dei Materiali (CNR-IOM Cagliari, I-09042, Monserrato (Ca), Italy [2] European Theoretical Spectroscopy Facility (ETSF) / Laboratoire des Solides Irradiés (LSI), École Polytechnique, 91128 Palaiseau cedex, France. [3] Department of Physics, Colorado School of Mines, Golden, CO 80401, USA

16:15 **Sponge-like Si-SiO2 nanocomposite absorber for next generation PV cells** YP2 40
B. Liedke,1 D. Friedrich,1 B. Schmidt,1 K. H. Heinig,1 A. Mücklich,1 R. Hübner,1 D. Wolf,2 S. Kölling 3
1 Helmholtz-Zentrum Dresden – Rossendorf, Bautzner Landstr. 400, 01328 Dresden, Germany 2 Triebenberg Laboratory, Institute of Structure Physics, Technische Universität Dresden, 01062 Dresden, Germany 3 Fraunhofer Center Nanoelectronic Technologies, Königsbrücker Str. 180, 01099 Dresden, Germany

16:15 **Optimization Of Si And Ag Nanocrystal Hybrid Systems Fabricated By Ion Beam Synthesis: The Role Of Thermal Annealing** YP2 41
A. Haj Salem, M. Carrada, R. Carles, G. Ben Assayag
CEMES-CNRS, Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France

16:15 **Improved Photovoltaic Properties of Si quantum dot solar cells by polycrystalline Si interlayers** YP2 42
Ansoon Kim, Songwoung Hong, Jong Sik Jang, Hyun-Jeong Baek, Taewoon Kim, Kyung Joong Kim
Korea Research Institute of Standards and Science (KRISS), Daejeon, Korea

16:15 **On the origin of the electroluminescence of silicon nanocrystals/SiO2 superlattices** YP2 43
J. López-Vidrier1, Y. Berencén1, S. Hernández1, O. Blázquez1, S. Gutsch2, J. Laube2, D. Hiller2, P. Löper3, M. Schnabel3, S. Janz3, M. Zacharias2, and B. Garrido1
1MIND-IN2UB, Departament d'Electrònica, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain; 2IMTEK, Faculty of Engineering, Albert-Ludwigs-University Freiburg, Georges-Köhler-Allee 103, D-79110, Freiburg, Germany; 3ISE, Fraunhofer Institute for Solar Energy Systems, Heidenhofstr. 2, D-79110, Freiburg, Germany.

16:15 **Self-organized technology of metal nanowires growth on semiconductor surface for solar cell preparation** YP2 44
N.L. Dmitruk, O.Yu. Borkovskaya, S.V. Mamykin, I.B. Mamontova, N.V. Kotova
V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv 03028, Ukraine

16:15 **Doping of SnS nanoparticles** YP2 45
C.Prastani,C.Saguy, M. Nanu, D.E. Nanu, R.E.I. Schropp, J.K. Rath
1Utrecht University, Faculty of Science, Debye Institute for Nanomaterials Science-Physics of Devices, High Tech Campus 5, 5656 AE Eindhoven, The Netherlands; Solid State Institute, Technion City 32000 Haifa, Israel; Thin Film Factory, Foeke Sjoerdwei 3, 8914 BH Leeuwardeen, The Netherlands; Thin Film Factory, Foeke Sjoerdwei 3, 8914 BH Leeuwardeen, The Netherlands; Energy research Center of the Netherlands (ECN), Solar Energy, High Tech Campus Building 5 (WAY); p 057, 5656 AE Eindhoven and Eindhoven University of Technology (TU/e), Department of Applied Physics, Plasma & Materials Processing, P.O. Box 513, 5600 MB Eindhoven; Utrecht University, Faculty of Science, Debye Institute for Nanomaterials Science-Physics of Devices, High Tech Campus 5, 5656 AE Eindhoven, The Netherlands

16:15 **PbS Quantum Dots and ZnO nanowires for 3rd generation Solar Cells** **YP2 46**
Basma EL Zein1, Elhadj Dogheche2, Enrico Traversa1
1 King Abdullah University of Sciences and Technology (KAUST) –- Thuwal, Saudi Arabia. ; 2 Institute of Electronics, Microelectronics and Nanotechnology- IEMN UMR 8520 CNRS, University Valenciennes- Le Mont Houy, 59309 Valenciennes, Cedex, France

Advanced concepts III : S. Ito

08:30 **Hot Carrier solar cell absorbers: materials, mechanisms and nanostructures** **Y7 1**
Gavin Conibeer, Santosh Shrestha, Shujuan Huang, Robert Patterson, Hongze Xia, Yu Feng, Pengfei Zhang, Neeti Gupta, Suntrana Smyth, Yuanxun Liao, Shu Lin, Pei Wang, Xi Dai, Simon Chung
University of New South Wales, Sydney 2052, Australia

09:00 **Advanced concepts of III-V-based Solar Cells heterostructures: towards III-V/Si CPV on Si substrates and hot-carrier solar cells on InP substrates** **Y7 2**
O. Durand1, S. Almosni1, P. Rale2,3,4, J. Rodi?re2,3,4, Y. PingWang1, A. Letoublon1, H. Folliot1, A. Le Corre1, C. Cornet1, J. Even1, A. Ponchet5, L. Lombez2,3,4, J.-F. Guillemoles2,3,4
1Universite Europeenne de Bretagne, INSA, FOTON-OHM, UMR 6082, 35708 Rennes, France. 2EDF R&D, Institute of Research and Development on Photovoltaic Energy (IRDEP), Chatou, France 3CNRS, IRDEP, UMR 7174, 78401 Chatou, France 4Chimie ParisTech, IRDEP, 75005 Paris, France 5CEMES-CNRS, Universit? de Toulouse, 29 rue Jeanne Marvig, BP94347 Toulouse cedex 04, France

09:15 **Route toward III-V multispectral solar cells on silicon** **Y7 3**
T. Molière1,2, C. Renard1, A. Jaffré2, L. Vincent1, R, D. Bouchier1, J. Alvarez2, J.P. Kleider2, D. Mencaraglia2, N. Cherkashin3, A. Michel3, A. Claverie3, J. P. Connolly4
1 IEF, CNRS-UMR 8622, Bat 220, Univ Paris-Sud, 91405 Orsay, France 2 LGEP, UMR 8507 CNRS, Supélec, Universités Paris VI et XI, 11 rue Joliot Curie, 91192 Gif-sur-Yvette 3 CEMES-CNRS, Université de Toulouse, 29 rue J. Marvig, Toulouse, 31055, France 4 Universidad Politecnica de Valencia, Spain

09:30 **Fabrication of Mn2O3/TiO2 heterojunction under atmospheric ambiance and its photovoltaics characteristics** **Y7 4**
Adam Ginsburg*, David Keller, Hannah-Noa Barad, Yaniv Buhadana, Klimenty Shimanovich, Koushik Majhi, Assaf Anderson, Arie Zaban
Department of Chemistry and the Institute for Nanotechnology and Advanced Materials, Bar-Ilan University, Ramat-Gan 52900, Israel

09:45 **Optical antennas, optical cavity and photonic crystals to enhance the performance of organic solar cells** **Y7 5**
Francesco Pastorelli1,2, Sebastien Bidault3, Pablo Romero Gomez2, Rafael Betancur4, Alberto Martinez-Otero2, Jordi Martorell2,5, Nicolas Bonod1
1 Institut Fresnel, Aix-Marseille Université, CNRS, Domaine Universitaire de St Jérôme, Marseille 13397, France; 2 ICFO-Institut de Ciències Fotòniques, Mediterranean Technology Park, Castelldefels (Barcelona) 08860, Spain; 3 Institut Langevin, CNRS, ESPCI Paris Tech, 1 rue Jussieu, Paris 75005, France; 4 Centro de investigación, innovación y desarrollo de materiales - CIDEMAT Universidad de Antioquia, Medellín Colombia; 5 Departament de Fisica i Enginyeria Nuclear, Universitat Politecnica de Catalunya, Terrassa 08222, Spain;

10:00 **Best Poster Award (for poster session II)**

10:10 **Break**

Advanced characterization : M. Topic

10:30 **Advanced large area characterization of thin film solar modules** **Y8 1**
Andreas Gerber
IEK5 Forschungscentrum Julich, Germany

11:00 **Revisiting the theory and usage of capacitance techniques: application to high efficiency amorphous/crystalline silicon heterojunction solar cells** **Y8 2**
Jean-Paul Kleider, José Alvarez, Aurore Brézard-Oudot, Marie-Estelle Gueunier-Farret, Olga Maslova
LGEP; CNRS UMR8507; SUPELEC ; Univ Paris-Sud ; UPMC Univ Paris 06 ; 11 rue Joliot-Curie, Plateau de Moulon, F-91192 Gif-sur-Yvette Cedex, France

11:30 **Dual Mode Kelvin Probe for Surface/Interface Characterization of TCO's Semiconductors and Solar Cells via Air Photoemission Spectroscopy and Surface Photovoltage Spectroscopy** — Y8 3
Iain D Baikie, Angela C Grain, James Sutherland, Jamie Law
KP Technology Ltd, Burn Street, Wick, Caithness, KW1 5EH, UK

11:45 **Using Atom Probe Tomography to understand and enhance CIGS solar cells** — Y8 4
Mohit Raghuwanshi, Emmanuel Cadel, Sébastien Duguay, Philippe Pareige, Nicolas Barreau
Groupe de Physique des Matériaux (GPM), University of Rouen; IMN, University of Nantes

12:00 **Lifetime studies on gettered p/p+ structures** — Y8 5
Hariharsudan Sivaramakrishnan Radhakrishnan, Ivan Gordon, Robert Mertens, Jef Poortmans
KU Leuven, imec; imec; KU Leuven, imec; KU Leuven, Universiteit Hasselt, imec

12:15 **Towards Intermediate band solar cells characterization: Imaging quasi Fermi level splitting of multiple radiative transitions** — Y8 6
P. Rale [1], L. Lombez [1], A. Delamarre [1], G. El Hajje [1], K. Watanabe[2], R. Tamaki [2], Y. Shoji [2], Y. Okada [2], M. Sugiyama [3], J-F. Guillemoles [1]
[1] Institute of Research and Development on Photovoltaic Energy, 6 quai Watier,78401 Chatou, France; [2] Research Center for Advanced Science and Technology (RCAST), The University of Tokyo, Tokyo, 153-8904, Japan; [3] School of Engineering, The University of Tokyo, Tokyo 1138656, Japan

12:30 **Lunch**

Thin film solar cells I : A. Gerber

14:00 **Approaches and challenges in optical modeling and optical characterization of thin-film solar cells** — Y9 1
Marko Topič
University of Ljubljana, Slovenia

14:30 **Czochralski and mono-like p-type and n-type silicon solar cells: relationship between strain and stress induced by the back contact, and photovoltaic performance** — Y9 2
Thu Nhi Tran Thi1, Sébastien Dubois2, José Baruchel1, Nicolas Enjalbert2, Bruno Fernandez3, Tobias Schülli1, Rafael Kluender4 and Tamzin Lafford1
1: European Synchrotron Radiation Facility, 6 rue Jules Horowitz, BP 220, 38043 Grenoble cedex 9, France; 2: CEA-INES, Savoie Technolac, 50 avenue du Lac Léman, 73375 Bourget du Lac, France; 3: Institut Néel CNRS/UJF UPR2940, 25 rue des Martyrs, BP 166, 38042 Grenoble cedex 9, France; 4: CEA-LETI, 17 rue des Martyrs, 38000 Grenoble, France

15:00 **Post-deposition hydrogenation of micro-crystalline silicon** — Y9 3
W. Soppe, M. D?renk?mper, D. Zhang, C. van der Werf and R. Schropp
ECN-Solliance, High Tech Campus 5, 5656 AE Eindhoven, the Netherlands

15:15 **Multiphysics optimization of thin film crystalline silicon solar cells** — Y9 4
Selcuk Yerci, Matthew Branham, Gang Chen
Middle East Technical University Massachusetts Institute of Technology

15:30 **Novel porous silicon stacks for layer transfer of epitaxial silicon foils resulting in large minority carrier diffusion lengths** — Y9 5
Hariharsudan Sivaramakrishnan Radhakrishnan, Roberto Martini, Valerie Depauw, Kris Van Nieuwenhuysen, Ivan Gordon, Robert Mertens, Jef Poortmans
KU Leuven, imec; KU Leuven, imec; imec; imec; imec; KU Leuven, imec; KU Leuven, Universiteit Hasselt, imec

15:45 **Thermal deactivation of recombination active defects in n-type silicon for high efficiency solar cells** — Y9 6
F. E. Rougieux, N. E. Grant, P. Zheng and D. Macdonald
The Australian National University

16:00 **PLENARY SESSION**

Thin film solar cells II : G. Conibeer

08:30 **Nanostructured thin film crystalline silicon for PV applications** — Y10 1
C. Becker (1), V. Preidel (1), J. Xavier (1), P. Wyss (1), D. Eisenhauer (1), J. Probst (1), S. Burger (2), F. Schmidt (2), F. Back (3), E. Rudigier-Voigt (3), D. Amkreutz (1), J. Haschke (1), B. Rech (1)
(1) Helmholtz-Zentrum Berlin für Materialien und Energie, Kekuléstr. 5, 12489 Berlin; (2) Zuse-Institute Berlin, Takustr. 7 14195 Berlin; (3) SCHOTT AG, Hattenbergstr. 10, 55122 Mainz, Germany

09:00 **Lifetime assessment in Nano patterned crystalline silicon: from wafer to ultra-thin crystalline solar cells** — Y10 2
I. Cosme1, R. Cariou1, M. Foldyna1, P. Roca i Cabarrocas1, K.D. Lee2, C. Trompoukis3-4, V. Depauw3.
1. LPICM-CNRS, Ecole Polytechnique, 91128 Palaiseau, France; 2. Obducat Technologies AB, Scheelevägen 2, 223 63 Lund, Sweden; 3. IMEC, Kapeldreef 75, B-3001 Belgium; 4. KUL, Departement Elektrotechniek – ESAT, Kasteelpark Arenberg 10, B-3001 Leuven, Belgium

09:15 **PECVD-AlOx/SiNx passivation stacks on silicon: Constant voltage stress investigations of charge dynamics and interface defect states** — Y10 3
J. A. Töfflinger (1), A. Laades (2), C. Leendertz (1), L. M. Montañez (1), L. Korte (1), U. Stürzebecher (2), H.-P. Sperlich (3), B. Rech (1)
1: Institute for Silicon-Photovoltaics, Helmholtz-Zentrum Berlin, Kekuléstraße 5, 12489 Berlin, Germany; 2: CiS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH, Konrad-Zuse-Straße 14, 99099 Erfurt, Germany; 3: Roth & Rau AG, An der Baumschule 6-8, 09337 Hohenstein-Ernstthal, Germany

09:30 **ELECTRICAL AND CHEMICAL STUDIES ON AL2O3 PASSIVATION ACTIVATION PROCESS** — Y10 4
M. Pawlik 1, J. P. Vilcot 1, M. Halbwax 1, D. Aureau 2, A. Etcheberry 2, A. Slaoui 3, T. Schutz-Kuchly 3, R. Cabal 4
1 Institut d'Electronique, de Microélectronique et de Nanotechnologie (IEMN) UMR 8520, Université Lille1 Sciences et Technologies, CS 60069, 59652 Villeneuve d'Ascq, France 2 Institut Lavoisier de Versailles UMR 8180, Université de Versailles-St-Quentin en Yvelines, 45 avenue des Etats Unis, 78000 Versailles, France 3 Laboratoire des sciences de l'Ingénieur, de l'Informatique et de l'Imagerie (ICube), UMR 7357, UdS/CNRS, 23 rue du Loess, BP 20 CR, 67037 Strasbourg Cedex2, France 4 CEA-INES 50 avenue du Lac Léman, 73375 Le Bourget du Lac, FRANCE

09:45 **Synthesis and characterization of polycrystalline silicon films on aluminium based substrates for solar cells application** — Y10 5
A. Slaoui1, S. Roques1, O. Lunder2, A. Ulyashin3, O. Mahboub4, Z. Sekkat4,
1 ICube, University of Strasbourg-CNRS, 23 rue du Loess, B.P.20, F-67037 Strasbourg, France 2 SINTEF, Material and Chemistry, Høgskoleringen 5, NO- 034 ,Trondheim, Norway 3 SINTEF, Material and Chemistry, Forskningsveien 1, NO-0314, Oslo, Norway 4 MAScIR, MAScIR, Rue Mohamed Al Jazouli – Madinat Al Irfane Rabat 10 100 – Morocco

10:00 **Break**

Nanostructures I : H. Stiebig

10:30 **Microscopic experiments with radial junction solar cells based on silicon nanowires** — Y11 1
A. Fejfar, M. Hývl, A. Vetushka, M. Ledinský, S. Misra, M. Foldyna, Linwei Yu, P. Roca i Cabarrocas
a) Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10, 162 00 Prague 6, Czech Republic b) Laboratoire de Physique des Interfaces et des Couches Minces (LPICM), Ecole Polytechnique, CNRS, F-91128 Palaiseau, France

11:00 **Silicon nanowire based thin film solar cell concepts on glass for the >15% era** Y11 2
S. Christiansen(1,2), S. Schmitt(2), S. Jäckle(2), Ch. Tessarek(2), G. Sarau(2), M. Heilmann(2), M. Latzel(2), M. Göbelt(2), G. Shalev(2), M. Bashouti(2), A. Mahmoud(2), K. Höflich(1)
(1) Helmholtz-Zentrum für Materialien und Energie, Kekulestr. 7, 12489 Berlin, Germany; (2)Max Planck Institute for the Science of Light, Günther-Scharowsky-Str. 1, 91058 Erlangen, Germany

11:30 **Si nanowire arrays with antireflection layers for ultrathin crystalline Si solar cells** Y11 3
Minji Gwon, Yunae Cho, and Dong-Wook Kim
Department of Physics, Ewha Womans University, Seoul, 120-750, Korea

11:45 **Minority carrier lifetime measurement in nanowire based solar cells by a reverse recovery transient method** Y11 4
M. Daanoune(1), D. Kohen(2), A. Kaminski-Cachopo(1), C. Morin(2), P. Faucherand(2), S. Perraud(2), D. Blanc-Pélissier(3)
(1)IMEP-LAHC, Grenoble INP, Grenoble, France;(2)CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble Cedex 9, France;(3)INL, INSA, 7 avenue Jean Capelle, 69621 Villeurbanne Cedex

12:00 **Efficiency Enhancement of InP Nanowire Solar Cells by Surface Cleaning** Y11 5
Yingchao Cui, Jia Wang, Sebastien R. Plissard, Alessandro Cavalli, Thuy T. T. Vu, Rene P. J. van Veldhoven, Lu Gao, Mike Trainor, Marcel A. Verheijen, Jos E. M. Haverkort, Erik P. A. M. Bakkers
COBRA Research Institute, Eindhoven University of Technology, P.O. Box 513, 5600 MB, Eindhoven, The Netherlands; Philips Innovation Services, High Tech Campus 11, 5656 AE, Eindhoven, The Netherlands; Kavli Institute of Nanoscience, Delft University of Technology, 2600 GA, Delft, The Netherlands

12:15 **Low temperature hydrogenated microcrystalline silicon-carbon alloys deposited by RF-PECVD for photovoltaic application** Y11 6
S. Gaiaschi, E.V. Johnson, M-E. Gueunier-Farret, C. Longeaud, P. Chapon, J-P. Kleider
LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE LPICM-CNRS, Ecole Polytechnique, 91128 Palaiseau, FRANCE; LPICM-CNRS, Ecole Polytechnique, 91128 Palaiseau, FRANCE; LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE; LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE; HORIBA Jobin Yvon, 16-18, rue du Canal, 91165 Longjumeau CEDEX, FRANCE; LGEP–CNRS/SUPELEC, 11 rue Joliot Curie - Plateau de Moulon, 91192 Gif sur Yvette, FRANCE

12:30 **Lunch**

Nanostructures II : A. Fejfar

14:00 **Light Absorption in Ge Nanostructures: fundamentals and applications** Y12 1
S. Cosentino1, S. Mirabella1, M. Miritello1, I. Crupi1, P. Liu2, A. Zaslavsky2, D. Pacifici2, A. Terrasi1
1 MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, ITALY; 2 School of Engineering, Brown University, Providence, RI 02912, USA

14:30 **Enhanced Optical Absorption of Ge Quantum Dots in SiO2 and Si3N4 Matricies** Y12 2
E. G. Barbagiovanni (a), S. Cosentino (a), A. Terrasi (a), S. Mirabella (a), D. J. Lockwood (b), R. N. Costa Filho (c)
(a) MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Universita di Catania, Catania 95123, Italy (b) Measurement Science and Standards, National Research Council, Ottawa, Ontario K1A 0R6, Canada (c) Departamento de Fisica, Universidade Federal do Ceara, Caixa Postal 6030, Campus do Pici, 60455-760 Fortaleza, Ceara, Brazil

14:45 **Roles of synthesis technique and hosting matrix in the light absorption of Germanium Quantum Dots** Y12 3
Salvatore Cosentino1, Emel Sungur Ozen2, Rosario Raciti1, Antonio M. Mio3, Giuseppe Nicotra3, Francesca Simone1, Maria Miritello1, Isodiana Crupi1, Rasit Turan4, Antonio Terrasi1, Atilla Aydinli2, Salvo Mirabella1
1 MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, ITALY 2 Department of Physics, Bilkent University, 06800, Ankara, Turkey 3 IMM-CNR, VII strada 5, 95121 Catania, ITALY 4 Department of Physics, Middle East Technical University, 06531 Ankara, Turkey

15:00 **Control of the spontaneous emission from silicon nanocrystals with surface plasmons** Y12 4
Julie Goffard1-2, Patrice Miska*2, Davy Gérard1, Michel Vergnat2 and Jérôme Plain1
1) Université de Technologie de Troyes-12 rue Marie Curie 10000 Troyes (France) 2) Institut Jean Lamour UMR CNRS 7198 – Nancy Université – UPV Metz , Boulevard des Aiguillettes, 54500 Vandoeuvre-les-Nancy France

15:15 **Silicon Nandotots/ Si Rich Carbide Systems: Investigation of the Electrical Properties for Photovoltaic Applications** Y12 5
M. Perani (1), D. Cavalcoli (1), M. Canino (2), M. Allegrezza (2), M. Bellettato (2), C. Summonte (2)
(1) Physics and Astronomy Dept University of Bologna, viale B. Pichat 6/2, 40127 Bologna, Italy; (2) CNR-IMM, via Gobetti 101, 40129 Bologna, Italy

15:30 **Crystallisation Process of Silicon Nanocrystals Embedded in Silicon Carbide** Y12 6
C. Weiss, M. Schnabel, P. Löper, S. Janz
Fraunhofer Institute for Solar Energy Systems, Heidenhofstr. 2, 79110 Freiburg, Germany; Fraunhofer Institute for Solar Energy Systems, Heidenhofstr. 2, 79110 Freiburg, Germany; École Polytechnique Fédérale de Lausanne, Rue de la Maladière 71b, CP 526, CH-2002 Neuchâtel 2, Switzerland; Fraunhofer Institute for Solar Energy Systems, Heidenhofstr. 2, 79110 Freiburg, Germany

15:45 **Silicon nanocrystals: Strain engineering towards direct-bandgap silicon** Y12 7
K. Kusova, P. Hapala, P. Jelinek, J. Valenta, L. Ondic, O. Cibulka and I. Pelant
K. Kusova; P. Hapala; P. Jelinek; L. Ondic; O. Cibulka and I. Pelant Institute of Physics ASCR, Prague, Czech Republic J. Valenta Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic

16:00 **Break**

Poster session III : T. Lafford and S. Mirabella

16:15 **Coral-Like Film of Ni@NiS with Core-Shell Particles for the Counter Electrode of an Efficient Dye-Sensitized Solar Cell** YP3 1
Hui-Min Chuang,†, Chun-Ting Li,†, Min-Hsin Yeh,† Chuan-Pei Lee,† R.Vittal†, and Kuo-Chuan Ho†,‡,*
†Department of Chemical Engineering and ‡Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan Corresponding Author: *E-mail: kcho@ntu.edu.tw

16:15 **Thermally Stable Boron-doped Multi-walled Carbon Nanotubes as a Pt-free Counter Electrode for Dye-sensitized Solar Cells** YP3 2
Yow-An Leu1,2, Hui-Min Chuang2, Min-Hsin Yeh2, Lu-Yin Lin2, Ta-Jen Li2, Ling-Yu Chang1, Wei-Hung Chiang3,4, Jiang-Jen Lin1, and Kuo-Chuan Ho1,2*
1Institute of Polymer Science and Engineering, National Taiwan University, Taipei 106, Taiwan 2 Department of Chemical Engineering, National Taiwan University, Taipei 106, Taiwan 3Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan 4Material and Chemical Research Laboratories, Industrial Technology Research Institute, Hsinchu, 30011, Taiwan * Corresponding author (kcho@ntu.edu.tw)

16:15 **Dye-sensitized solar cells with shape-controlled Ni(1-x)Se counter electrodes** YP3 3
Chi-Ta Lee, Jia-De Peng, and Kuo-Chuan Ho
1. Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan 2. Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan * Corresponding author: kcho@ntu.edu.tw

16:15 **Dye-sensitized solar cell employing a diffraction grating for high light harvest** — YP3 4
Jeeyoung Lee, Jisuk Park, Junyeon Heo, Hyungseok Min, Myeongkyu Lee
Department of Materials Science and Engineering, Yonsei University, Seoul, Korea

16:15 **Metal-free organic dyes featuring a thienylethynyl spacer for dye sensitized solar cells** — YP3 5
Kwang-Won Park+, Sungwoo Ahn+, Jiyoon Kim, Kyung Hyun Lee, Kyungwon Kwak, Jongin Hong* + Equal contribution to this presentation * Corresponding author
Department of Chemistry, Chung-Ang University, Seoul 156-756, South Korea

16:15 **ZnO blocking layer to improve the photovoltaic performance of ZnO-based dye-sensitized solar cells.** — YP3 6
Gurpreet Singh Selopal1 2, Nafiseh Memarian 3, Riccardo Milan 1 2, Isabella Concina 1 2, Giorgio Sberveglieri 1 2, Alberto Vomiero 1 2
1 SENSOR Lab, Department of Information Engineering, University of Brescia, Via Valotti 9, 25133 Brescia, Italy; 2 CNR-INO SENSOR Lab, Via Branze 45, 25123 Brescia, Italy; 3 Faculty of Physics, Semnan University, 35195-363, Semnan, Iran;

16:15 **Graphene Ink-based Natural Dye Sensitized Solar Cells** — YP3 7
David Dodoo-Arhin(ab), Richard Howe(a), Guohua Hu(a), Na Jiao(a), Pritesh Hiralal(c), Gehan Amaratunga(c), Tawfique Hasan(a)
(a) Cambridge Graphene Centre, Cambridge University, UK; (b) Department of Material Science and Engineering, University of Ghana, Ghana; (c) Engineering Department, Cambridge University, UK.

16:15 **Pulsed laser deposition of Cu2ZnSnS4 nanoplate arrays for high catalytic activity counter electrodes in Pt-free dye-sensitized solar cells.** — YP3 8
Sarah Wozny, Kai Wang, Weilie Zhou
Advanced Materials Research Institute, University of New Orleans, New Orleans, LA 70148

16:15 **Preparation of reactively sputter deposited nanocrystalline antimony-doped tin oxide thin films: control of preferential orientation** — YP3 9
J. Montero, C. Guillen, C. G. Granqvist, J. Herrero, G. A. Niklasson
Department of Engineering Sciences, The Ångstrom Laboratory, Uppsala University (J. Montero, C. G, Granqvist and G. A. Niklasson) Department of Energy, Ciemat (C. Guillen and J. Herrero)

16:15 **Optical and electrical properties of high quality epitaxial p-type TCO Cr2O3:Mg** — YP3 10
Leo Farrell, Elisabetta Arca, David, Caffrey, Daragh Mullarkey, Igor Shvets
Trinity College Dublin, College Green, Dublin 2, Ireland.

16:15 **Growth and characterization of transparent contact electrodes thin films as photovoltaic structures** — YP3 11
P. Prepelita, V. Craciun
National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-36, Magurele 077125, Ilfov, Romania

16:15 **High mobility titanium-doped indium oxide for use in tandem solar cells deposted via pulsed DC magnetron sputtering.** — YP3 12
B. Grew, J. W. Bowers, F. Lisco, N. Arnou, J. M. Walls, H. M. Upadhyaya
Heriot-Watt University; Loughborough University

16:15 **OPTICAL, STRUCTURAL AND ELECTRICAL PROPERTIES OF CONDUCTIVE MULTILAYER STACK STRUCTURES ZnO:Al/Ag/ZnO:Al and ZrO2/Ag/ZrO2** — YP3 13
K. Lovchinov, M. Petrov, O. Angelov, D.Karashanova, D. Dimova-Malinovska
Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences; Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, Acad. G. Bonchev str., bl.109, 1113 Sofia, Bulgaria

16:15 **STRUCTURAL AND OPTICAL PROPERTIES OF ELECTROCHEMICALLY DEPOSITED NANOSTRUCTURED ZnO FILMS ON DIFFERENT CONDUCTIVE SUBSTRATES** — YP3 14
M. Petrov, K. Lovchinov, O. Angelov, H. Nichev, D.Karashanova, D. Dimova-Malinovska
Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences, bulv. Tzarigradsko chaussee, 72, 1784 Sofia, Bulgaria; Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, Acad. G. Bonchev str., bl.109, 1113 Sofia, Bulgaria

16:15 **Effect of Hydrogen gas dilution on sputtered Al:ZnO film** — YP3 15
Rosa Chierchia, Alberto Mittiga, Enrico Salza, Luca Serenelli, Mario Tucci
Enea Italian National Agency for New Technologies, Energy and Sustainable Economic Development

16:15 **Nanoengineered Al-doped ZnO as a transparent flexible scattering electrode in organic and hybrid solar devices** — YP3 16
P. Gondoni1*, P. Mazzolini1,2, V. Russo1, M. De Bastiani2, A. Petrozza2, A. Li Bassi1,2, C.S. Casari1,2
1 Dipartimento di Energia and NEMAS – Center for NanoEngineered Materials and Surfaces, Politecnico di Milano, via Ponzio 34/3, I-20133 Milano, Italy; 2 Center for Nano Science and Technology @PoliMI, Istituto Italiano di Tecnologia, Via Pascoli 70/3 I-20133 Milano, Italy

16:15 **Improvement of the structural, optical and electrical properties of AZO thin films upon O2+ ion beam irradiation.** — YP3 17
S. Boscarino1,2, G. Torrisi3, I. Crupi2, A. Alberti4, S. Mirabella2, F. Ruffino1,2, F. Simone1, A. Terrasi1,2
1Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy; 2MATIS IMM-CNR, via S. Sofia 64, 95123 Catania, Italy; 3Distretto Tecnologico Sicilia Micro e Nanosistemi, via Strada VIII 5, 95121 Catania, Italy; 4CNR-IMM, via Strada VIII 5, 95121 Catania, Italy

16:15 **Advanced AZO processing via flash lamp annealing** — YP3 18
F. L. Bregolin1, P. Lindberg2, K. Wiesenhuetter1, L. Vines2, S. Prucnal1, B. G. Svensson2, W. Skorupa1
1) Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, P.O. Box 510119, 01314 Dresden, Germany; 2) Department of Physics/Centre for Materials Science and Nanotechnology, University of Oslo, P.O. Box 1048 Blindern, N-0316 Oslo, Norway

16:15 **Consequence of thermal annealing of PCDTBT-based solar cells on performance and composition profile** — YP3 19
Olesia Synooka,¬ Kai–Rudi Eberhardt, Chetan Raj Singh, Gernot Ecke, Bernhard Ecker, Elizabeth von Hauff, Gerhard Gobsch and Harald Hoppe
Olesia Synooka, Kai-Rudi Eberhardt, Chetan Raj Singh, Felix Hermann, Prof. Gerhard Gobsch, Dr. Harald Hoppe Department of Experimental Physics 1, Institut für Physik and Institut für Mikro- und Nanotechnologien, TU Ilmenau, PF 100565, 98693 Ilmenau, Germany E-mail: olesia.synooka@tu-ilmenau.de or harald.hoppe@tu-ilmenau.de Gernot Ecke Department of Nanotechnology, Institut für Mikro- und Nanotechnologien, TU Ilmenau, PF 100565, 98693 Ilmenau Dr. Bernhard Ecker, Prof. Elizabeth von Hauff Organic Photovoltaics & Electronics Group, Institute of Physics, University of Freiburg, 79104 Freiburg, Germany Fraunhofer ISE, Heidenhofstr. 2, 79110 Freiburg, Germany

16:15 **Cupric Oxide-based P-type Transparent Conductors** — YP3 20
P J M Isherwood, J W Bowers, J M Walls
CREST, Holywell Park, School of Electrical, Electronic and Systems Engineering, Loughborough University, LE11 3TU, UK

16:15 **MOCVD Strontium-doped copper oxide thin films as p-type transparent conductive oxide : growth and characterization** — YP3 21
L. Bergerot, C. Jimenez, J.L. Deschanvres, O. Chaix
Laboratoire des Matériaux et du Génie Physique CNRS - Grenoble INP, 3 parvis Louis Néel CS 50257, 38016 Grenoble, France.

16:15 **High Surface-Textured SnO2 Thin Films Fabricated by Nozzle Spraying Process for Solar Cell Applications** — YP3 22
Li-Wei Chou, Albert T. Wu
Ph.D. Candidate; Professor

16:15 **Fill factor Enhancement of amorphous silicon solar cells for high efficiency tandem structures** — YP3 23
Osama Tobail
Egypt Nanotechnology Center

16:15 **Performance of simulated tandem devices under local operating conditions** — YP3 24
M. Emziane, S. Alshkeili
Solar Energy Materials and Devices Laboratory Masdar Institute of Science and Technology Masdar City, PO Box 54224, Abu Dhabi, UAE.

16:15 **Ellipsometric characterization of Si-based heterojunction solar cell structures.** **YP3 25**
A. Sytchkova*, A. Ulyashin**
*ENEA, Rome, Italy **SINTEF Materials and Chemistry, Oslo, Norway

16:15 **Comparison of TMB and B2H6 as precursors for emitter doping in high efficiency hetero junction solar cells** **YP3 26**
L. Mazzarella1, S. Kirner1, B. Stannowski1, L. Korte2, R. Schlatmann1, B. Rech2
1 PVcomB, Helmholtz-Zentrum Berlin für Materialien und Energie, Schwarzschildstr. 3, 12489 Berlin, Germany; 2 Institute for Silicon Photovoltaics, Helmholtz-Zentrum Berlin für Materialien und Energie, Kekuléstraße 5, 12489 Berlin, Germany

16:15 **OFOCell concept for low cost silicon photovoltaics** **YP3 27**
S. Prucnal and W. Skorupa
Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, P.O. Box 510119, 01314 Dresden, Germany

16:15 **Minority carrier lifetime studies of porous silicon metal gettering in epitaxial silicon solar cells grown on low quality contaminated silicon substrates** **YP3 28**
Hariharsudan Sivaramakrishnan Radhakrishnan, Ferenc Korsos, Nick Cowern, Maarten Debucquoy, Ivan Gordon, Robert Mertens, Jef Poortmans
KU Leuven, imec; Semilab; Newcastle University; imec; imec; KU Leuven, imec; KU Leuven, Universiteit Hasselt, imec

16:15 **Effect of interatomic distance of constituent nitrogen atoms on its localized electronic state in dilute GaAsN thin films investigated by a photoreflectance spectroscopy** **YP3 29**
Wen Ding1, Goshi Morioka1, Akio Suzuki1, Hidetoshi Suzuki2, Atsuhiko Fukuyama1, Masafumi Yamaguchi3, and Tetsuo Ikari1
1Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-nishi, Miyazaki 889-2192, Japan; 2Interdisciplinary Research Organization, University of Miyazaki, Miyazaki, Japan; 3Toyota Technological Institute 2-12-1 Hisakata, Tempaku-ku, Nagoya, Aichi 468-8511, Japan

16:15 **Silicon surface passivation by nitric acid grown SiO2 layers** **YP3 30**
P. Prathap*, R. Nautiyal, M. Srivastava, Vandana, S.K. Srivastava, R.K. Singh, C.M.S Rauthan, P.K. Singh
Silicon Solar Cell Group, CSIR-Network of Institutes for Solar Energy, CSIR-National Physical Laboratory, Dr. K.S. Krishnan Marg, New Delhi-110012, India

16:15 **Hydrogen plasma treatment on a-Si:H thin films for c-Si surface passivation** **YP3 31**
L. Serenelli 1, R. Chierchia 1, M. Izzi 1, M. Tucci 1, L. Martini 2 D. Caputo 2, R. Asquini 2, G. de Cesare 2
1 ENEA, Research Centre Casaccia, via Anguillarese, 301– Rome, Italy 00123; 2 Dept. of Information, Electronic and Telecommunication Engineering, Sapienza Univ. of Rome, via Eudossiana, 18 – Rome, Italy 00184;

16:15 **Passivated back contacts based on the tunneling current through ultra-thin alumina layers** **YP3 32**
A. Morales-Vilches*, C. Voz, M. Colina, I. Martín, P. Ortega, G. López, R. Alcubilla
Polytechnic University of Catalonia (UPC), Barcelona, Spain

16:15 **Fabrication and characterization of spin-coated TiO2 films** **YP3 33**
1-Arezoo Hosseini(1-4) 2-kerem çağatay içli (2-3-4) 3- Macit Özenbaş(3-4) 4-Ayşe Çiğdem Erçelebi) (1-4)
1Middle East Technical University, Department of physics, Ankara, Turkey 2 Middle East Technical University, Micro and Nanotechnology Graduate Program, Ankara, Turkey 3Middle East Technical University, Department of Metallurgical and Materials Engineering, Ankara, Turkey 4 The Center for Solar Energy Research and Applications (GÜNAM), METU, Turkey

16:15 **Fabrication and Characterization of TiO2Thin Films for Device Applications** **YP3 34**
1 Arezoo hosseini (1-3) 2 Hasan Hüseyin Güllü (1-3) 3 emre coskun (1-2) 4 Raşit Turan (1-3) 5 Ayşe Çiğdem Erçelebi (1-3)
1 Department of Physics, Middle East Technical University (METU), Ankara 06800, Turkey 2 Department of Physics, Çanakkale Onsekiz Mart University, Çanakkale 17100 Turkey 3 Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey

16:15 **Novel room temperature laminate technology to enable the mass manufacture of flexible HOPV devices** **YP3 35**
Daniel Bryant1, Peter Greenwood1, Joel Troughton1, Matthew Carnie1, Matthew Davies1,Trystan Watson1, Maarten Wijdekop2, Dave Worsley1
1 SPECIFIC, Baglan Bay Innovation Centre, Baglan Energy Park, Baglan, Port Talbot, SA12 7AX, United Kingdom ; 2 TATA Steel Europe, PV Accelerator, Shotton Works, Deeside, Flintshire, CH5 2NH, United Kingdom

16:15 **Simulation and design of thin film solar cells** **YP3 36**
Giovanni Carapezza, Giuseppe Fisicaro, Cosimo Gerardi, Giuseppe Nicosia, Antonino La Magna, Salvatore Lombardo, Giovanni Mannino, Andrea Patanè, Vittorio Romano, Andrea Santoro
CNR-IMM VIII Strada 5, Catania (Italy); Dipartimento di Matematica Università di Catania, Via Santa Sofia 64, Catania (Italy)

16:15 **A distributed SPICE model of amorphous silicon solar cells** **YP3 37**
Y. Vygranenko, M. Fernandes, M. Vieira, A. Khosropour, A. Sazonov
Electronics, Telecommunications and Computer Engineering Department, ISEL, Lisbon, Portugal; CTS-UNINOVA, 2829-516 Caparica, Portugal; Electrical and Computer Engineering Department, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada

16:15 **Comparative simulation and optimization study between p-type and n-type Emitter Wrap Through silicon solar cells using Silvaco** **YP3 38**
B.Benabadji, A.Zerga, Lachachi
Materials and Renewable Energies Research Unit (URMER), Faculty of Sciences, University of Tlemcen, PO Box 119, 13000 Tlemcen, Algeria

16:15 **Using the SPV technique (SURFACE PHOTOVOLTAGE) for the determination of the diffusion length of minority carriers for junction metal / semiconductor disordered** **YP3 39**
S.Tata1, N. Khelifati 2, A.fedala 1 and A.Rahal1
1Laboratoire de Physique des Matériaux: Couches Minces et Semi-conducteurs, Faculté de Physique, USTHB, BP 32 El Alia, 16111 Bab-Ezzouar, Alger, Algerie
2L'Unité de Développement de la Technologie du Silicium (UDTS), UDTS - 2, bd. dr. Frantz FANON - B.P.140 Alger Sept Merveilles, 16027 Alger – ALGÉRIE

16:15 **TiO2 Nanotube Anti-Reflection Layers for silicon solar cells** **YP3 40**
P Prathap1, D Praveen Kumar2, G. Sumana1, M V Shankar2
1CSIR-National Physical Laboratory, Dr. K.S. Krishnan Marg, New Delhi-110012, India 2Nanocatalysis Research Lab, Department of Materials Science & Nanotechnology, Yogi Vemana University, Kadapa ? 516 003, India

16:15 **Impact of saw damage removal on the reflectance of textured surfaces of silicon solar cells.** **YP3 41**
Olfat Hamdan, Ali Hajjiah, Moustafa Y. Ghannam
Electrical Engineering Dept., College of Engineering and Petroleum, Kuwait University, P.O. Box 5969, 13060 Safat, Kuwait

16:15 **Boron-doped mixed phase silicon oxide for thin film silicon solar cells** **YP3 42**
L. V. Mercaldo, E. M. Esposito, I. Usatii, P. Delli Veneri
ENEA, Portici Research Center, P.le E. Fermi 1, 80055 Portici (Napoli), Italy

16:15 **Efficiency improvement of N-type silicon solar cells by controlling the boron doping profile** **YP3 43**
Hanane Lachachi, Abdellatif Zerga
Materials and Renewable Energies Research Unit (URMER), Faculty of Sciences, University of Tlemcen, PO Box 119, 13000 Tlemcen, Algeria

16:15 **Improving thin-film SiGe solar cell efficiency using novel multi-trench technique** **YP3 44**
K. Kacha1, F. Djeffal1, T. Bentrcia2 and I. Berbezier3
1) LEA, Department of Electronics, University of Batna, Batna 05000, Algeria.
2) Department of Physics, University of Batna,Batna 05000, Algeria. 3) IM2NP Aix-Marseille Universités, UMR CNRS n°7334, Faculté des Sciences St-Jérôme - Case 142, 13397 Marseille Cedex 20 France. E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

Thin film solar cells III : C. Becker

08:30 **Enhanced Efficiency in Organic Solar Cells** Y13 1
Wade BRAUNECKER
National Renewable Energy Lab., USA

09:00 **Modeling the IV characteristics of an organic solar cell under illumination based on TPV and CE measurements** Y13 2
Andreas Gerl*, Moses Richter**, Gebhard Matt**, Heiko B. Weber* and Christoph J. Brabec**
** Department of Materials for Electronics and Energy Technology, Friedrich-Alexander University Erlangen-Nürnberg, Martensstraße 7, 91058 Erlangen; * Department for Applied Physics, Friedrich-Alexander University Erlangen-Nürnberg, Staudtstr. 7, 91058 Erlangen;

09:15 **Mechanical Stacking Multi Junction Solar Cells Using Transparent Conductive Adhesive** Y13 3
T. Sameshima, S. Yoshidomi, and M. Hasumi
Tokyo University of Agriculture and Technology

09:30 **Room temperature sputtered molybdenum and tungsten-doped indium oxides as prospective materials for transparent electrodes of solar cells** Y13 4
Ivan G. Samatov*, Sanjay K. Ram*, Sabrina R. Johannsen*, Pekka T. Neuvonen**, John Lundsgaard Hansen *, Jacques Chevallier*, A. Nylandsted Larsen*
* Department of Physics and Astronomy - iNANO, Aarhus University, Gustav Wieds Vej 14, DK-8000 Aarhus C, Denmark; **University of Oslo, Norway, 0316 Oslo

09:45 **Transparent electrodes composed of silver nanowire networks for photovoltaic applications** Y13 5
D. P. Langley1,2, M. Lagrange1, D. Muñoz-Rojas1, C. Jiménez1, Y. Pellegrin3, N. D. Nguyen4, Y. Bréchet5, D. Bellet1
1 Laboratoire des Matériaux et du Génie Physique CNRS - Grenoble INP, 3 parvis Louis Néel CS 50257, 38016 Grenoble, France. 2 Laboratoire de Physique des Solides, Interfaces et Nanostructures Département de Physique, Université de Liège Allée du 6 Août 17, B-4000 Liège, Belgique. 3 Laboratoire Chimie Interdisciplinarité, synthèse, analyse, modélisation (CEISAM) 2, rue de la Houssinière, Université de Nantes, BP 92208 ; 44 322 Nantes cedex 03, France. 4 Laboratoire de Science et Ingénierie des Matériaux et des Procédés CNRS - Grenoble INP, 1130 rue de la piscine 38042 Saint-Martin d'Hères, France.

10:00 **Best Poster Award (for poster session III)**

10:10 **Break**

Dye-sensitized solar cell : W. Braunecker

10:30 **Boosting PV performances in dye sensitized solar cells through graphene** Y14 1
G.G. Selopal (1,2), R. Milan (1,2), K.T. Dembele (3), L. Ortolani (4), R. Rizzoli (4), V. Morandi (4), I. Concina (1,2), G. Sberveglieri (1,2), F. Rosei (3,5), A. Vomiero (1,2)
1. Department of Information Engineering, University of Brescia, Brescia, Italy; 2. CNR-INO SENSOR Lab Brescia, Italy; 3. Institut National de la Recherche Scientifique,Énergie, Matériaux et Télécommunications, Varennes, QC, Canada; 4. CNR-IMM Section of Bologna, Bologna, Italy; 5. Center for Self-Assembled Chemical Structures, McGill University, Montréal, QC, Canada.

11:00 **Thermally induced structural modifications of nano-sized anatase films and the effects on the dye-TiO2 surface interactions** Y14 2
Giovanna Pellegrino1, Guglielmo Guido Condorelli2, Francesca De Rossi3, Thomas M. Brown3, Francesco Giovenale4 , Corrado Bongiorno1 and Alessandra Alberti1*.
1 IMM-CNR, Zona Industriale, VIII Strada 5, Catania; 2 Università degli Studi di Catania and INSTM UdR Catania; Viale Andrea Doria 6, Catania; 3 CHOSE (Centre for Hybrid and Organic Solar Energy), Department of Electronic Engineering, University of Rome—Tor Vergata, via del Politecnico 1, I-00133, Rome, Italy; 4 Hamamatsu Photonics Europe, Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany

11:15 **Characterization of Iodine Transport in Dye-Sensitized Solar Cell Electrolytes by I-125 Radiotracer Diffusion** Y14 3
NICO STOLWIJK, TOBIAS ESCHEN, FRIEDEMANN CALL, JOHANNES KOESTERS
Universitaet Münster, Institut fuer Materialphysik, 48149 Muenster

11:30 **One-pot synthesis of hierarchically assembled microspheres consisting of nanoporous nanosheets of highly exposed (001)-facets TiO2 for dye-sensitized solar cells** Y14 4
Jia-De Peng1, Chi-Ta Lee1, Chuan-Ming Tseng2, and Kuo-Chuan Ho*1,3
1 Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan; 2 Institute of Physics, Academia Sinica, Taipei 11529, Taiwan; 3 Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan

11:45 **A gold surface plasmon enhanced mesoporous TiO2 scattering layer for the plastic-based flexible dye-sensitized solar cells** Y14 5
Hsin–Wei Chen1, Chen-Yu Hong2, Chia-Yuan Chen3, Chung-Wei Kung1, Chun-Guey Wu3, Chung-Yuan Mou2 and Kuo-Chuan Ho1,4,*
1 Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan 2 Department of Chemistry, National Taiwan University, Taipei 10617, Taiwan 3 Department of Chemistry, National Central University, Jhong-Li, 32001 Taiwan 4 Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan

12:00 **Lunch**

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM Z

Materials development for solar fuel production and energy conversion

Symposium Organizers:

Dieter Schmeißer, Brandenburg University of Technology Cottbus-Senftenberg, Germany

Hans-Joachim Lewerenz, California Institute of Technology, Pasadena, USA

Ulrike I. Kramm, Brandenburg University of Technology Cottbus-Senftenberg, Germany

26 May 2014

09:30 **Coffee Break**

10:00 **Welcome - Organizers**

Oxygen Evolution Reaction : xx

10:15 **Experimental and Theoretical Studies of Electrocatalysts for the Oxygen Evolution Reaction (OER)** Z.1 1
Alexis T. Bell
Joint Center for Artificial Photosynthesis Lawrence Berkeley Laboratory Berkeley, CA 94720, USA

11:00 **Resonant light trapping in ultrathin iron oxide films for water splitting** Z.1 2
Hen Dotan(1), Ofer Kfir(2), Elad Sharlin(1), Oshri Blank(1), Moran Gross(1), Irina Dumchin(1), Guy Ankonina(3), Avner Rothschild(1)
(1) Department of Materials Science & Engineering, Technion – Israel Institute of Technology, Haifa, Israel; (2) Physics Department, Technion – Israel Institute of Technology, Haifa, Israel; (3) Photovoltaics Laboratory, Technion – Israel Institute of Technology, Haifa, Israel

11:25 **Nano Gold Rush: On the Optical and Photoelectrochemical Properties of Hematite Photoanodes Modified with Au Nanoparticles** Z.1 3
Moran Gross, Avner Rothschild
Department of Materials Science and Engineering, Technion, Haifa, Israel

11:45 **Evaluation of MnOX, □-Mn2O3, and Mn3O4 electrodeposited films as catalysts for the oxygen evolution reaction** Z.1 4
Alejandra Ramirez, Philipp Hillebrand, Matthias May, Diana Stellmach, Peter Bogdanoff and Sebastian Fiechter
Helmholtz-Zentrum Berlin fuer Materialien und Energie GmbH, Institute for Solar Fuels, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

12:05 **Lunch Break**

Oxygen/Hydrogen Evolution Reaction : xx

14:45 **Si tandem cells for photoelectrochemical water splitting: Differences between PV and PEC** Z.2 1
J. Ziegler, F. Yang, B. Kaiser, W. Jaegermann, F. Urbain, F. Finger, U. Rau, Institut für Materialwissenschaften, Technische Universität Darmstadt, Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany;Institut für Materialwissenschaften, Technische Universität Darmstadt, Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany;Institut für Materialwissenschaften, Technische Universität Darmstadt, Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany;Institut für Materialwissenschaften, Technische Universität Darmstadt, Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany;Forschungszentrum Jülich GmbH, Institut für Energie- und Klimaforschung, 52425 Jülich, Germany;Forschungszentrum Jülich GmbH, Institut für Energie- und Klimaforschung, 52425 Jülich, Germany;Forschungszentrum Jülich GmbH, Institut für Energie- und Klimaforschung, 52425 Jülich, Germany

15:10 **Solar Hydrogen Evolution by Novel, Highly Efficient TiO2-Cu(In,Ga)Se2 Heterojunction Photoelectrodes using Visible-Light** Z.2 2
A. Azarpira, M. Lublow, P. Bogdanoff, A. Fischer, C.A. Kaufmann, M. Krüger, Th. Schedel-Niedrig
A. Azarpira; P. Bogdanoff; C.A. Kaufmann; M. Krüger; Th. Schedel-Niedrig: Helmholtz-Zentrum Berlin fuer Materialien und Energie GmbH, Institute Solar Fuels, Berlin, Germany M. Lublow; A. Fischer: Technical University Berlin, Chemistry Department, Berlin, Germany.

15:30 **Coffee Break**

CO2 reduction : xx

16:00 **Mechanisms of electrocatalytic CO2 reduction** Z.3 1
Ruud Kortlever, Klaas Jan Schouten, Federico Calle Vallejo, Jing Shen, Marc Koper
Leiden Institute of Chemistry, Leiden University, Leiden, The Netherlands

16:35 **Synthesis of a visible-light responsive nanocatalyst CaFe2O4 and its activity on methanol production** Z.3 2
Md. Maksudur R. Khan*, Nor Amalina Hussain, Abu Yousuf, Cheng C. Kui
Faculty of Chemical & Natural Resources Engineering, University Malaysia Pahang, Kuantan, Pahang, Malaysia

17:00 **Production of Synthetic Fuels utilizing Ceria based Thermochemical cycles** Z.3 3
Alexander Bonk, Michal Gorbar, Andreas Züttel, Aldo Steinfeld, Ulrich F. Vogt
Alexander Bonk 1,2; Michal Gorbar 1; Andreas Züttel 1; Aldo Steinfeld 3; Ulrich F. Vogt 1,2 1 Empa, Swiss Federal Laboratories for Materials Science and Technology, Labora-tory for Hydrogen & Energy, 8600 Dübendorf, Switzerland 2 University of Freiburg, Department of Crystallography, D-79098 Freiburg i. Brsg. 3 Department of Mechanical and Process Engineering, ETH Zurich, CH-8092 Zurich

17:20 **The Energy Materials In-Situ Laboratory (EMIL) - a novel research platform at the Berlin synchrotron for photovoltaic and solar fuel materials** Z.3 4
Klaus Lips
Institute Silicon Photovoltaics Helmholtz-Zentrum Berlin für Materialien und Energie Kekuléstr. 7, 12489 Berlin, Germany

17:55 **Enabling Solar Fuels Technology With High Throughput Experimentation** Z.3 5
J. A. Haber, J. M. Gregoire , C. Xiang, S. Mitrovic, S. Suram, P. F. Newhouse, E. Soedarmadji, M. Marcin, K. Kan, D. Guevarra, N. Becerra, R. Jones, M. Pesenson, A. Shinde, L. Zhou, E. W. Cornell, J. Jin
Joint Center for Artificial Photosynthesis, California Institute of Technology, Pasadena, California 91125, USA. Engineering Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, USA

Oxygen Reduction/Evolution Reaction : xx

09:25 **Improvements of Group 4 and 5 Metal Oxide Based Catalysts for PEFCs** **Z.4 1**
Ken-ichiro Ota, Koichi Matsuzawa, Shigenori Mitsushima, Akimitsu Ishihara
Yokohama National University

10:00 **Understanding the oxygen reduction reaction using perovskite oxides** **Z.4 2**
Marcel Risch, Yang Shao-Horn
Research Laboratory of Electronics, Massachusetts Institute of Technology, 77 Massachusetts Ave, MA-02139, Cambridge; Research Laboratory of Electronics Department of Mechanical Engineering Department of Material Science and Engineering Massachusetts Institute of Technology, 77 Massachusetts Ave, MA-02139, Cambridge 2. Lee et al. J. Phys. Chem. Lett. 3, 399 (2012). 3. Grimaud et al. Nature Communications 4, 2439 (2013). 4. Grimaud et al. J. Phys. Chem. C 117, 25932 (2013). 5. Suntivich et al. Nature Chem. 3, 546 (2011). 6. Stoerzinger et al. Energy & Environ. Sci. 6, 1582 (2013). 7. Lee et al. Energy & Environ. Sci. 4, 3966 (2011).

10:35 **Trends and Universality in Oxygen Evolution and Reduction Reaction** **Z.4 3**
Jan Rossmeisl
Department of Physics, Technical University of Denmark Building 311, 2800 Lyngby

11:10 **Single Source Precursor Derived Nanocrystalline Cobalt Oxide as Highly Efficient Multifunctional Catalyst for Energy Production and Conversion** **Z.4 4**
Prashanth W. Menezes,1 Arindam Indra,1 Diego González-Flores,2 Nastaran Ranjbar,1 Ivelina Zaharieva,1 Peter Strasser,1 Holger Dau,2 Matthias Driess 1
1. Technische Universität Berlin Department of Chemistry: Metalorganics and Inorganic Materials Strasse des 17. Juni 135, Sekr. C2 10623 Berlin, Germany
2. Fachbereich Physik, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany

11:35 **Lunch Break**

Oxygen Reduction/Evolution Reaction : xx

13:30 **Metal (Oxy)nitrides for Oxygen Evolution Reaction under Visible Light Irradiation** **Z.5 1**
Takashi Hisatomi, Kazunari Domen
Department of Chemical System Engineering, The University of Tokyo

14:05 **Critical role of semiconductor-electrolyte interface in photocatalytic performance for water splitting reactions using visible-light-responsive Ta3N5 photocatalyst particulates** **Z.5 2**
Ela Nurlaela, Samy Ould-Chikh, Silvano del Gobbo, Eric Puzenat, Jean Marie Basset, and Kazuhiro Takanabe
Ela Nurlaela, Samy Ould-Chikh, Jean Marie Basset, Kazuhiro Takanabe: Division of Physical Sciences and Engineering, KAUST Catalysis Center (KCC); Silvano del Gobbo: Solar and Photovoltaic Engineering Center, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia; Eric Puzenat: IRCELYON, UMR CNRS 5256 Université de Lyon, 2 Avenue Albert Einstein, 69626 Villeurbanne Cedex, France

14:30 **Materials for photochemical diodes: In situ controlled surface preparation and lattice-matched heteroepitaxy of GaPN on Si(100)** **Z.5 3**
O. Supplie [1,2], MM. May [1,2], H. Stange [1], C. H?hn [1], H-J. Lewerenz [3], and T. Hannappel [1,4]
[1] Helmholtz-Zentrum Berlin f?r Materialien und Energie, Institute for Solar Fuels, Hahn-Meitner-Platz 1, 14109 Berlin, Germany; [2] Humboldt-Universit?t zu Berlin, Institut f?r Physik, Newtonstr. 15, 12489 Berlin, Germany; [3] California Institute of Technology, Joint Center for Artificial Photosynthesis, 1200 East California Boulevard, Pasadena, CA 91125, USA; [4] Technische Universit?t Ilmenau, Institut f?r Physik, Gustav-Kirchho□-Str. 5, 98684 Ilmenau, Germany

14:50 **Poster award: Short Pesentations 3x10min**

15:20 **Coffee Break**

POSTER SESSION : xx

16:00 **Effects of shapes and phases of iron oxide on its electrocatalytic activity toward water oxidation** **Z.P 1**
Chia-Yu Lin
Department of Chemical Engineering, National Cheng Kung University, Tainan City 70101, Taiwan

16:00 **Solar water oxidation using photovoltaic devices functionalized with a Fe(III)-catalyst** **Z.P 2**
Laura Meda*, Alessandra Tacca*, Vito Cristino§, Stefano Caramori§, Roberto Argazzi§, Carlo Alberto Bignozzi§
* Istituto ENI-Donagani, via Fauser 4, 28100 Novara, Italy; § Dip. Chimica, Univ. Ferrara, via Fossato di Mortara 17-27, 44121 Ferrara, Italy

16:00 **Noble-Metal-Free Photocatalytic Systems Based on g-C3N4 for Solar Driven Hydrogen Generation and CO2 reduction** **Z.P 3**
Shaowen Cao, Yupeng Yuan, Lisha Yin and Can Xue*
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798, Singapore

16:00 **Photocatalytic conversion of CO2 into solar fuels using oxide-based catalysts** **Z.P 4**
Muhammad Fahad Ehsan, Feng Bi, Muhammad Naeem Ashiq, Tao He
National Center for Nanoscience and Technology, China

16:00 **Optical in situ study of water adsorption on InP(100) surfaces** **Z.P 5**
Matthias M. May (1 2), Hans-Joachim Lewerenz (1 3), Thomas Hannappel (1 4)
1 Helmholtz-Zentrum Berlin für Materialien und Energie, Institute for Solar Fuels; 2 Humboldt-Universität zu Berlin, Institut für Physik; 3 California Institute of Technology, Joint Center for Artificial Photosynthesis; 4 Technische Universität Ilmenau, Institut für Physik

16:00 **Metal nanostructures for enhanced TiO2 photocatalysis under solar illumination** **Z.P 6**
G. Cacciato, F. Ruffino, M. Zimbone, V. Privitera, M. G. Grimaldi
G. Cacciato, F. Ruffino, M. Zimbone, M. G. Grimaldi Dipartimento di Fisica ed Astronomia-Università di Catania, via S. Sofia 64, 95123 Catania, Italy; G. Cacciato, F. Ruffino, M. Zimbone, V. Privitera, M. G. Grimaldi MATIS IMM-CNR, via S. Sofia 64, 95123 Catania, Italy;

16:00 **Enhanced Hematite Water Oxidation using Mesoporous Conducting Substrates** **Z.P 7**
Lifei Xi, Sing Yang Chiam, Lydia Helena Wong, Yeng Ming Lam, Beata Kardynal
Peter Grünberg Institute, Semiconductor Nanoelectronics (PGI-9), Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Institute of Materials Research and Engineering (IMRE), A *STAR, 3 Research Link, 117602, Singapore, School of Materials Science and Engineering, Nanyang Technological University, 639798, Singapore, Institute of Materials in Electrical Engineering and Information Technology 2 (IWE2), RWTH, Aachen, D-52056 Aachen, Germany

16:00 **Functionalized TiO2 nanoparticles for water oxidation** **Z.P 8**
Yaowapa Treekamol (1), Mauricio Schieda (1), Iris Herrmann-Geppert (1,2), Thomas Klassen (1,2)
(1) Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research, Max-Planck-Str. 1, 21502 Geesthacht; (2) Helmut-Schmidt University, Holstenhofweg 85, 22043 Hamburg

16:00 **Thin Film Metal Oxide Photoelectrodes by Plasma Nanostructuring** **Z.P 9**
Anja Bieberle-Hütter 1, Irem Tanyeli 1, Reinoud Lavrijsen 2, Quanbao Ma 3, Robbert van de Kruijs 1, Erwin Zoethout 1, Jürgen Kohlhepp 2, Greg De Temmerman 1, Richard van de Sanden 1
1 FOM-Institute DIFFER (Dutch Institute for Fundamental Energy Research), the Netherlands 2 Physics of Nanostructures and center for NanoMaterials (cNM), Department of Applied Physics, Eindhoven University of Technology (TU/e), the Netherlands 3 Inorganic Materials Chemistry, Chemical Engineering and Chemistry, Eindhoven University of Technology (TU/e), the Netherlands

16:00 **Synthesis of catalyst side chain functionalized conducting polymers** **Z.P 10**
Elisa Tordin, Dogukan Hazar Apaydin, Gottfried Aufischer, Stefanie Schlager, Engelbert Portenkirchner, Melanie Weichselbaumer, Niyazi Serdar Sariciftci
Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Altenbergerstrasse 69, A-4040 Linz, Austria

16:00 **Single-crystalline films of Fe2O3 optimized for solar water splitting** **Z.P 11**
M. Rioult, H. Magnan, D. Stanescu, A. Barbier
CEA-Saclay, DSM/IRAMIS/SPEC, F 91191, Gif sur Yvette Cedex, France

16:00 **Nanometric Carbides with Interpenetreted Networks** **Z.P 12**
Moustapha Coulibaly, Xavier Deschanels, Guilhem Arrachart
CEA PhD student; CEA Researcher; UM II Academic

16:00 **Novel Thin-Film Composites for Solar Hydrogen and Oxygen Evolution by Photoelectrocatalysis** **Z.P 13**
A. Azarpira 1, M. Lublow 2, F. Yang 1, C. Merschjann 1, J. Pfrommer 2, A. Steigert 1, M. Lücke 1, A. Fischer 2, M. Driess 2, Th. Schedel-Niedrig 1
1 Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institute Solar Fuels 2 Technische Universität Berlin, Institut für Chemie

16:00 **Investigation on Surface Modifications of Copper-Chalcopyrite Thin Films for Photochatodes in Photoelectrochemical Water Splitting** **Z.P 14**
Gunawan Gunawan, Wilman Septina, Shigeru Ikeda, Takashi Harada, Michio Matsumura
Research Center for Solar Energy Chemistry, Osaka University

16:00 **Sequential pulse electrodeposition of CuInS2 nanoparticles on ZnO nanorod thin films for visible light conversion** **Z.P 15**
Yiming Tang, Yun Hau Ng, Jung-Ho Yun, Rose Amal
ARC Centre of Excellence for Functional Nanomaterials, School of Chemical Engineering, The University of New South Wales, Sydney NSW 2052, Australia

16:00 **An intrinsic oxide - gallium selenide heterocontact for light-induced water splitting** **Z.P 16**
S.I. Drapak1, S.V. Gavrylyuk2, M.V. Tovarnitskii1, Z.D. Kovalyuk1
1Frantsevich Institute of Material Sciences Problems, National Academy of Sciences of Ukraine, Chernivtsi Department, 5 Iryna Vilde Str., Chernivtsi, 58001, Ukraine, e-mail: sdrapak@ukr.net 2Chernivtsi National University, 2 Kotsyubynskii Str., 58012, Chernivtsi, Ukraine

16:00 **Microwave-assisted synthesis of WO3 nanoparticles for solar water splitting: influence of particle size** **Z.P 17**
Sandra Hilaire, Markus Niederberger
ETH Zurich

16:00 **Novel approaches to enhance charge separation in Cu2ZnSnS4** **Z.P 18**
Néstor Guijarro, Mathieu Prévot, Kevin Sivula
Laboratory for Molecular Engineering of Optoelectronic Nanomaterials (LIMNO)

16:00 **Influence of mesoporosity in hematite films on water splitting efficiency** **Z.P 19**
C.Toussaint, R.Cloots, C.Henrist
University of Liège - Chemistry Department - GREEnMat-LCIS

16:00 **Sabatier based CO2-Methanation under oxyfuel conditions** **Z.P 20**
K. Müller, F. Rachow, J. Israel, D. Schmeißer
Brandenburgische Technische Universität Cottbus-Senftenberg, Angewandte Physik-Sensorik, Konrad-Wachsmann-Allee 17, 03046 Cottbus, Germany

16:00 **Intensity modulated photocurrent spectroscopy demonstrates genuine catalysis of water oxidation on hematite photoanodes by surface Sn-doping** **Z.P 21**
Halina Dunn, Johann Feckl, Alexander Müller, Dina Fattakhova-Rohlfing, Laurie Peter,1 Christina Scheu, Thomas Bein
Department of Chemistry and Center for NanoScience (CeNS), University of Munich (LMU), Butenandtstr. 11 E, 81377 Munich, Germany 1Department of Chemistry, University of Bath, BA2 7AY, United Kingdom

16:00 **Structured photoanodes for solar hydrogen production** **Z.P 22**
Agnieszka Rzeszutek (1), Mauricio Schieda (1), Regina Just (1), Thomas Klassen (1,2), Iris Herrmann-Geppert (1,2)
(1) Helmholtz-Zentrum Geesthacht, Institute of Materials Research, Max-Planck-Str. 1, 21502 Geesthacht, Germany; (2) Helmut-Schmidt University, Holstenhofweg 85, 22013 Hamburg, Germany

16:00 **Scalable preparation and enhanced oxygen reduction reaction of Co/N-doped CNT derived from layered double hydroxide precursor** **Z.P 23**
Ruijie Huo, Wen-Jie Jiang, Fazhi Zhang, Jin-Song Hu, Sailong Xu
Beijing University of Chemical Technology, Beijing 100029, China; Institute of Chemistry, Chinese Academy of Sciences, Beijing 100090, China

16:00 **Synthesis, characterization and photocatalysis of Zn doped GaOxNy nanostuctures by hydrothermal method** **Z.P 24**
Bong Kyun Kang, Sung Ryul Mang, Keun Man Song and Dae Ho Yoon
Sungkyunkwan University

16:00 **Hydrogen-doped TiO2 photo-anodes for photoelectrochemical water splitting** **Z.P 26**
Enrico Binetti 1,2, Zakaria El Koura2, Nainesh Patel2, Gianfranco Carotenuto1, Antonio Miotello2
1 Institute for Composite and Biomedical Material - Italian National Research Council - I-38123 Povo, Trento (Italy) 2Dipartimento di Fisica, Università degli Studi di Trento, I-38123 Povo, Trento (Italy)

16:00 **On the Structure-function Relationship of Cobalt and Manganese Oxides as Oxygen Evolving Catalysts for Light-driven Water Electrolysis: An in-line Synchrotron Radiation Photoelectron Spectroscopy Study** **Z.P 27**
Philipp Hillebrand, Peter Bogdanoff, Sebastian Fiechter
Helmholtz-Zentrum Berlin fuer Materialien und Energie GmbH, Institute for Solar Fuels, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

16:00 **Preparation and Characterization of Cobaltoxides as Catalysts for electrochemical Water-Splitting** **Z.P 28**
N. Weidler, B. Kaiser, J. Ursul, W. Jaegermann
Institute of Material Science, Technische Universität Darmstadt , Jovanka-Bontschitz-Str. 2, 64287 Darmstadt

16:00 **Electrocatalysts and Photoelectrocatalysis for Water Splitting and Solar Fuel** **Z.P 29**
Dr. Khurram Saleem Joya(1,2) and Prof. Kazuhiro Takanabe(1)
(1) Division of Physical Sciences and Engineering, KAUST Catalysis Center (KCC), King Abdullah University of Science and Technology (KAUST), 4700 KAUST, Thuwal 23955-6900, Saudi Arabia (2) Leiden Institute of Chemistry, Gorlaeus Laboratory, Leiden University, P.O. Box 9502, 2300 RA, Leiden, The Netherlands

16:00 **Electrochemically prepared microstructured Si photocathodes for water splitting.** **Z.P 30**
Chittaranjan Das, Massimo Tallarida, and Dieter Schmeisser
Chair for applied physics and sensors BTU Cottbus-Senftenberg

16:00 **New Directions in the Synthesis and Application of Amorphous Materials for the Energy Conversion and Storage** **Z.P 31**
Arindam Indra,1 Prashanth W. Menezes,1 Nastaran Ranjbar,1 Arno Bergmann,1 Ivelina Zaharieva,2 Peter Strasser,1 Holger Dau,2 Matthias Driess1
1. Department of chemistry, Technische Universität Berlin, Strasse des 17 Juni 135, Sekr. C2, 10623 Berlin, Germany. 2. Fachbereich Physik, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany

16:00 **Tantalum Nitride ultra thin films for light induced water splitting** **Z.P 32**
Rudolph Martin1, Brigitte Bouchet-Fabre 2, Elisabeta Nienaltowska1, Marie.Christine Hugon 2, Tibériu Minéa 2
1 LPGP, U-Psud -CNRS, Université Paris-Sud, F-91401 Cedex, France 2 LEDNA, NIMBE, CEA-CNRS, CEA-Saclay, F-91191 Gif sur Yvette Cedex

16:00 **Investigation of novel 3D hierarchical niobiumoxide superstructures** **Z.P 33**
Sophia B. Betzler , Andreas Wisnet, Christina Scheu
Sophia B. Betzler, Department of Chemistry & Center for NanoScience (CeNS), Ludwig-Maximilians-Universit?t M?nchen, 81377 Munich, Germany; Andreas Wisnet, Department of Chemistry & Center for NanoScience (CeNS), Ludwig-Maximilians-Universit?t M?nchen, 81377 Munich, Germany; Christina Scheu, , Max-Planck-Institut f?r Eisenforschung (MPIE), 40237 D?sseldorf, Germany

16:00 **Direct electrochemical capture and release of CO2 using Quinacridone thin-film electrodes** **Z.P 34**
D. H. Apaydin, E. D. Głowacki, E. Portenkirchner, N. S. Sariciftci
Linz Institute for Organic Solar Cells (LIOS), Institute of Physical Chemistry, Johannes Kepler University Linz, Austria

16:00 **Dynamics of photogenerated holes in BiVO4 photoanodes for solar water oxidation** **Z.P 35**
Yimeng Ma, Stephanie Pendlebury, Florian Le Formal and James Durrant
Department of Chemistry, Imperial College London, UK, SW7 2AZ

16:00 **Kinetic competition at the hematite / electrolyte interface during water oxidation** **Z.P 36**
Florian Le Formal, Stephanie R. Pendlebury, James R. Durrant
Department of Chemistry, Imperial College London, South Kensington Campus, London, SW7 2AZ, United Kingdom

16:00 **Highly efficient electrocatalytic water oxidation on ultrasmall nickel oxide nanocrystals** **Z.P 37**
Ksenia Fominykh, Peter Zehetmaier, Kristina Peters, Johann M. Feckl, Thomas Bein, Dina Fattakhova-Rohlfing*
Department of Chemistry and Center for NanoScience (CeNS), Ludwig-Maximilians-University (LMU), Butenandtstr. 5-13 (E), 81377 Munich, Germany (*email: dina.fattakhova@cup.uni-muenchen.de)

16:00 **On the viability of n-type 3C-SiC as electrode material for photolectrochemical water splitting** **Z.P 38**
Sven Tengeler, Bernd Kaiser, Didier Chaussende, Wolfram Jaegermann
Institut für Materialwissenschaften and Graduate School of Energy Science and Engineering, Technische Universität Darmstadt , Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany Laboratoire des Matériaux et du Génie Physique, Grenoble INP – CNRS, 3 parvis Louis Néel, BP257, 38016 Grenoble, France International Doctoral School in Functional Materials for Energy, Information Technology and Health, 351 cours de la liberation – 33405 Talence, France ; Institut für Materialwissenschaften and Graduate School of Energy Science and Engineering, Technische Universität Darmstadt , Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany ; Laboratoire des Matériaux et du Génie Physique, Grenoble INP – CNRS, 3 parvis Louis Néel, BP257, 38016 Grenoble, France International Doctoral School in Functional Materials for Energy, Information Technology and Health, 351 cours de la liberation – 33405 Talence, France ; Institut für Materialwissenschaften and Graduate School of Energy Science and Engineering, Technische Universität Darmstadt , Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany International Doctoral School in Functional Materials for Energy, Information Technology and Health, 351 cours de la liberation – 33405 Talence, France

16:00 **Development of Back-illuminated Photocathode for Tandem Water Splitting Device Application** **Z.P 39**
Dowon Bae*, Thomas Pedersen**, Brian Seger*, Ole Hansen**, Ib Chorkendorff*, Peter C.K. Vesborg*
*Department of Physics, Technical University of Denmark, 2800 Kgs. Lyngby;
**Department of Micro- and Nanotechnology, Technical University of Denmark, 2800 Kgs. Lyngby

16:00 **Quasi-1D WO3 Nanostructures for High Efficiency Photoelectrochemical Water Splitting** **Z.P 40**
Mehrdad Balandeh, Alessandra Tacca, Alessandro Mezzetti, Giorgio Divitini, Caterina Ducati, Laura Meda, Fabio Di Fonzo
Center for Nano Science and Technology - IIT@PoliMI, Via Pascoli 70/3, 20133 Milano (Italy); Eni S.p.A. Istituto ENI Donegani via G. Fauser, 4 - 28100 - Novara (NO) – Italy; Department of Materials Science & Metallurgy, University of Cambridge, Pembroke Street, CB2 3QZ Cambridge, UK

16:00 **High-throughput Screening of Materials for Water Splitting Applications** **Z.P 41**
Ivano E. Castelli, Kristian S. Thygesen, Karsten W. Jacobsen
Center for Atomic-scale Materials Design, Department of Physics, Technical University of Denmark

16:00 **Nano-crystalline ZrON thin films deposited by reactive magnetron sputtering** **Z.P 42**
C. Garlisi, A. Rizzo, D. Valerini, L. Protopapa, L. Tapfer
ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development - Technical Unit for Brindisi Material Technologies, Laboratory of Materials Technology (UTTMATB-TEC), Brindisi Research Center, S.S. 7 Appia km. 706, 72100 Brindisi, Italy

16:00 **Effect of triple phase boundary of Ni/YSZ on water electrolysis using ab-initio thermodynamics calculations** **Z.P 44**
Ji-Su Kim1, Byung-Kook Kim2, and Yeong-Cheol Kim1
1School of Energy, Materials, and Chemical Engineering, KoreaTech, Cheonan, Korea; 2High Temperature Energy Materials Research Center, Korea Institute of Science and Technology, Seoul, Korea

16:00 **Catalytic activity and synergistic effect of barium zirconate based proton conductors for high temperature electrolysis of carbon dioxide** **Z.P 46**
Jae Layng Park, Minhye Seo, Sunghyun Uhm
Institute for Advanced Engineering

16:00 **PHOTOCATALYTIC ACTIVITY OF Cr-DOPED TiO2 NANOPARTICLES DEPOSITED ON POROUS MONOCRYSTALLINE SILICON FILMS** **Z.P 47**
A. HAJJAJI1, 2, K. TRABELSI2, A. ATOUI3, M. AMLOUK4, L. BOUSSELMI3, M. GAIDI2, B. BESSAIS2 and My. A. El KHAKANI1
1Institut National de la Recherche Scientifique, INRS-Énergie, Matériaux et Télécommunications, 1650, Blvd. Lionel-Boulet, Varennes, QC, Canada J3X-1S2 2Laboratoire de Photovoltaïque, Centre de Recherches et des Technologies de l'Energie, Technopole de Borj-Cédria, BP 95, 2050 Hammam-Lif, Tunisia 3 Laboratoire de Traitement et de Recyclage des Eaux, Centre de Recherches et des Technologies des Eaux,Technopôle de Borj Cedria, BP 273, 8020 4Unité de Physique des Dispositifs à Semi-conducteurs, Faculté des Sciences de Tunis, Campus Universitaire 2092 Tunis, Tunisia

Oxygen/Hydrogen Evolution Reaction : XX

08:40 **Efficient Solar Water Splitting with a BiVO4-Amorphous Silicon Heterojunction Photoanode** — Z.6 1
Roel van de Krol, Fatwa Abdi
Helmholtz-Zentrum Berlin, Institute for Solar Fuels, Germany; Delft University of Technology, The Netherlands

09:15 **Revision of the Rutile/Anatase Band Alignment: Towards Efficient Solar Energy Harvesting** — Z.6 2
Andrew J. Logsdail1, John Buckeridge1, Aron Walsh2, C. Richard A. Catlow1, Ivan P. Parkin1, Alexey A. Sokol1, David O. Scanlon1.
1 Department of Chemistry, University College London, London, United Kingdom. 2 Centre for Sustainable Chemical Technologies and Department of Chemistry, University of Bath, Bath, United Kingdom.

09:40 **IrO2 and Ir/TiOx catalysts with micelle-controlled pore structure for electrochemical oxygen evolution (OER)** — Z.6 3
Michael Bernicke, Denis Bernsmeier, Erik Ortel, Ralph Kraehnert
Technische Universität Berlin, Berlin, Germany

10:00 **Coffee Break**

Hydrogen/Oxygen Evolution Reaction : xx

10:30 **Designing and testing HER and OER catalyst for tandem designs for photo catalysis** — Z.7 1
Ib Chorkendorff
Department of Physics Technical University of Denmark

11:05 **Molybdenum nitride nanoparticles on N-doped carbon for the hydrogen evolution reaction in acid medium** — Z.7 2
Adina Morozan, Frederic Jaouen
University Montpellier 2 - CNRS Institut Charles Gerhardt Montpellier, UMR 5253

11:30 **Nanocomposite of MoS2-nanoparticles on multi walled carbon nanotubes as an earth abundant catalyst for hydrogen evolution** — Z.7 3
Diana Stellmach,Peter Bogdanoff, Sebastian Fiechter
Helmholtz-Zentrum Berlin fuer Materialien und Energie Gmbh, Institute for Solar Fuels, Hahn-Meitner-Platz 1,14109 Berlin, Germany

11:50 **The electronic interaction of supported sub-nanometer Pt clusters on HOPG and ITO with water studied by SXPS** — Z.7 4
Joachim Klett, Rolf Schäfer, Bernhard Kaiser, Wolfram Jägermann
Eduard-Zintl-Institut für Anorganische und Physikalische Chemie, Technische Universität Darmstadt, Alarich-Weis-Strasse 8, 64287 Darmstadt, Germany; Eduard-Zintl-Institut für Anorganische und Physikalische Chemie, Technische Universität Darmstadt, Alarich-Weis-Strasse 8, 64287 Darmstadt, Germany; Institut für Material- und Geowissenschaften, Technische Universität Darmstadt, Jovanka-Bontschits-Strasse 2, 64287 Darmstadt, Germany; Institut für Material- und Geowissenschaften, Technische Universität Darmstadt, Jovanka-Bontschits-Strasse 2, 64287 Darmstadt, Germany

12:10 **Lunch Break**

Oxygen/Hydrogen Evolution Reaction : xx

14:00 **Atomic Layer Deposition for Improved Stability of Dye Sensitized Photoelectrochemical Cells** — Z.8 1
Gregory N. Parsons1 Berç Kalanyan,1 Do Han Kim,1 Mark D. Losego,1 Kenneth Hanson,2 Leila Alibabaei,2 Aaron K. Vannucci,2 Thomas J. Meyer,2 Qing Peng,3 Jeffrey T. Glass
1Dept. of Chemical and Biomolecular Engineering, NC State University, Raleigh NC 2Dept. of Chemistry, University of North Carolina Chapel Hill, Chapel Hill NC 3Dept. of Electrical and Computer Engineering, Duke University, Durham, NC

14:35 **Oxide photoabsorbers modified by atomic layer deposition** — Z.8 2
Massimo Tallarida, Chittaranjan Das, Dieter Schmeisser
Brandenburg University of Technology, Applied Physics - Sensors, Konrad Wachsmann Allee, 17, 03046, Cottbus, Germany

15:00 **TiO2-protected Cu2O/ CuO heterojucntion photoelectrodes with improved photostability for solar energy conversion** — Z.8 3
Peng Wang, Yun Hau Ng, Rose Amal
ARC Centre of Excellence for Functional Nanomaterials, School of Chemical Engineering, the University of New South Wales, Sydney, NSW 2052, Australia

15:20 **Coffee Break**

16:00 **Plenary Lecture**

29 May 2014

Hydrogen/Oxygen Evolution Reaction : xx

08:20 **Metal oxide materials for photocatalytic and photoelectrochemical solar water splitting** — Z.9 1
Akihide Iwase, Akihiko Kudo
Tokyo University of Science

08:55 **Identifying limitations and enhancing photocurrent in solution-processed p-type CuFeO2 photocathodes for solar hydrogen production** — Z.9 2
Mathieu S. Prévot, Néstor Guijarro, Kevin Sivula
Ecole Polytechnique Fédérale de Lausanne

09:20 **Low Temperature Preparation of n-type WS2 thin films** — Z.9 3
Rachel Morrish, Colin A. Wolden
Department of Chemical and Biological Engineering Colorado School of Mines Golden, Colorado, U. S. A.

09:40 **Coffee Break**

Oxygen Evolution Reaction : xx

10:30 **Colloidal Chemistry for photoanode material discovery** — Z.10 1
David Lynch, Erin Creel, Raffaella Buonsanti
LBNL/JCAP, LBNL/JCAP/UC Berkeley Chemistry Department, LBNL/JCAP

11:05 **Cathodic Formation of Amorphous Electrocatalysts on Silicon: Novel Hetero-junctions for Photoassisted Evolution of Oxygen** — Z.10 2
M. Lublow, M. Rohloff, A. Azarpira, Th. Schedel-Niedrig, I. Zaharieva, H. Dau, A. Fischer
M. Lublow; M. Rohloff; A. Fischer: Technical University Berlin, Department of Chemistry, Berlin, Germany. A. Azarpira; Th. Schedel-Niedrig: Helmholtz-Zentrum Berlin f?r Materialien und Energie, Institute Solar Fuels, Berlin, Germany. I. Zaharieva; H. Dau: Freie Universit?t Berlin, Physics Department, Berlin, Germany.

11:30 **Development of effective silicon-based photoanode for water splitting: properties of advanced composite structures** — Z.10 3
M. Kulmas (1), Y. Wu (2), R. Keding (1), M. Y. Bashouti (1), J. Bachmann (2), J.Ristein (3), S. Christiansen (1, 4)
1 - Max-Planck-Institut for the Science of Light, 91058 Erlangen, Germany; 2 - FAU Erlangen-Nürnberg, Inorganic and Analytical Chemistry, 91058 Erlangen, Germany; 3 - FAU Erlangen-Nürnberg, Laser Physics, 91058 Erlangen, Germany, 4 - Helmholtz-Center Berlin, 14109 Berlin, Germany

11:50 **Water Oxidation Catalysis with Prussian Blue Coordination Polymers** — Z.10 4
J. R. Galan-Mascaros, W. Y. Hernandez, B. Rodríguez-García, Sara Pintado, Sara Goberna-Ferron
Institute of Chemical Research of Catalonia (ICIQ); Catalan Institution for Research and Advanced Studies (ICREA), 724; M. W. Kanan, Y. Surendranath, D. G. Nocera. Chem. Soc. Rev. 2008, 321, 109. [2] S. Pintado, S. Goberna-Ferron, E. C. Escudero-Adan, J. R. Galan-Mascaros. J. Am. Chem. Soc. 2013, 135, 13270–13273.

12:10 **Lunch Break**

Oxygen Reduction Reaction : xx

14:00 **Activity, Performance, and Stability of Fe/N/C Electrocatalysts for the Reduction of Oxygen in PEM Fuel Cells** — Z.11 1
Jean-Pol DODELET
INRS-Energie, Materiaux et Telecommunications

14:35 **Efficient non-precious oxygen reduction electrocatalyst by modulating the active site of carbon nanohorns with nitrogen and iron** — Z.11 2
Sreekuttan M. Unni, Sreekumar Kurungot
Physical Chemistry Division, CSIR-National Chemical Laboratory, Pune, India

15:00 **Porphyrin based Fe/Co-N-C catalyst for efficient ORR** — Z.11 3
Sebastian Brüller, Xinliang Feng, Klaus Müllen
Max Planck Institute for Polymer Research

15:20 **Porous metal-free and non-precious metal electrocatalysts for oxygen reduction reaction** — Z.11 4
Haiwei Liang, Xinliang Feng, Klaus Müllen
Max-Planck-Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany

15:40 **Coffee break**

Oxygen Reduction Reaction : xx

16:10 **Investigation of corrosion phenomena in PEMFCs** — Z.12 1
Matthias Arenz
University of Copenhagen

16:45 **Size-selected PtxY Nanoparticles for the Oxygen Reduction Reaction** — Z.12 2
Patricia Hernandez-Fernandez, Federico Masini, David N. McCarthy, Christian E. Strebel, Daniel Friebel, Davide Deiana, Paolo Malacrida, Anders Nierhoff, Anders Bodin, Jane H. Nielsen, Thomas W. Hansen, Anders Nilsson, Ifan E.L. Stephens, Ib Chorkendorff
Patricia Hernandez-Fernandez; Federico Masini; David N. McCarthy; Christian E. Strebel; Paolo Malacrida; Anders Nierhoff, Anders Bodin; Jane H. Nielsen; Ifan E.L. Stephens; Ib Chorkendorff Center for Individual Nanoparticle Functionality (CINF), Department of Physics, Kgs Lyngby DK-2800, Denmark Davide Deiana; Thomas W. Hansen Center for Electron Nanoscopy (CEN), Kgs Lyngby DK-2800, Denmark Daniel Friebel; Anders Nilsson SLAC National Accelerator Laboratory, 2575 Sand Hill Road, MS69, Menlo Park CA 94025, USA

17:10 **End - Closing the Symposium**

SYMPOSIUM AA

Organic/polymer and hybrid photovoltaics

Symposium Organizers:

Niyazi Serdar Sariciftci, Johannes Kepler University, Linz, Austria

Markus Clark Scharber, Johannes Kepler University, Linz, Austria

Maria-Antonietta Loi, University of Groningen, The Netherlands

Michael D. McGehee, Stanford University, USA

Generation/Recombination and Transport of Charges in Organic SC : Markus Scharber

10:00 **Factors affecting reduced (non-Langevin) bimolecular recombination in organic photovoltaic devices** AA.1 1
Tracey M. Clarke, Jeff Peet, Christoph Lungenschmied, Nicolas Drolet, and Attila J. Mozer
Tracey M. Clarke; Attila J. Mozer: Intelligent Polymer Research Institute, University of Wollongong, NSW 2500, Australia Jeff Peet; Christoph Lungenschmied; Nicolas Drolet: Konarka Technologies Inc., Boott Mill South, 116 John Street, Suite 12, Lowell, MA 01852, USA.

10:30 **Quantifying the Efficiency of Free Charge Generation and Extraction in Polymer-based Bulk Heterojunction Devices** AA.1 2
Steve Albrecht, Juliane Kniepert, Ilja Lange, Dieter Neher
University of Potsdam, Institute of Physics and Astronomy Karl-Liebknecht Straße 24-25, Building 28 D-14476 Potsdam-Golm, Germany

11:00 **Radiative vs. non-radiative recombination in organic solar cells** AA.1 3
Kristofer Tvingstedt, Vladimir Dyakonov and Carsten Deibel
Experimental Physics VI Julius Maximilian University of Würzburg 97074 Würzburg

11:15 **Impact of Charge Generation and Collection in Perylene Dilmide Photovoltaic devices.** AA.1 4
Safa Shoaee,a Florent Delade,b Pabitra S. Tuladhar,b Ravichandran Shivanna,b Sridhar Rajaram,b K.S. Narayan,b James R. Durrant,
a) Centre for Plastic Electronics, Department of Chemistry, Imperial College London, London SW7 2AZ, United Kingdom. b) Chemistry and Physics of Materials Unit and bInternational Centre for Materials Science, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore 560064, India.

11:30 **Determining the Intrinsic and the Injection Dependent Charge Carrier Concentration in Organic Solar Cells Using the Suns-Voc Method** AA.1 5
Sebastian Schiefer1, Birger Zimmermann1, Uli Würfel1,2
1) Fraunhofer Institute for Solar Energy Systems (ISE), Heidenhofstr. 2, 79100 Freiburg, Germany; 2) Freiburg Materials Research Centre (FMF), University of Freiburg, Stefan-Meier-Str. 21, 79104 Freiburg, Germany

11:45 **Measuring charge carrier mobility in organic semiconductors resolving field dependence and charge density dependence** AA.1 6
Johannes Widmer, Julia Oelker, Janine Fischer, Christian Koerner, Karl Leo, Moritz Riede
All authors: Institut für Angewandte Photophysik (IAPP), TU Dresden, Germany
M.R. additionally: Current address: Oxford University, UK

12:00 **Dispersion Dominated Photocurrent in Polymer:Fullerene Solar Cells** AA.1 7
Armantas Melianas, Vytenis Pranculis, Andrius Devižis, Vidmantas Gulbinas, Olle Inganäs, Martijn Kemerink
1) Armantas Melianas; Olle Inganäs. Department of Physics, Chemistry and Biology, Biomolecular and Organic Electronics, Center of Organic Electronics (COE), Linköping University, 58183 Linköping, Sweden 2) Vytenis Pranculis; Andrius Devižis; Vidmantas Gulbinas. Center for Physical Sciences and Technology, Savanorių 231, LT-02300 Vilnius, Lithuania 3) Martijn Kemerink. a) Department of Physics, Chemistry and Biology, Linköping University, 58183 Linköping, Sweden b) Department of Applied Physics, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands

12:15 **Factors Determining Photocurrent Generation in Polymer: Fullerene Solar Cells** AA.1 8
Stoichko D Dimitrov, Christian B Nielsen, Bob C Schroeder, Hugo Bronstein, Florent Deledalle, Zhenggang Huang, Scot Wheeler, Pabitra Shakya Tuladhar, Elisa Collado Fregoso, Shahid Ashraf, Iain McCulloch and James R Durrant
Centre for Plastic Electronics, Department of Chemistry, Imperial College London, Exhibition Road, London SW7 2AZ, United Kingdom

12:30 **Lunch**

Processing and Devices : Maria A. Loi

14:00 **Conjugated Polymers for High Efficiency Solar Cells: Further Fundamental Understanding on PBnDT-FTAZ** AA.2 1
Wei You
Department of Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27599-3290, USA

14:30 **Organic nanoparticles to enable environmentally friendly, solution-processable organic solar cells** AA.2 2
Stefan Gärtner1, Marco Christmann2, Eva-Marie Prinz2, Bernd Baumstümmler2, Bernd Penth3, Alexander Colsmann1
1Karlsruhe Institute of Technology, Light Technology Institute, Engesserstrasse 13, 76131 Karlsruhe, Germany; 2MJR PharmJet GmbH, Saarland University Medical Center, Building 7, 66424 Homburg, Germany; 3Synthesechemie Dr. Penth GmbH, Lebacherstrasse 60, 66265 Heusweiler, Germany

14:45 **Solution-processing with non-halogenated solvents for upscaling and printing organic solar cells** AA.2 3
M. M. Voigt; F. Machui; L. Lucera; G. Spyropoulos; P. Kubis; C. J. Brabec
M.M.Voigt (1,2); F.Machui (1); L. Lucera (2); G. Spyropoulos (1); P. Kubis (1); C. J. Brabec (1, 2) (1): Department of material science, WW6, i-MEET, University of Erlangen, Martensstr. 7, 91068 Erlangen (2): Bavarian Centre of Applied Energy Research (ZAE Bayern), Haberstr. 2a, 91068 Erlangen, Germany

15:00 **Ultrathin, lightweight, and flexible organic solar cells** AA.2 4
Matthew S. White1, Martin Kaltenbrunner2, Eric Glowacki1, Tsuyoshi Sekitani2, Takao Someya2, Niyazi Serdar Sariciftci1, Siegfried Bauer3
1 Department of Physical Chemistry, Linz Institute for Organic Solar Cells (LIOS), Johannes Kepler University Linz; 2 Department of Electrical and Electronic Engineering and Information Systems, The University of Tokyo; 3Department of Soft Matter Physics, Johannes Kepler University

15:15 **In-situ monitoring of thermal decomposition of chemical precursor in organic-inorganic hybrid thin films and its impact on photovoltaic performance** AA.2 5
Sebastian Wood, Oliver Garnett, Nurlan Tokmoldin, Saif A. Haque, Ji-Seon Kim
Department of Physics and Centre for Plastic Electronics, Blackett Laboratory, Imperial College London, London SW7 2BB, United Kingdom; Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AY, United Kingdom;Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AY, United Kingdom; Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AY, United Kingdom; Department of Physics and Centre for Plastic Electronics, Blackett Laboratory, Imperial College London, London SW7 2BB, United Kingdom

15:30 **Break**

Morphology of Organic SC : Tracey M. Clarke

16:30 **The influence of molecular orientation relative to the bulk heterojunction on the performance of organic bulk heterojunction solar cells** AA.3 1
Harald Ade
Dept. of Physics, NCSU, Raleigh, NC27513, USA

17:00 **Tail state distribution of polymer donor dictates whether vertical phase separation affects device characteristics in bulk-heterojunction solar cells** AA.3 2
Yueh-Lin (Lynn) Loo
Chemical & Biological Engineering, Princeton University

17:30 **Controlling the microstructure and charge carrier transport of solution-processed semiconducting polymers** AA.3 3
Andrea Gasperini, Kevin Sivula
Laboratory for Molecular Engineering of Optoelectronic Nanomaterials, ISIC-SB-EPFL, Station 6, 1015 Lausanne, Switzerland

17:45 **The influence of fullerene loading on the charge carrier photogeneration in intercalated bulk heterojunction solar cells** **AA.3 4**
A. Zusan, K. Vandewal, B. Allendorf, N. H. Hansen, J. Pflaum, A. Salleo, V. Dyakonov, C. Deibel
Experimental Physics VI, Julius-Maximilians-University of Wurzburg, 97074 Wurzburg, Germany; Department of Materials Science and Engineering, Stanford University, Stanford, California 94305, United States; Experimental Physics VI, Julius-Maximilians-University of Wurzburg, 97074 Wurzburg, Germany; Experimental Physics VI, Julius-Maximilians-University of Wurzburg, 97074 Wurzburg, Germany; Experimental Physics VI, Julius-Maximilians-University of Wurzburg and Bavarian Centre for Applied Energy Research e.V. (ZAE Bayern), 97074 Wurzburg, Germany; Department of Materials Science and Engineering, Stanford University, Stanford, California 94305, United States; Experimental Physics VI, Julius-Maximilians-University of Wurzburg and Bavarian Centre for Applied Energy Research e.V. (ZAE Bayern), 97074 Wurzburg, Germany; Experimental Physics VI, Julius-Maximilians-University of Wurzburg, 97074 Wurzburg, Germany

18:00 **Microscopy studies of phase separation and [70]PCBM aggregation in active layers of polymer-based solar cells** **AA.3 5**
Rickard Hansson (1), Natalie Holmes (2), Leif Ericsson (1), Jakub Rysz (3), Ergang Wang (4), Andrzej Budkowski (3), Paul Dastoor (2), Ellen Moons (1)
1. Department of Engineering and Physics, Karlstad University, Karlstad, Sweden; 2. Centre for Organic Electronics, University of Newcastle, Callaghan, Australia; 3. Institute of Physics, Jagiellonian University, Kraków, Poland; 4. Department of Chemical and Biological Engineering, Chalmers University of Technology, Gothenburg, Sweden.

18:15 **Critical Role of Domain Purity and Interfaces in Polymer Solar Cells** **AA.3 6**
Swaminathan Venkatesan, Jihua Chen, Evan C. Ngo, Nirmal Adhikary, Qiquan Qiao
Department of Electrical Engineering, Center for Advanced Photovoltaics, South Dakota State University, Brookings SD 57006, USA; Center for Nanophase Materials Sciences , Oak Ridge National Laboratory, Oak Ridge, TN 37831

27 May 2014

Perovskite 1 : Dieter Neher

08:30 **Advances in perovskite-sensitized mesoscopic solar cells** **AA.4 1**
Nicolas Tetreault, Michael Grätzel
Laboratory of Photonics and Interfaces, Institute of Chemical Sciences and Engineering, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

09:00 **Rational design of low band gap metal-organic perovskite photovoltaics** **AA.4 2**
Marina R. Filip, Feliciano Giustino
Department of Materials, University of Oxford

09:15 **Hybrid halide perovskites: What they really are and why they really work** **AA.4 3**
Aron Walsh
Centre for Sustainable Chemical Technologies, University of Bath, BA2 7AY, UK

09:30 **Break**

Perovskite 1 : Lynn Loo

10:30 **Improving Perovskite Crystal Quality for High Device Performance** **AA.4 4**
Zhengguo Xiao1, Qi Wang1, Cheng Bi1 , Yuchuan Shao1, Qingfeng Dong1, Yongbo Yuan1, Chenggong Wang2, Yongli Gao2 and Jinsong Huang
1Department of Mechanical and Materials Engineering and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0656; 2Department of Physics and Astronomy, University of Rochester, Rochester, NY 14627

11:00 **Intrinsic multi-valley and multi-bandgap absorption and exciton inhibition in hybrid perovskites for solar cells** **AA.4 5**
J. Even*, L. Pedesseau*, C. Katan+
*Université Européenne de Bretagne, INSA Rennes, CNRS, UMR 6082 FOTON-OHM, 20 avenue des Buttes de Coësmes 35708 Rennes, France +CNRS, Institut des Sciences Chimiques de Rennes, UMR 6226, 35042 Rennes, France

11:15 **Air stable, 10% efficient PEDOT:PSS/perovskite/PCBM solar cells** **AA.4 6**
Pablo Docampo, James M. Ball, Mariam Darwich, Giles E. Eperon, Henry J. Snaith
University of Oxford, Parks Road, OX1 3PU, Oxford, UK

11:30 **Hybrid halide perovskites: modelling crystal dynamics and devices** **AA.4 7**
Jarvist M. Frost, Federico Brivio, Keith Butler, Aron Walsh
Department of Chemistry, University of Bath, UK

11:45 **High efficiency electrospun TiO2 nanofiber based hybrid organic-inorganic perovskite solar cell** **AA.4 8**
Sabba Dharani, Hemant Kumar Mulmudi, Natalia Yantara, Pham Thi Thu Thrang, Nam Gyu Park, Michael Graetzel, Subodh Mhaisalkar, Nripan Mathews, Pablo P. Boix
1. Energy Research Institute @NTU (ERI@N), Research Techno Plaza, X-Frontier Block, Level 5, 50 Nanyang Drive, Singapore 637553. 2. School of Materials Science and Engineering, Nanyang Technological University, Nanyang Avenue, Singapore 639798. 3. School of Chemical Engineering and Department of Energy Science, Sungkyunkwan University, Suwon 440-746, Korea. 4. Laboratory of Photonics and Interfaces, EPFL, Lausanne, Switzerland. 5. Singapore-Berkeley Research Initiative for Sustainable Energy, 1 Create Way, Singapore 138602, Singapore.

12:00 **Improving Performance of Low-Temperature Solution-Processed Bilayer Organometal Halide Hybrid Photovoltaics via Thickness Optimization and Tandem Structure with Organic Photovoltaics** **AA.4 9**
Teddy Salim (1), Shuangyong Sun (1), Jun Yan Lek (1), Martial Duchamp (2), Chris Boothroyd (2) and Yeng Ming Lam (1,3)
(1) Nanyang Technological University, School of Materials Science and Engineering, 50 Nanyang Avenue, 639798 Singapore; (2) Ernst Ruska-Centrum und Peter Grünberg Institut, Forschungszentrum Jülich, D-52425 Jülich, Germany; (3) Institute of Materials for Electronic Engineering II, RWTH-Aachen, Sommerfeldstr. 24, D-52074 Aachen, Germany

12:15 **Low temperature solution based synthesis of thin film MAPbI3 perovskite solar cells** **AA.4 10**
Fabian Hanusch, Pablo Docampo, Samuel D. Stranks 1, Henry Snaith 1, Thomas Bein
Department of Chemistry and Center for NanoScience (CENS), LMU Munich, Butenandtstr. 11, 81375, Munich, Germany; 1 Clarendon Laboratory, University of Oxford, Parks Road, OX1 3PU, Oxford, UK

12:30 **Lunch**

Perovsikte 1 : Harald Ade

14:00 **Hysteresis in perovskite-absorber solar cells** **AA.4 11**
Eva L. Unger, Eric T. Hoke, Colin D. Bailie, Michael D. McGehee
Department of Materials Science and Engineering, Stanford University

14:30 **Investigation of APbI3 (A = Cs, NH4+, K, Na, Li) powders as precursors for solution processable inorganic/organic solar cells** **AA.4 12**
*L Dimesso, W Jaegermann
Technische Universitaet Darmstadt, Geo and Materials Science Department, Jovanka-Bontschits-Strasse 2, D-64287 Darmstadt (Germany)

14:45 **“In-depth” analysis of the chemical and electronic surface structure of CH3NH3PbI3-xClx perovskite solar cell absorbers using photoelectron spectroscopy** **AA.4 13**
David E. Starr1, Golnaz Sadoughi2, Evelyn Handick1, Regan G. Wilks1, Jan-Hendrik Alsmeier1, Leonard Köhler1, Mihaela Gorgoi3, Henry Snaith2, and Marcus Bär1, 4
1Solar Energy Research, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, D-14109 Berlin, Germany; 2Department of Physics, Clarendon Laboratory, University of Oxford, Oxford, OX1 3PU, UK; 3Institute for Methods and Instrumentation for Synchrotron Radiation Research, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, D-12489 Berlin, Germany; 4Institut für Physik und Chemie, Brandenburgische Technische Universität Cottbus-Senftenberg, D-03046 Cottbus, Germany

15:00 **Controlling Perovskite Thin Film Morphology: Crystal structure, texture and relative crystallinity** **AA.4 14**
Christopher J. Tassone, Kevin Stone, Eva Unger, Colin Bailie, Michael McGehee, Michael F. Toney
Stanford Synchrotron Radiation Lightsource; Stanford Synchrotron Radiation Lightsource; Stanford University; Stanford University; Stanford University; Stanford Synchrotron Radiation Lightsource

15:15 **Correlating electronic properties of perovskite based hybrid solar cells with layer morphologies derived from analytical transmission electron microscopy** **AA.4 15**
Anne K. Kast 1 2 3, Diana Nanova 2 3 4, Wilfried Hermes 5, Michaela Agari 5, Martin Pfannmoeller 1, Irene Wacker 6, Peter Erk 5, Wolfgang Kowalsky 2 3, Robert Lovrincic 2 3, Rasmus R. Schr?der1 2 6
1 Cryo-EM, CellNetworks, BioQuant, Universit?tsklinikum Heidelberg, Germany; 2 InnovationLab GmbH, Heidelberg, Germany; 3 Institute for High-Frequency Technology, TU Braunschweig, Germany; 4 Kirchhoff-Institute for Physics, Heidelberg University, Germany; 5 BASF SE, Ludwigshafen, Germany; 6 Center for Advanced Materials, Universit?t Heidelberg, Germany

15:30 **Break**

Interfaces and Stability : Jinsong Huang

16:00 **Solution-processed metal oxide and hybrid interfacial layers for robust printing of organic solar cells** **AA.5 1**
Sadok Ben Dkhil, Anil K. THAKUR, Meriem GRACEUR, Qinye BAO, Mats FAHLMAN, Olivier MARGEAT, Jörg ACKERMANN.
Aix Marseille Université, CINaM, UMR CNRS 7325, 13288 Marseille, France;Aix Marseille Université, CINaM, UMR CNRS 7325, 13288 Marseille, France;Aix Marseille Université, CINaM, UMR CNRS 7325, 13288 Marseille, France;Linkoping University, 58183 Linkoping, Sweden;Linkoping University, 58183 Linkoping, Sweden;Aix Marseille Université, CINaM, UMR CNRS 7325, 13288 Marseille, France;Aix Marseille Université, CINaM, UMR CNRS 7325, 13288 Marseille, France

16:15 **Solution-Processed Barium Hydroxide as an Interfacial Dipole Layer Modified Aluminum Doped Zinc Oxide Layer for Highly Efficient Inverted Organic Solar Cells** **AA.5 2**
Hong Zhang*, Tobias Stubhan, Ning Li, Mathieu Turbiez, Gebhard J. Matt, Tayebeh Ameri, Christoph J. Brabec
Hong Zhang, Tobias Stubhan, Ning Li,Gebhard J. Matt, Tayebeh Ameri, Christoph J. Brabec, Institute of Materials for Electronics and Energy Technology (i-MEET), Friedrich- Alexander-University Erlangen-Nuremberg, Martensstraße 7, 91058 Erlangen, Germany; Christoph J. Brabec, Bavarian Center for Applied Energy Research (ZAE Bayern), Haberstraße 2a, 91058 Erlangen, Germany; Hong Zhang, Erlangen Graduate School in Advanced Optical Technologies (SAOT), Paul-Gordan-Straße 6, 91052 Erlangen, Germany; Mathieu Turbiez, BASF Schweiz AG, Schwarzwaldallee 215, CH-4002 Basel, Switzerland

16:30 **Investigation of the interface between interlayers and bulk heterojunctions in organic photovoltaic via impedance spectroscopy** **AA.5 3**
En-Ping Yao, Shiun-Ming Shiu, Yi-Jhe Tsai, Chiu-Sheng Ho, and Wei-Chou Hsu
Institute of Microelectronics, Department of Electrical Engineering, and Advanced Optoelectronic Technology Center, National Cheng Kung University, Tainan 70101, Taiwan, R.O.C.

16:45 **Modulated charge separation at MoOx / organic interfaces containing C60 and/or phtalocya-nines** **AA.5 4**
S. Fengler, N. von Morzé, S. Wiesner, T. Dittrich, M. Rusu, M. Ch. Lux-Steiner
Bereich Solarenergieforschung, Helmholtz-Zentrum Berlin für Materialien und Energie, Lise-Meitner Campus, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

17:00 **Photochemical Transformations in Molybdenum Oxide and Fullerene Adversely Affect the Stability of Bilayer Organic Solar Cells** **AA.5 5**
Roland Hany, Hui Zhang, Frank Nüesch
Empa, Swiss Federal Laboratories for Materials Science and Technology, Lab for Functional Polymers, Dübendorf, Switzerland e-mail: roland.hany@empa.ch phone: +41 58 765 4084

17:15 **Quantitative investigations of time dependent defect growth in degrading OPV electrodes** **AA.5 6**
Roland Roesch, Daniel Fluhr, Burhan Muhsin, Harald Hoppe
Institute of Physics, TU Ilmenau, 98693 Ilmenau, Germany

17:30 **Degradation Patterns of C60-Based Organic Flat Hetero-Junction Solar Cells** **AA.5 7**
Laura Ciammaruchi, Ching W Tang
Dept. of Chemical Engineering, University of Rochester, NY, Rochester, NY, United States; Dept. of Electrical Engineering, University of Rome «Tor Vergata», Rome, Italy

17:45 **Long term stability of ITO free organic solar cells under different aging conditions** **AA.5 8**
Subarna Babu Sapkota (1,2), Birger Zimmermann (1) and Uli Würfel (1,3)
1.Fraunhofer Institute for Solar Energy Systems ISE, Heidenhofstr. 2, 79110 Freiburg, Germany 2.Department of Microsystems Engineering (IMTEK), University of Freiburg, Georges-Köhler-Allee 106, 79110 Freiburg, Germany 3.Freiburg Material Research Center FMF, Stefan-Meier-Str. 21, 79104 Freiburg, Germany

POSTER SESSION 1 : -

18:00 **Interface Investigation of the Alcohol-/Water-Soluble Conjugated Polymer PFN as Cathode Interfacial Layer in Organic Solar Cells** AA.5 9
Shu Zhong1, Rui Wang3, Hong Ying Mao1, Zhicai He2, Hongbin Wu2, Wei Chen1,3*, Yong Cao2
1Department of Chemistry, National University of Singapore, 3 Science Drive 3, Singapore 117543 2Institute of Polymer Optoelectronic Materials and Devices, State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, P. R. China 3Department of Physics, National University of Singapore, 3 Science Drive 2, Singapore 117543

18:00 **An Easy-to-synthesis, Low-cost Hole Transporting Material Based On 3,4-Ethylenedioxythiophene For High Efficiency Perovskite Solar Cells** AA.5 10
Hairong Li 1,2,+, Kunwu Fu 1,2,+, Anders Hagfeldt 3, Michael Grätzel 4, Subodh Mhaisalkar 1,2,* and Andrew C. Grimsdale 1, * +: equal contribution *:Subodh@ntu.edu.sg; acgrimsdale@ntu.edu.sg
1. Energy Research Institute @NTU (ERI@N), Research Techno Plaza, X-Frontier Block, Level 5, 50 Nanyang Drive, Singapore 637553. 2. School of Materials Science and Engineering, Nanyang Technological University, Block N4.1, Nanyang Avenue, Singapore 639798 3. Uppsala University, Disciplinary Domain of Science and Technology, Chemistry, Department of Chemistry - Ångström, Physical Chemistry 4. Laboratory for Photonics and Interfaces, Institute of Chemical Sciences and Engineering, School of Basic Sciences , Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland.

18:00 **Liquid Crystalline Compounds as Additive into Polymer Solar Cells** AA.5 11
Nimet YILMAZ CANLI
Yildiz Technical University, Department of Physics, 34210 Istanbul, Turkey

18:00 **Novel mechanizms of charge carriers separation in third generation solar cells on the base of composite polymeric structures** AA.5 12
B.L. Oksegendler, O.B. Ismailova, M. Marasulov
Institute Ion-Plasma and Laser Technologies of Uzbekistan Academy Sciences

18:00 **Extensive crystallization of active layer for high efficiency in organic solar cells by stamp transfer printing method** AA.5 13
Oh Young Kim, Yong Joo Cho, Jun Yeob Lee
Department of Polymer Science and Engineering, Dankook University

18:00 **Chemical mist deposition of organic for micro-textured crystalline silicon/organic heterojunction solar cells** AA.5 14
R. Ishikawa, N. Miyauchi, T. Imamura, K. Ueno, and H. Shirai
Graduate School of Science and Engineering, Saitama University

18:00 **CuI as Anode buffer layer in Organic solar cell fabrication** AA.5 15
Shaimaa Ali; P. Stadler; N. S. Sariciftci2; S.S.A. Obayaa; D. A. M. Egbe; M. K. El-Mansy;
,Zewail City of Science and Technology, Giza, Egypt; Linz Institute for Organic Solar cells, Linz, Austria; Benha University, Benha, Egypt

18:00 **A facile chemical route for synthesis of Graphene-MoSe2 nanocomposites by solvothermal method** AA.5 16
Shiv Kumar Pandey, Gopal Krishna Mehrotra
Department of Chemistry, M. N. National Institute of Technology, Allahabad 211004, India

18:00 **Incorporation of Reduced Graphene Oxide into P3HT-Oxide Hybrid Polymer Solar Cells** AA.5 17
Wen-Pin Liao, Hsun Wei Cho, Jih-Jen Wu
Department of Chemical Engineering, National Cheng Kung University, Tainan, Taiwan

18:00 **Co-sublimated doped charge transport layers incorporated in polymer solar cells** AA.5 18
A. Barbot, B. Lucas, C. Di Bin, B. Ratier
Institut de recherche Xlim, CNRS UMR 7252, Université de Limoges 123, avenue Albert THOMAS, 87060 LIMOGES

18:00 **On the physical properties of different metallic oxides obtained by direct thermal oxidation** AA.5 19
Sorina Iftimie1,2, R. Mallet2, J. Merigeon2, L. Ion1, S. Antohe1, M. Girtan2
1Faculty of Physics, University of Bucharest, Romania 2LPHIA Laboratory, LUNAM - Angers University, France

18:00 **Understanding the annealing behaviour of nanoparticle organic solar cells** AA.5 20
Krishna Feron, Syahrul Ulum, Natalie P. Holmes, A. L. David Kilcoyne, Warwick J. Belcher, Xiaojing Zhou, Chris J. Fell, Paul C. Dastoor
CSIRO Energy Technology Krishna Feron; Chris J. Fell Centre for Organic Electronics, University of Newcastle Krishna Feron; Syahrul Ulum; Natalie P. Holmes; Warwick J. Belcher; Xiaojing Zhou; Chris J. Fell; Paul C. Dastoor Advanced Light Source, Lawrence Berkeley National Laboratory A. L. David Kilcoyne

18:00 **Modeling charge carrier collection efficiency in DBP/C70 organic solar cells** AA.5 21
S. Galindo, G. Gerling, M. Ahmadpour, JM Asensi*, R. Alcubilla, J. Puigdollers, C. Voz.
Enginyeria Electronica and Center for Research in nanoengineering, Universitat Politecnica Catalunya, Barcelona, (Spain); *Dept Fisica Aplicada i Optica. Universitat de Barcelona. Barcelona (Spain)

18:00 **Influence of molybdenum oxide interface solvent sensitivity on charge trapping in bilayer cyanine solar cells** AA.5 22
Sandra Jenatsch (1), Roland Hany (1), Anna Veron (1), Martin Neukom (2), Simon Züfle (3), Beat Ruhstaller (3), Frank Nüesch (1)
(1) Empa, Swiss Federal Institute for Materials Science and Technology, Laboratory for Functional Polymers, Überlandstrasse 129, 8600 Dübendorf, Switzerland; (2) Fluxim AG, Technoparkstrasse 2, 8406 Winterthur, Switzerland; (3) Zurich University of Applied Sciences, Institute of Computational Physics, Technikumstrasse 9, 8401 Winterthur, Switzerland

18:00 **Maximum Open-Circuit Voltage of Ideal Graphene/P3HT Organic Photovoltaic Interfaces** AA.5 23
Keian Noori, Feliciano Giustino
Department of Materials, University of Oxford, Parks Road, Oxford UK

18:00 **Sequentially deposited perovskite solar cell employing poly-triarylamine hole-transporting polymer** AA.5 24
I.Kaulachs (1), A.Ivanova (1), G.Shlihta (1) , J.Grabis (2), P.Shipkovs (1) , M.Roze (3), J.Kalnachs (1)
1 - Institute of Physical energetics, Aizkraukles Str. 21, Riga, LV 1006, Latvia 2 - Institute of Inorganic chemistry, Miera Str 34, Salaspils-1, LV-2169, Latvia 3 - Riga Technical university, Azenes Str. 14/24, Riga, LV-1048, Latvia

18:00 **Initial Growth and Interface Stability of 1,4,5,8,9,11-hexaazatriphenylene-hexanitrile (HATCN) Layer Studied by In-situ Real Time GI-WAXS** AA.5 25
Hyun Hwi Lee1, Jeong-Hwan Lee2, Jang-Joo Kim2, Hyo Jung Kim3
1Pohang Accelerator Laboratory, POSTECH, Pohang 790-784, Korea 2Department of Materials Science and Engineering and OLED Center Seoul National University, Seoul 151-744, Republic of Korea 3Department of Organic Material Science and Engineering, College of Engineering, Pusan National University, Busan 609-735, Korea

18:00 **Exciton dynamics in ternary hybrid systems of P3HT/CdSe/WS2 nanutubes for for efficient solar cells** AA.5 26
A. Bruno1, C.Borriello1, S. A. Haque2, C. Minarini, T. Di Luccio1
1. ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development, P. Enrico Fermi 1, Portici (NA), Italy 2. Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, UK

18:00 **Solution Processed Polymer/PCBM Bilayer Organic Photovoltaics Having Large Heterojunction Area** AA.5 27
Yoonhee Jang,Jeesoo Seok, Kyung Jin Kim, Kyungkon Kim
Department of Chemistry and Nano Science, Ewha Womans University, Seoul 120-750, Korea

18:00 **Self-consistent relativistic band structure of the CH3NH3PbI3 perovskite** **AA.5 28**
E. Menéndez-Proupin, P. Palacios, P. Wahnón, J. C. Conesa
Departamento de Física, Facultad de Ciencias, Universidad de Chile, Las Palmeras 3425, 780-0003 Ñuñoa, Santiago, Chile ; Instituto de Energía Solar & FyQATA, E.I. Aeronáutica y del Espacio, Universidad Politécnica de Madrid, Spain; Instituto de Energía Solar and Dept. Tecnologías Especiales, E.T.S.I. Telecomunicación, Universidad Politécnica de Madrid, Spain; Instituto de Catálisis y Petroleoquímica, CSIC, Marie Curie 2, 28049 Madrid, Spain

18:00 **Influence of Organic-Inorganic Interfaces in Hybrid Photovoltaics** **AA.5 29**
Jun Yan Lek (1), Teddy Salim (1), Yeng Ming Lam (1,2)
(1) School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798, Singapore; (2) Institute of Materials for Electronic Engineering II, RWTH-Aachen, Sommerfeldstraße 24, D-52074 Aachen, Germany.

18:00 **I-CELIV method for investigation of charge carriers mobilities and recombination in organic solar cells** **AA.5 30**
K. Genevičius, T. Grigaitis, G. Juška
Department of Solid State Electronics, Vilnius University, Saulėtekio al. 9, III k. Vilnius, Lithuania

18:00 **Charge Transfer Properties in P3HT:Graphene Organic Nanocomposites: Effect of Graphene Concentration** **AA.5 31**
R. Bkakri 1*, A. Ltaief 1, O.E. Kusmartseva 2, Mo Song 3, F. V. Kusmartsev 2, A. Bouazizi 1
1 Equipe Dispositifs Electroniques Organiques et Photovoltaïque Moléculaire, Laboratoire de la Matière Condensée et des Nanosciences, Faculté des Sciences de Monastir, Avenue de l'environnement, 5019 Monastir, Tunisia. 2 Department of Physics, Loughborough University, Leicestershire, LE11 3TU, United Kingdom. 3 Department of Materials, Loughborough University, Leicestershire, LE11 3TU, United Kingdom.

18:00 **Electron microscopic investigation of TiO2/NbxOy core-shell nanowires for application in hybrid solar cells** **AA.5 32**
Alena Folger1, Sophia Betzler2, Andreas Wisnet2, Julian Reindl3, Lukas Schmidt-Mende3, Christina Scheu2
1 Max-Planck-Institut für Eisenforschung (MPIE), 81377 Düsseldorf, Germany; 2 Department of Chemistry & Center for NanoScience (CeNS), Ludwig-Maximilians-Universität München, 81377 Munich, Germany; 3 Department of Physics, Universität Konstanz, 78457 Konstanz, Germany

18:00 **Reduction of the Annealing Temperature of Solution-Processed Titanium Oxide for Inverted Organic Solar Cells** **AA.5 33**
Martin Seßler 1,2, Markus Kohlstädt 1,2, Ahmad Saeed 1, Uli Würfel 1,2
1) Fraunhofer Institute for Solar Energy Systems (ISE) Heidenhofstrass e 2, 79110 Freiburg, Freiburg Materials Research Center (FMF) University of Freiburg Stefan-Meier-Strass e 21, 79104 Freiburg

18:00 **Influence of molecular orientation at organic/organic interfaces on on exciton dissociation** **AA.5 34**
M. Aghamohammadi, A. Fern?ndez, A. P?rez, M. Schmidt, A. Go?i, M. Paradinas, C.Ocal and E. Barrena
Instituto de Ciencia de Materiales de Barcelona (ICMAB-CSIC), Campus UAB, 08193

18:00 **Real-time x?ray investigation of the Morphology Formation in Solution Of Polymer_Fullerene Blend Films for Organic Solar Cells** **AA.5 35**
Esther Barrena 1, Monamie Sanyal 2, Benjamin Schmidt-Hansberg 3, Felix Buss 3, Wilhelm Schabel 3
1 Insitut de Ci?ncia de Materials de Barcelona (CSIC), 08193 Bellaterra (Spain) 2 Max Planck Institut f?r Metallforschung, Heisenbergstrasse 3, 70569 Stuttgart (Germany) 3 Institute of Thermal Process Engineering, Karlsruhe Institute of Technology, 76131 Karlsruhe (Germany)

18:00 **Structural and Morphological Characterization of Poly(o-ethoxyaniline) Emeraldine-salt form using XRD, SEM and LeBail FIT** **AA.5 36**
Adriano de S. Silva, Juliana C. Soares, Yvonne P. Mascarenhas, Edgar A. Sanches
Federal University of Amazonas, Department of Physics (UFAM/DF), Manaus/AM, Brazil University of S?o Paulo, Institute of Physics of S?o Carlos (USP/IFSC), S?o Carlos/SP, Brazil

18:00 **Structure and electronic properties of the polymer organic semiconductors P3DOT, P3TOT, and P3HT** **AA.5 37**
N. H. Nickel, M. A. Gluba, and J. Rappich
Helmholtz-Zentrum Berlin für Materialien und Energie, Institut für Silizium Photovoltaik, Kekuléstr. 5, 12489 Berlin, Germany

18:00 **Investigation of the interfacial composition in ternary systems for bulk heterojunction organic photovoltaics** **AA.5 38**
D. Puzzovio (1), M. Seitanidou (1), D. Georgiou (1), A. Paspali (1), A. Laskarakis (1), A. Andreopoulou (2), S. Kakogianni (2), I. Kallitsis (2), S. Logothetidis (1)
(1) Laboratory for Thin Films, Nanosystems and Nanometrology (LTFN), Physics Department, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece (2) Department of Chemistry, University of Patras, 26504, Rio-Patras, Greece

18:00 **Scanning probe microscopy study of MoSe2 as alternative acceptor material in hybrid solar cells** **AA.5 39**
1 : L. Letertre, O. Douhéret, R. Lazzaroni, Ph. Leclère 2 : M. Bougouma 3 : C. Buess-Herman
1 : Laboratory for Chemistry of Novel Materials - Center for Innovation and Research in Materials and Polymers - CIRMAP, University of Mons - Materia Nova (R&D centre), Mons, Belgium. 2 : Laboratory for Physical Chemistry and Electrochemistry, University of Ouagadougou, Burkina Faso. 3 : Laboratory for Analytical Chemistry and Interfacial Chemistry, University of Brussels, Belgium.

18:00 **Charge transport mechanisms in the conductive atomic force microscopy probing of semiconducting polymer thin films** **AA.5 40**
D. Moerman, O. Douh?ret, Ph. Lecl?re, and R. Lazzaroni
Laboratory for Chemistry of Novel Materials - Centre for Innovation and Research in Materials and Polymers - CIRMAP, University of Mons - Materia Nova (R&D centre), Mons, Belgium

18:00 **Hybrid interactions in nanomaterials for photovoltaics: Insights from large scale atomistic simulations** **AA.5 41**
Alessandro Mattoni[1], Pietro Delugas[1,2], Alessio Filippetti[1], Vasco Calzia[1,3], Claudia Caddeo[1,3], Maria Ilenia Saba[1]
[1] Consiglio Nazionale delle Ricerche, Istituto Officina dei Materiali CNR-IOM Cagliari, 09042 Monserrato (CA) [2] Istituto Italiano di Tecnologia - IIT Via Morego 30, 16163 - Genova, Italy [3] Dipartimento di Fisica, Università di Cagliari, 09042 Monserrato (CA) Italy

18:00 **PEDOT:PSS as either electron collecting electrode or hole conducting layer in inverted solar cells: Towards all polymeric bulk heterojunction organic solar cells.** **AA.5 42**
Getachew Adam, Markus Scharber, Niyazi Serdar Sariciftci
Linz Institute for Organic Solar Cells (LIOS), Institute of Physical Chemistry, Johannes Kepler University Linz, Altenbergerstr.69, 4040 Linz, Austria

18:00 **Hybrid Amorphous Silicon Solar Cells** **AA.5 43**
Erenn Ore, Gehan Amaratunga
Department of Engineering, University of Cambridge

18:00 **Study of hybrid heterojunction solar cells containing perovskite and ZnO compounds** **AA.5 44**
Warda Hadouchia a, Jean Rousset b, Denis Tondelier a, Khaoula Jemli d , Pierre Audebert d , Emmanuelle Deleporte e , Bernard Geffroy e , Daniel Lincot b, Yvan Bonnassieux a.
a LPICM, Ecole Polytechnique, CNRS UMR-7647, 91128 Palaiseau, France, b IRDEP,EDF , 78400 Chatou, France, c LICSEN, IRAMIS/NIMBE CEA Saclay 911191 Gif-sur -Yvette, d LPPSM, CNRS UMR 8531, ENS Cachan, 61 Ave Pr?sident Wilson, 94230 Cachan, e Laboratoire Aim? Cotton, ENS Cachan, CNRS, Universit? Paris Sud, 91405 Orsay Cedex, France.

18:00 **Morphology-, Synthesis- and Doping-Independent Tuning of ZnO Work Function by Phenylphosphonates** **AA.5 45**
Nir Kedem (1), Sylke Blumstengel (3), Fritz Henneberger (3), Hagai Cohen (2), Gary Hodes (1), David Cahen (1)
(1) Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, 76100, Israel (2) Chemical Research Support, Weizmann Institute of Science, Rehovot, 76100, Israel (3) Institut für Physik, Humboldt-Universität zu Berlin, 12489 Berlin, Germany

18:00 **Efficient standard and inverted photovoltaic cells using novel charge-selective buffer layer materials** **AA.5 46**
D.K. Susarova, O.A. Mukhacheva, L. A. Frolova, D.V. Novikov, E.A. Khakina and P.A.Troshin
Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, Moscow region, 142432, Russia

18:00 **Structural and optical properties of poly (N-vinyl carbazole) and ZnO nano-particles based nanocomposites** **AA.5 47**
M. Belhaj, C. Dridi, J-C. Valmalette, H. Elhouichet
Universite de Sousse, ISSAT de Sousse / Universite de Monastir, Faculte des Sciences de Monastir, LIMA , TUNISIA IM2NP, Universte du Sud, Toulon Var, France / Centre National de Recherche sur les Mat?riaux Avances, Technopole Borj-Cedria,

18:00 **Improvement in nanomorphology of BHL polymer solar cells by electrostatic field force induced crystallization as a new approach** **AA.5 48**
Fatemeh Davoudi (1), Milad Mehranpour(1), Rasul Ajeian(2), Moosa Nakhaei(2), Saeed Saleh Ardestani(2)
Islamic Azad University, Polymer Department Iran Science and Technology University

18:00 **Improved photovoltaic performance of hybrid solar cells based on Silicon nanowire and P3HT** **AA.5 50**
Rihab EBDELLI, Sadok BEN DKHIL, Walid DACHRAOUI, Ramzi Bourguiga, Joel Davenas
Institut Supérieur des Sciences Appliquées et de Technologie de Kasserine, BP 471 Kasserine1200;Aix Marseille Université, CINaM, UMR CNRS 7325, 13288 Marseille, France; Aix Marseille Université, CINaM, UMR CNRS 7325, 13288 Marseille, France; Laboratoire Physique des Matériaux, Structures et Propriétés Groupe Physique des Composants et Dispositifs Nanométriques, Facultés des sciences de Bizerte,7021 Jarzouna-Bizerte, Tunisia; Ingénierie des Matériaux Polymères, CNRS UMR5223, Université de Lyon, Université Lyon1, 15 boulevard Latarget, F-69622 Villeurbanne, France

18:00 **The investigation of the effect of DIO on morphology and performance of PTB7/PC71BM solar cells** **AA.5 51**
Elif Alturk Parlak and Şerife Sarıoglan
TUBITAK Marmara Research Center, Chemistry Institute, 41470, Gebze, Kocaeli, Turkey

28 May 2014

Perovskite 2 : Maria A. Loi

08:30 **Efficient, colourful and semi-transparent perovskite solar cells** **AA.6 1**
Henry J. Snaith
University of Oxford, Parks Road, Oxford, OX13PU

09:00 **Excitons versus Free Charges: a Photophysical Picture of Organo Lead Halide Perovskite** **AA.6 2**
Valerio D?Innocenzo, Giulia Grancini, Marcelo Alcocer, Ajay Ram Srimath Kandada, Samuel D. Stranks, Michael M. Lee, Guglielmo Lanzani, Henry J. Snaith, Annamaria Petrozza
Center for Nano Science and Technology @Polimi, Istituto Italiano di Tecnologia, via Giovanni Pascoli 70/3, 20133, Milan, Italy; Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci, 32, 20133 Milano, Italy. University of Oxford, Clarendon Laboratory, Parks Road, Oxford, OX1 3PU, United Kingdom;

09:15 **Charge carrier dynamics in organometal halide perovskites** **AA.6 3**
Tom J. Savenije, Carlito Ponseca, Mohamed Abdellah, Kaibo Zheng, Tonu Pullerits, Yartsev Arkady, and Villy Sundstrom
Tom J. Savenije: Optoelectronic Materials Section, Department of Chemical Engineering, Delft University of Technology, Delft, The Netherlands Carlito Ponseca, Mohamed Abdellah, Kaibo Zheng, Tonu Pullerits, Yartsev Arkady, and Villy Sundstrom: Department of Chemical Physics, Lund University, Lund, Sweden

09:30 **Break**

Organic PV : Olle Inganäs

10:30 **Two-dimension-conjugated polymer photovoltaic materials** **AA.7 1**
Yongfang Li
Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

11:00 **INTERPLAY BETWEEN ORDERING EFFECTS AND SOLAR CELL PERFORMANCE IN PBDTTPD POLYMERS** **AA.7 2**
Pierre M. Beaujuge
Division of Physical Sciences & Engineering, Solar & Photovoltaic Engineering Research Center, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

11:30 **Low band gap conjugated polymers comprising TBTBT unit: novel electron donor materials for efficient organic solar cells** **AA.7 3**
Pavel A. Troshin, Alexander V. Akkuratov, Diana K. Susarova, Dmitry V. Novikov and Lyubov A. Frolova
Institute for Problems of Chemical Physics of RAS, Semenov ave. 1, Chernogolovka, Moscow region, 142432, Russia. E-mail: troshin2003@inbox.ru

11:45 **Small molecule OPV: From the lab to roll-to-roll production** **AA.7 4**
Bert Maennig
Heliatek GmbH Treidlerstrasse 3 01139 Dresden, Germany

12:00 **Medium Bandgap Conjugated Polymer Merging a Fluorinated Quinoxaline Moiety for Efficient and Air-Stable Polymer Solar Cells** **AA.7 5**
Wei-Hsuan Tseng, Hsieh-Chih Chen, Chi-Chang Liu, Yun-Chen Chien, Yu-Sin Wu, Shih-Hung Liu, Chih-I Wu, and Pi-Tai Chou
Dr. W.-H. Tseng, Prof. C.-I Wu Department of Electrical Engineering and Graduate Institute of Electrooptical Engineering National Taiwan University, Taipei 106, Taiwan Dr. H.-C. Chen, C.-C. Liu, Y.-C. Chien, Y.-S. Wu, Dr. S.-H. Liu, Prof. P.-T. Chou Department of Chemistry National Taiwan University Taipei, 106 (Taiwan)

12:15 **Homojunction organic solar cells based on hydrogen-bonded pigments** **AA.7 6**
Eric Daniel Glowacki, Halime Coskun, Marek Havlicek, Matthew S. White, Markus C. Scharber, Niyazi Serdar Sariciftci
Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University, Linz, Austria

12:30 **Lunch**

Spectroscopy on Organic Semiconductors : Matthew S. White

14:00 **Organic OPV materials with enhanced charge separating properties** AA.8 1
F. Jahani Bahnamiri,1,2 S. Torabi,1 H. D. de Gier1, J. Douvogianni2, R. W. A. Havenith,1,3 R. C. Chiechi,1,2 L. J. A. Koster1, and J. C. Hummelen,1,2
1 Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands 2 Stratingh Institute for Chemistry, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands 3 Ghent Quantum Chemistry Group, Department of Inorganic and Physical Chemistry, Ghent University, Krijgslaan 281 (S3), B-9000 Gent, Belgium

14:30 **Electronic Structure of Fullerene Heterodimer in Bulk-Heterojunction Blends** AA.8 2
Andreas Sperlich, Oleg G. Poluektov, Jens Niklas, Kristy L. Mardis, Serge Beaupre, Mario Leclerc, Carmen Villegas, Sule Erten-Ela, Juan L. Delgado, Nazario Martin, Vladimir Dyakonov
Experimental Physics VI, Julius Maximilian University of Wurzburg and ZAE Bayern, 97074 Wurzburg; Chemical Sciences and Engineering Division, ANL, Argonne, IL 60439, USA; Chemical Sciences and Engineering Division, ANL, Argonne, IL 60439, USA; Department of Chemistry and Physics, Chicago State University, Chicago IL 60628, USA; Department of Chemistry, Universite Laval, Quebec City, Quebec G1V 0A6, Canada; Department of Chemistry, Universite Laval, Quebec City, Quebec G1V 0A6, Canada; Departamento de Quimica Organica, Facultad de Ciencias Quimicas, Universidad Complutense de Madrid, Spain and IMDEA-Nanociencia, Ciudad Universitaria de Cantoblanco, 28049 Madrid, Spain; Departamento de Quimica Organica, Facultad de Ciencias Quimicas, Universidad Complutense de Madrid, Spain and IMDEA-Nanociencia, Ciudad Universitaria de Cantoblanco, 28049 Madrid, Spain; Departamento de Quimica Organica, Facultad de Ciencias Quimicas, Universidad Complutense de Madrid, Spain and IMDEA-Nanociencia, Ciudad Universitaria de Cantoblanco, 28049 Madrid, Spain; Departamento de Quimica Organica, Facultad de Ciencias Quimicas, Universidad Complutense de Madrid, Spain and IMDEA-Nanociencia, Ciudad Universitaria de Cantoblanco, 28049 Madrid, Spain; Experimental Physics VI, Julius Maximilian University of Wurzburg and ZAE Bayern, 97074 Wurzburg

14:45 **Ultrafast Charge Generation in Novel Push-Pull Polymers** AA.8 3
Maxim S. Pshenichnikov, Vlad G. Pavelyev, Almis Serbenta, Paul H. M. van Loosdrecht
Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG Groningen, the Netherlands

15:00 **Observation of vibrational coherences and multiexciton states during singlet fission in pentacene and its derivatives** AA.8 4
Artem A. Bakulin, Donatas Zigmantas, Dassia Egorova, Sarah E. Morgan, Alex Chin, Akshay Rao
FOM institute AMOLF, Science Park 104, Amsterdam 1098 XG, The Netherlands; Department of Chemical Physics, Lund University, P.O. Box 124, 22100 Lund, Sweden; Physical Chemistry, Christian-Albrechts-Universität zu Kiel, D-24098 Kiel, Germany; Cavendish laboratory, University of Cambridge, JJ Thomson Ave, CB3 0HE, Cambridge, UK;

15:15 **Ultrafast Electron Transfer at Organic Semiconductor Interfaces: Dependence on Molecular Orientation** AA.8 5
Alexander L. Ayzner, Dennis Nordlund, Dohwan Kim, Zhenan Bao, Michael F. Toney
Stanford Synchrotron Radiation Lightsource, 2575 Sand Hill Road, Menlo Park, CA 94025, USA Chemical Engineering Department, Stanford University, Stanford, CA, 94305-5025, USA

15:30 **Break**

16:00 **PLENARY SESSION**

Light Trapping OPV : Serdar N. Sariciftci

08:30 **Light and charge management with organic photovoltaic devices** AA.9 1
Zheng Tang1, Zandra George2, Anders Elfwing1, Kristofer Tvingstedt1, Wolfgang Tress1, Mats Andersson2, Olle Inganäs1
1Biomolecular and organic electronics, IFM, Linköpings Universitet, Linköping, Sweden 2Department of Chemical and Biological Engineering/Polymer Technology, Chalmers University of Technology, SE-412 96 Göteborg, Sweden

09:00 **Plasmonic engineering for performance and stability enhancement of air processed organic photovoltaics** AA.9 2
G. Kakavelakis1, D. Konios1, E. Stratakis1,2, E.Koudoumas1, E.Kymakis1
1. Center of Materials Technology and Photonics & Electrical Engineering Department, Technological Educational Institute (TEI) of Crete, Heraklion 71004 Crete, Greece ; 2. Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, P.O. Box 1527, 711 10 Heraklion Crete, Greece

09:15 **Which one is on top? : Comprehensive study in plasmonic organic solar cell.** AA.9 3
Seung Joo Lee, Abd. Rashid Mohd Bin Yusoff, Jin Jang*.
Advanced Display Research Center in Kyung Hee University in korea.

09:30 **Break**

Tandem and Multi-Absorber SC : Wei You

10:30 **Multi-junction polymer solar cells and water splitting** AA.10 1
Rene Janssen
Eindhoven University of Technology, The Netherlands

11:00 **Efficient polymer tandem modules and solar cells by doctor blading** AA.10 2
Jonas Hanisch, Tina Wahl, Cordula Wessendorf, Erik Ahlswede
Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW)

11:15 **PbS quatum dots in hybrid inorganic-organic tandem solar cells** AA.10 3
M.J. Speirs, B.G.H.M Groeneveld, L. Protesescu, M. Kovalenko, M.A. Loi
M.J. Speirs; B.G.H.M Groeneveld; M.A. Loi 1. Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, Groningen, 9747 AG, The Netherlands. L. Protesescu; M. Kovalenko 2. ETH, Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, Wolfgang-Pauli-Str. 10, 8093 Zurich, Switzerland

11:30 **Using multiple absorbers for improved spectral absorption in high efficiency organic solar cells** AA.10 4
Barry P. Rand,1,2 David Cheyns,3 Kjell Cnops,3 Bregt Verreet1
1 Department of Electrical Engineering and 2 Andlinger Center for Energy and the Environment, Princeton University, Princeton, NJ USA; 3 imec, Kapeldreef 75, 3001 Leuven Belgium

12:00 **Small Molecule Organic Solar Cells with Ternary Absorption Layers – A Study to evaluate the origin of VOC** AA.10 5
Beatrice Beyer, Wolfgang Tress, Karl Leo
Fraunhofer Institution for Organics, Materials and Electronic Devices (COMEDD), Maria-Reiche-Str, 02, 01109 Dresden, Germany; Institut für Angewandte Photophysik, Georg-Bähr-Str.01, 01069 Dresden, Germany

12:15 **IR sensitization of an indene-C60 bisadduct (ICBA) in ternary organic solar cells** AA.10 6
Tayebeh Ameri*,1, Thomas Heum?ller1, Parisa Khoram1, Derya Baran1, Silke Rathgeber2, and Christoph J. Brabec1
1 Institute of Materials for Electronics and Energy Technology (I-MEET), Friedrich-Alexander University Erlangen-Nuremberg, Martensstrasse 7, 91058 Erlangen, Germany 2 Institute for Natural Sciences, Physics Department, University of Koblenz-Landau, Universit?tsstra?e 1, 56070 Koblenz, Germany * E-mail: tayebeh.ameri@ww.uni-erlangen.de

12:30 **Lunch**

Quantum-Dots and DSSC : Eric Glowacki

14:00 **Improved Performance of Lead Sulfide Quantum Dot Solar Cells by Introducing Type-I Heterojunction Centers** AA.11 1
Zhenhua Sun, Gary Sitbon, Thomas Pons, Zhuoying Chen
Laboratoire de Physique et d'Etude des Matériaux (LPEM), UMR 8213, ESPCI/CNRS/Université Pierre et Marie Curie, 10 Rue Vauquelin, 75005 Paris, France

14:15 **Size and shape fine-tuning of SnO2 and Zn2SnO4 nanoparticles for highly efficient and stable dye-sensitized solar cells.** AA.11 2
Ludmila Cojocaru,a Céline Olivier,a Lionel Hirsch,b Thierry Toupancea*
a Université de Bordeaux, Institut des Sciences Moléculaires, UMR 5255 CNRS, 351 Cours de la Libération, F-33405 Talence Cedex, France. b Université de Bordeaux, Laboratoire de l'Intégration du Matériau au Système, UMR 5218 CNRS, 16 Avenue Pey-Berland, 33607 Pessac Cedex, France.

14:30 **Hybrid Solar Cells using PbS quantum dots and a low-bandgap polymer** AA.11 3
S. Kahmann, L. Protesescu, M. Kovalenko, C. J. Brabec, M. A. Loi
Institute for Materials in Electronics and Energy Technology, Friedrich-Alexander University Erlangen-Nuremberg, Germany; Zernike Institute for Advanced Materials, University of Groningen, The Netherlands; Department of Chemistry and Applied Biosciences, ETH Zürich, Switzerland; EMPA-Swiss Federal Laboratories for Materials Science and Technology, Switzerland;and Bavarian Centre for Applied Energy Research (ZAE Bayern), Erlangen, Germany

14:45 **Highly stable dye solar cells based on thermally cross-linkable polydimethylsiloxanes** AA.11 4
Michele Manca, Gian Luca De Gregorio, Maria Pia Cipolla, Roberto Giannuzi, Rita Agosta, Luisa De Marco and Giuseppe Gigli
Center for Biomolecular Nanotechnologies - Fondazione Istituto Italiano di Tecnologia - Via Barsanti sn - 73010 Arnesano (Lecce) - ITALY

15:00 **A combined electronic and optical study on hybrid metal oxide-polymer interfaces** AA.11 5
Philipp Ehrenreich (1), Jonas Weickert (1), Laura-Isabelle Dion-Bertrand (2), Francoise Provencher (2), Francis Paquin (2), Carlos Silva (2), Lukas-Schmidt-Mende (1)
(1) Department of Physics, University of Konstanz, POB M 680, Constance 78457, Germany; (2) Département de physique et Regroupement québécois sur les matériaux de pointe, Université de Montréal, C.P. 6128, Succursale centre-ville, Montréal, Québec, Canada H3C 3J7

15:15 **Ultrafast Electron Transfer from P3HT to Pyridine-Capped InP Quantum Dots** AA.11 6
Jun Yin1, Manoj Kumar1, Qiong Lei2, Majid Panahandeh-Fard1, Daniele Cortecchia1, Zilong Wang1,3, Raavi Sai Santosh Kumar1,and Cesare Soci1,3,*
1 Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371 2 Division of Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371 3 Centre for Disruptive Photonic Technologies, Nanyang Technological University, 21 Nanyang Link, Singapore 637371

15:30 **Break**

Hybrid Solar Celles 1 : Markus C. Scharber

16:00 **Interface Engineering of Hybrid Graphene@Nanocrystals for High-Performance Polymer Solar Cells** AA.12 1
Kai Yuan, Lie Chen, Yiwang Chen*
Institute of Polymers/Department of Chemistry, Nanchang University, 999 Xuefu Avenue, Nanchang 330031, China

16:30 **Morphological and optical studies of P3HT: Ni-complexes thin films for organic bulk heterojunction solar cells** AA.12 2
D. Hernandez(1,5), D. Le Borgne(1,5), K. I. Moineau-Chane Ching (1,5), C. Villeneuve(2), S. Leroy(2), E. Bedel-Pereira(3,5), I. Séguy(3,5), F. Alary(4), J.L. Heully(4)
1_CNRS, LCC, 205 route de Narbonne, Toulouse Cedex 4, France. 2_Laplace, Université Paul Sabatier, 118 route de Narbonne, 31062 Toulouse, France. 3_LAAS-CNRS, 7 avenue du Colonel Roche, 31077 Toulouse Cedex 4, France. 4_LCPQ-IRSAMC, 118 route de Narbonne, F-31077 Toulouse Cedex 4, France. 5_Université de Toulouse; UPS, INPT; LCC 31077 Toulouse (France)

16:45 **Charge Generation at Polymer/Metal Oxide Interface: from Molecular Scale Dynamics to Mesoscopic Effects** AA.12 3
Ajay Ram Srimath Kandada1, Simone Guarnera1,2, Francesco Tassone1,Guglielmo Lanzani1,2 and Annamaria Petrozza1
1 Center for Nano Science and Technology @ PoliMi, Istituto Italiano di Tecnologia, via Pascoli 70/3 20133 Milano, Italy 2 Dipartimento di Fisica, Piazza Leonardo da Vinci 32, 20133 Milano, Italy

17:00 **Flexible Polymer/Copper Indium Sulfide Hybrid Solar Cells Based on the Metal Xanthate Route and Low Temperature Annealing using Hexylamine** AA.12 4
Christopher Fradler 1,2, Thomas Rath 1,2,*, Sebastian Dunst 1,5, Ilse Letofsky-Papst 3, Robert Saf 1, Birgit Kunert 4, Ferdinand Hofer 3, Roland Resel 4, and Gregor Trimmel1,2
1) Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria 2) Christian Doppler Laboratory for Nanocomposite Solar Cells, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria 3) Institute for Electron Microscopy and Nanoanalysis, Graz University of Technology, & Graz Centre for Electron Microscopy, Steyrergasse 17, 8010 Graz, Austria 4) Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria 5) Polymer Competence Center Leoben GmbH, Roseggerstra?e 12, 8700 Leoben, Austria

17:15 **Recent progress in crystalline Si/organic heterojunction solar cells** AA.12 5
Hajime Shirai, Keiji Ueno, Ryo Ishikawa, Qiming Liu
Saitama University

17:30 **Highly efficient hybrid n-silicon/PEDOT:PSS inversion layer solar cells** AA.12 6
Sara Jäckle(1), Matthias Pietsch(1), Sebastian Schmitt(1), Silke Christiansen(1,2)
(1) Max Planck Institut for the science of light, Erlangen, Germany (2) Helmholtz-Zentrum Berlin, Berlin, Germany

17:45 **Polymer/nanocrystal hybrid solar cells: Influence of precursor structure on film nanomorphology, charge generation and device performance** AA.12 7
Thomas Rath (1), Andrew MacLachlan (1), Heinz Amenitsch (2), Simon Dowland (1), Astrid-Caroline Knall (1,3), Gregor Trimmel (3), Saif A. Haque (1)
(1) Department of Chemistry, Imperial College London, South Kensington Campus, Exhibition Road, SW7 2AZ, UK (2) Institute of Inorganic Chemistry, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria (3) Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria

POSTER SESSION 2 : -

18:00 **Investigation of Photodegradation in Polymer Solar Cells blended with different Fullerenes Derivatives** AA.12 8
Tsegaye Endalea, Enrico Sovernigob, Andrea Radivob,c, Simone Dal Ziliob, Alessandro Pozzatob,d, Teketel Yohannesa, Massimo Tormenb,d
aDepartment of Chemistry, Addis Ababa University, P. O. Box: 1176, Addis Ababa, Ethiopia bIOM-CNR Area Science Park, Basovizza, S.S. 14,Km. 163.5, 34149 Trieste, Italy cUniversity of Trieste, Piazzale Europa,1 34127 Trieste, Italia dThunderNIL s.r.l. via Ugo Foscolo 8, 35131 Padova Italy

18:00 **Study of Nanocomposite Copper Phthalocyanine Embedded into Polymer Host** AA.12 9
N. Touka, B.Boudine , O.Halimi and Sebais M.
University of Bouira, department of physics 01000, Algeria.; Laboratory of Crystallography, Department of Physics, University of Constantine, Road Ain El bey 25000, Algeria

18:00 **Solution processable thickness tolerable photoactive materials and application to sub-modules polymer solar cells** **AA.12 10**
Won Suk Shin1,2, Muhammad Jahandar1,2, Thi Thu Trang Bui1,2, Sang Kyu Lee1,2, Jong-Cheol Lee1,2 and Sang-Jin Moon1,2
1 Energy Materials Research Center, Advanced Materials Division, Korea Research Institute of Chemical Technology, Daejeon 305-600, Korea; 2 Department of Nanomaterials Science and Engineering, University of Science and Technology(UST), Daejeon, 305-350, Korea

18:00 **A combined strategy to realize efficient photoelectrodes for low temperature fabrication of dye solar cells** **AA.12 11**
A. Alberti1*#, . De Marco3#, G. Pellegrino1, G.G. Condorelli2, R. Giannuzzi3, R. Scarfiello3, M. Manca3, C.Spinella1, G.Gigli3,4,5 and A. La Magna1 # These authors contributed equally
1CNR-IMM Zona industriale, Strada VIII 5, 95121, Catania, Italy; 2 Università degli Studi di Catania and INSTM UdR Catania; Viale Andrea Doria 6, Catania; 3 CBN, Center for Biomolecular Nanotechnologies, Fondazione Istituto Italiano di Tecnologia - Energy Platform Via Barsanti, 73010 Arnesano (Lecce), Italy; 4 National Nanotechnology Laboratory (NNL), CNR Istituto Nanoscienze, c/o Distretto Tecnologico, Via Arnesano km 5, 73100 Lecce, Italy; 5 Dipartimento di Matematica e Fisica “E. De Giorgi” - Università del Salento, via per Arnesano, 73100 Lecce, Italy

18:00 **The origin of the low FF of p-Type dye-sensitized solar cells** **AA.12 12**
Torben Daeneke, Ze Yu, Geroge P. Lee, Dongchuan Fu, Noel W. Duffy, Satoshi Makuta, Yasuhiro Tachibana, Leone Spiccia, Amaresh Mishra, Peter Bäuerle, Udo Bach
CSIRO; Monash University; Monash University; Monash University; CSIRO; RMIT; RMIT; Monash University; University of Ulm; University of Ulm; CSIRO & Monash University

18:00 **Experimental Investigation and Theoretical Calculation on Novel Donor-Acceptor Copolymers for for Organic Photovoltaics** **AA.12 13**
Lie Chen, Zhiqiang Deng, Feiyan Wu, Yiwang Chen
Institute of Polymers, Nanchang University, 999 Xuefu Avenue, Nanchang 330031, China

18:00 **Charge Transfer Dynamics in Polyfluorene-co-Bithiophene blends with Different Ordered Side-Chains** **AA.12 14**
Olivia Kettner*1, Andreas Pein2, Philip Chow3, Gregor Trimmel2, Bettina Friedel1
1 Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, A-8010 Graz, AUSTRIA; 2 Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9, A-8010 Graz, AUSTRIA; 3 Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, CB3 0HE Cambridge, UNITED

18:00 **Hyperbranched Polythiophene Derivatives Containing Tetrachloroperylene Bisimide as Bridging Moiety for Polymer Solar Cells** **AA.12 15**
Tz-Shiuan Lin1, Sheng-Hsiung Yang1,*, Yu-Zhang Huang2, Husan-De Li2, Yu-Chiang Chao2
1 Institute of Lighting and Energy Photonics, National Chiao Tung University; 2 Department of Physics, Chung-Yuan Christian University

18:00 **Control of polymer aggregation in polymer-fullerene bulk heterojunction solar cells and correlation with photovoltaic parameters** **AA.12 16**
Christian Kästner 1, Daniel Ayuk Mbi Egbe 2, Harald Hoppe 1
1 Institute of Physics, Ilmenau University of Technology, Langewiesener Str. 22, 98693 Ilmenau, Germany 2 Linz Institute for Organic Solar Cells, Johannes Kepler University Linz, Altenbergerstr. 69, 4040 Linz, Austria

18:00 **Impact of the donor block structure on the charge separation kinetics of a donor/acceptor conjugated co-oligomers based on perylene diimide** **AA.12 17**
L. Liu1, T. Roland1, J. Léonard1, P-O. Schwartz1, S. Méry1, O. Yurchenko2, A. Ruff3, S. Ludwigs2,3, S. Haacke1
1Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg – CNRS, 67034 Strasbourg, France, 2Freiburg Material Research Center and Freiburg Institute for Advanced Studies, University of Freiburg, 79104 Freiburg, Germany, 3Institute of Polymer Chemistry, University of Stuttgart, 70569 Stuttgart, Germany

18:00 **Multichromophoric sensitizers by antenna effect in solid state dye sensitized solar cells** **AA.12 18**
B. LOUAHEM M’SABAH, A. El HAJJ, R. ANTONY, B. RATIER, B. LUCAS, J.BOUCLÉ
XLIM UMR CNRS 7252

18:00 **Study of optical anisotropy with correlation between the structural and electrical properties of CuIn5S8 thin films nano-engineered by glancing angle deposition.** **AA.12 19**
F. Chaffar Akkari (1), A. Sinaoui (1), B. Gallas (2) and M. Kanzari (1)
(1): laboratoire de photovoltaïque et matériaux semiconducteurs. (2): Institut des NanoSciences de Paris

18:00 **Naphthodithiophene based donor molecules for solution-processed small-molecule solar cells** **AA.12 20**
Jong-Cheol Lee, * Sanjaykumar S R, Gururaj P. Kini, Sang Kyu Lee, Won Suk Shin, Sang-Jin Moon
Energy Materials Research Centre, Korea Research Institute of Chemical Technology, Daejeon 305-600, South Korea

18:00 **Electric and Photoelectric Parameters of MEH-PPV Polymer Layers** **AA.12 21**
J. Toušková1*, J. Toušek1, Z.Remeš 2, S.Daniš 3, P.Urbánek 4, I.Kuřitka 4
1 Charles University in Prague, Faculty of Mathematics and Physics, Department of Macromolecular Physics, V Holešovičkách 2, 180 00 Prague 8, Czech Republic 2 Institute of Physics, Academy of Sciences of the Czech Republic, v.v.i., Cukrovarnická 10, 162 00 Prague 6, Czech Republic 3 Charles University in Prague, Faculty of Mathematics and Physics, Department of Condensed Matter, Ke Karlovu 5, 121 16 Prague 2 4 Tomáš Bat˘a University in Zlín, Faculty of Technology, 762 72 Zlín, Czech Republic

18:00 **Strategy for enhancing the dielectric constant of organic semiconductors without sacrificing solubility and charge carrier mobility** **AA.12 22**
S. Torabi,1 F. Jahani Bahnamiri,1,2 I. Van Severen,3 S. Patil,4 R. W. A. Havenith,1,5 R. C. Chiechi,1,2 L. Lutsen,6 D. Vanderzande,3,6 T. J. Cleij,3,7 J. C. Hummelen,1,2, L. J. A. Koster1
1 Zernike Institute for Advanced Materials, Nijenborgh 4, 9747 AG Groningen, The Netherlands; 2 Stratingh Institute for Chemistry, Nijenborgh 4, 9747 AG Groningen, The Netherlands; 3 Institute for Materials Research (IMO), Hasselt University, Universitaire Campus, Building D, Diepenbeek, Belgium; 4 Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore 560012, India; 5Ghent Quantum Chemsitry Group, Department of Inorganic and Physical Chemistry, Ghent University, Krijgslaan 281 (S3), B-9000 Gent, Belgium; 6 IMEC, IMOMEC Associated Laboratory, Wetenschapspark 1, Diepenbeek, Belgium; 7 Maastricht Science Programme, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands;

18:00 **Active tuning of the ground state in aromatic hydrocarbon** **AA.12 23**
Satoshi Heguri, Quynh T. N. Phan, Yoichi Tanabe, Hidekazu Shimotani, and Katsumi Tanigaki
WPI-Advanced Institute for Materials Research (WPI-AIMR), Electronic Materials Physics, Tohoku University, 1-1 2 Katahira, Sendai, Japan., Department of Physics, Graduate School of Science, Tohoku University, 6-3 Aoba, Aramaki, Aoba-ku, Sendai, Japan., Department of Physics, Graduate School of Science, Tohoku University, 6-3 Aoba, Aramaki, Aoba-ku, Sendai, Japan., Department of Physics, Graduate School of Science, Tohoku University, 6-3 Aoba, Aramaki, Aoba-ku, Sendai, Japan., WPI-Advanced Institute for Materials Research (WPI-AIMR), Electronic Materials Physics, Tohoku University, 1-1 2 Katahira, Sendai, Japan.

18:00 **Solution-processed bulk-heterojunction organic solar cells employing Ir complexes as solo electron donors** **AA.12 24**
Hongyu Zhen, Qiong Hou, Kan Li, Zaifei Ma, Simone Fabiano, Feng Gao and Fengling Zhang
State key laboratory of Modern Optical Instrumentation, Zhejiang University, Hangzhou 310027, China; School of Chemistry & Environment, South China Normal University, Guangzhou, 510006, China; Department of Physics, Chemistry and Biology (IFM), Linkoping University, Linkoping SE-581 83, Sweden; Department of Science and Technology, Organic Electronics, Linköping University, SE-60174, Norrköping, Sweden

18:00 **Novel Star Shaped Molecules for Organic Photovoltaics: Ultrafast Charge Dynamics** AA.12 25

Oleg V. Kozlov [1,2], Vlad G. Pavelyev [1], Almis Serbenta [1], Yuriy N. Luponosov [3], Sergei A. Ponomarenko [3], Dmitry Yu. Paraschuk [2], Nina Kausch-Busies [4], Maxim S. Pshenichnikov [1]
[1] Zernike Institute for Advanced Materials, University of Groningen, The Netherlands; [2] International Laser Center and Faculty of Physics, Moscow State University, Russia; [3] Institute of Synthetic Polymeric Materials of the Russian Academy of Science, Russia; [4] Heraeus Precious Metals GmbH & Co. KG, Conductive Polymers Division, Germany

18:00 **Fullerene monocycloadducts with reduced electron affinity as promising n-type materials for organic solar cells** AA.12 26

A. V. Mumyatov, D. V. Novikov, O. A. Mukhacheva, D. K. Susarova, F. A. Prudnov, A. E. Goryachev and P. A. Troshin
Institute for Problems of Chemical Physics, Russian Academy of Sciences, Academician Semenov av. 1, Chernogolovka, Moscow region, 142432, Russia

18:00 **Effect of the fullerene component on the performance of bulk heterojunction organic solar cells based on the PPV-PPE copolymers** AA.12 27

O. A. Mukhacheva (1), A. E. Goryachev (1), D. A. M. Egbe (2), N. Serdar Sariciftci (2), and P. A. Troshin (1)
1 nstitute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, Moscow region, 142432, Russia, Email: molgaa@gmail.com. 2 Linz Institute for Organic Solar Cells (LIOS), Johannes Kepler University Linz, Altenbergerstrasse 69, A-4040 Linz, Austria

18:00 **Embeeding of IrQ(ppy)2 organometallic compounds in polypyrrole conducting polymer for OLED`s applications** AA.12 28

C.C. Ciobotaru*, S. Polosan,
National Institute for Materials Physics, Bucharest-Magurele 077125, Romania

18:00 **Tailor- made absorber polymers for OPV- from synthesis to formulation development** AA.12 29

S. Janietz, A. Lange, St. Albrecht, D. Neher
Fraunhofer Institute Applied Polymer Research, Geiselbergstr. 69, D-14476 Potsdam, Germany; Institut für Physik und Astronomie, Universität Potsdam, Karl -Liebknechtstr. 24-25, 14476 Potsdam Germany

18:00 **An accurate technique for estimating the open circuit voltage of organic bulk heterojunction solar cells** AA.12 30

D.V. Novikov (1, 2), A.V. Akkuratov (2), A.V. Mumyatov (2), D.K. Susarova (2), O.A. Mukhacheva (2), E. D. Levchenkova (2), P.A. Troshin (2)
(1) Institute of Energy Problems for Chemical Physics (Branch) of the Russian Academy of Sciences, Academician Semenov avenue 1, Chernogolovka, Moscow region, 142432 Russian Federation; (2) Institute for Problems of Chemical Physics of the Russian Academy of Sciences, Academician Semenov avenue 1, Chernogolovka, Moscow region, 142432 Russian Federation

18:00 **Understanding the Role of Graphene in TiO2/Graphene Composite photoelectrodes in Dye-Sensitized Solar Cells (DSSC)** AA.12 31

Y. Kusumawati (a,b), Th. Pauporté (a), M. A. Martoprawiro (b)
(a) Laboratoire d'Electrochimie, Chimie des Interfaces et Modélisation pour l'Energie. Ecole Nationale Supérieure de Chimie de Paris, 11 rue P. et M. Curie, 75231 Paris cedex 05, France; (b) Laboratorium Kimia Fisik dan Anorganik, Faculty of Mathematics and Sciences, Insitut Teknologi Bandung (ITB). Jl. Ganesha 10, Bandung, 40132, Indonesia.

18:00 **Effects of Oxide Nanoparticle Size and Shape on Electronic Structure, Charge Transport and Recombination in Dye-Sensitized Solar Cell Photoelectrodes** AA.12 32

M.Hosni (a,b), Y. Kusumawati (a), Th. Pauporté (a), S. Farhat (b), N. Jouini (b)
(a)Laboratoire d'Electrochimie, Chimie des Interfaces et Modélisation pour l'Energie.Ecole Nationale Supérieure de Chimie de Paris, 11 rue P. et M. Curie 75231 Paris cedex 05, France; (b) Laboratoire des Sciences des Procédés et des Matériaux, LSPM UPR 3407, Université Paris 13/ CNRS, Sorbonne Paris Cite, 93430 Villetaneuse, France

18:00 **Degradation of organic thin films for photovoltaics by irradiation from the visible to the soft X-ray spectral range** AA.12 33

Erik Darlatt, Michael Kolbe, Alexander Gottwald, Mathias Richter, Cosmin Lupulescu, Friedrich Roth, Tiberiu Arion, Wolfgang Eberhardt
Erik Darlatt; Michael Kolbe; Alexander Gottwald; Mathias Richter: PTB – Physikalisch-Technische Bundesanstalt, Abbestraße 2-12, 10587 Berlin, Germany_____ Cosmin Lupulescu: Institute of Optics and Atomic Physics, TU Berlin, Straße des 17. Juni 135, 10623 Berlin, Germany____Friedrich Roth: Center for Free-Electron Laser Science/DESY, Notkestraße 85, 22607 Hamburg, Germany___Tiberiu Arion: Center for Free-Electron Laser Science/DESY, Notkestraße 85, 22607 Hamburg, Germany and Institut für Experimentalphysik, Universität Hamburg, Luruper Chaussee 149, 22761 Hamburg, Germany___Wolfgang Eberhardt:Institute of Optics and Atomic Physics, TU Berlin, Straße des 17. Juni 135, 10623 Berlin, Germany and Center for Free-Electron Laser Science/DESY, Notkestraße 85, 22607 Hamburg, Germany

18:00 **Investigation of a promising small molecule for organic photovoltaïcs: Ultrafast spectroscopy of a new Bodipy derivative** AA.12 34

Alexandre Cheminal, Thomas Bura, Laure Biniek, Nicolas Leclerc, Jérémie Leonard, Martin Brinkmann, Raymond Ziessel, Stefan Haacke
Institut de Physique et Chimie des Matériaux de Strasbourg CNRS-UDS; Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé; Intitut Charles Sadron, Strasbourg; Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé; Institut de Physique et Chimie des Matériaux de Strasbourg CNRS-UDS; Intitut Charles Sadron, Strasbourg; Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé; Institut de Physique et Chimie des Matériaux de Strasbourg CNRS-UDS

18:00 **Low-cost plasmonic solar cells by chemical spray pyrolysis method** AA.12 35

M. Krunks1, A. Katerski1, I. Oja Acik1, E. Kärber1, T. Dedova1, A. Mere1, I. Sildos2, R. Land3
1 Tallinn University of Technology, Department of Materials Science, Laboratory of Thin Film Chemical Technologies, 19086 Tallinn, Estonia; 2 University of Tartu, Institute of Physics, 51014 Tartu, Estonia; 3 Tallinn University of Technology, Faculty of Information Technology, Thomas Johann Seebeck Department of Electronics, Baselab for Electronics and Communication Research 19086 Tallinn, Estonia

18:00 **Solid-state nanostructured solar cells sensitised using biomass-derived carbon quantum dots** AA.12 36

Joe Briscoe, Adam Marinovic, Magdalena Titirici, Steve Dunn
Queen Mary University of London, UK

18:00 **The effect of pH of a new PAMAM dendritic material on the performance of organic bi-layer solar cells** AA.12 37

T. Alshahrani1*, A. El-Betany2, M. Mabrook1, H. Tai2, I. Alrougy1, A. Sleiman1 and N.McKeown3
Bangor university, Cardiff University

18:00 **Zinc-coated paper substrates for organic solar cells** AA.12 38

Lucia Leonat1, Matthew White1, Eric Daniel Głowacki1, Markus Scharber1, Tino Zillger2, Arved Hübler2, Niyazi Serdar Sariciftci1
1 Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University, Linz, Austria 2 Inistitute for Print and Media Technology, Chemnitz University of Technology, Chemnitz, Germany

18:00 **Efficient organic solar cells based on novel statistical copolymers comprising carbazole, fluorene, thiophene and benzothiadiazole units** AA.12 39

D.K. Susarova, A. V. Akkuratov, D.V. Novikov and P.A.Troshin
Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, Moscow region, 142432, Russia

18:00 **Charge carrier dynamics in pi-conjugated donor-acceptor block co-oligomers for mono-component organic solar cells** AA.12 40

T. Regrettier (a), R. Bechara (a), P.O Schwartz (b), E. Zaborova (c), T. Roland (b), A. Cheminal (b), L. Biniek (d), B. Heinrich (b), S. Mery (b), N. Leclerc (c), M. Brinkmann (d), J. Leonard (b), S. Haacke (b), P. Leveque (a), T. Heiser (a)
(a) ICube, Université de Strasbourg-CNRS, 23 rue du Loess BP 20, 67037 Strasbourg cedex 2, France; (b) IPCMS, Université de Strasbourg-CNRS, 23 rue du Loess BP 43, 67034 Strasbourg cedex 2, France; (c) ICPEES, Université de Strasbourg-CNRS, 25 rue Becquerel, 67087 Strasbourg cedex 2, France; (d) ICS, CNRS, 23 rue du Loess BP 84047, 67034 Strasbourg cedex 2, France

18:00 **Surface composition in spincoated blend films of thiophene-quinoxaline copolymer with [70]PCBM** AA.5 49

Rickard Hansson (1), Leif Ericsson (1), Jan van Stam (2), Jakub Rysz (3), Ergang Wang (4), Andreas Opitz (5), Ellen Moons (1)
1. Department of Engineering and Physics, Karlstad University, Karlstad, Sweden; 2. Department of Engineering and Chemical Sciences, Karlstad University, Karlstad, Sweden; 3. Institute of Physics, Jagiellonian University, Kraków, Poland; 4. Department of Chemical and Biological Engineering, Chalmers University of Technology, Göteborg, Sweden; 5. Institute of Physics, Humboldt University, Berlin, Germany

SYMPOSIUM BB

Materials by design for energy applications through theory and experiment

Symposium Organizers:

Stefano Curtarolo, Duke University, Durham, USA

Georg Madsen, Bochum, Germany

Materials by Design: Batteries : XX

08:45 **Efficient materials exploration based on systematic density-functional calculations and machine learning techniques** **BB.I 1**
Isao TANAKA, Atsuto SEKO
Department of Materials Science and Engineering, Kyoto University, Kyoto, Japan

09:15 **Towards a practical rechargeable 5 V Li ion battery** **BB.I 2**
R. I. Eglitis
Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia

09:30 **DISCUSSION AND BREAK**

10:30 **Preparation and Structural Analysis of NaMn2-xBxO4 Nanoparticles for Rechargable Ion Battery Applications** **BB.I 3**
Ayse Gunay, Sevda Avci, Serdar Altin, Meltem Asilturk
Akdeniz Uni., Department of Materials Science and Engineering, 07058, Antalya, Turkey Afyon Kocatepe Univ., Department of Materials Science and Engineering., 03200, Afyonkarahisar, Turkey İnönü Univ., Department of Physics ., 44280, Malatya, Turkey

10:45 **LiMBO3 (M=Fe, Mn) as positive electrode material for Li-ion batteries: synthesis, characterization and optimization** **BB.I 4**
Barbara Le Roux, Jean François Colin, Valérie Pralong
CEA/LITEN ; CEA/LITEN ; CRISMAT ENSICAEN

11:00 **Revisiting the domain model for lithium intercalated graphite** **BB.I 5**
Pascal Pochet,1 Sridevi Krishnan,1 Gilles Brenet,1 Eduardo Machado-Charry,1,2 Damien Caliste,1 Luigi Genovese,1 and Thierry Deutsch,1
1 Laboratoire de Simulation Atomistique (L_Sim), SP2M, CEA/UJF-Grenoble 1, INAC, Grenoble F-38054, France 2 Nanosciences Fondation, 23 rue des martyrs, 38000 Grenoble, France

11:15 **Voltage gain in lithiated organic cathode by structure design : redox-active organic structures as an alternative to inorganic electrode materials for greener Li-ion batteries** **BB.I 6**
P. Poizot, F. Dolhem
P. Poizot : Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, 2 rue de la Houssinière, B.P. 32229, 44322 Nantes Cedex 3, France ; F. Dolhem : Laboratoire de Glycochimie, des Antimicrobiens et des Agroressources (LG-2A), FRE CNRS 3517, Université de Picardie Jules Verne, 33 rue Saint-Leu, 80039 Amiens Cedex, France

11:30 **Electrodeposition and characterisation of novel Li-ion battery half stack composed of porous electrolytic manganese dioxide cathode and ultrathin poly(phenylene) oxide solid state electrolyte** **BB.I 7**
S. Deheryan1,2, R. Sinha 1,6 , R. Muller1, D.J. Cott1, Y. Zargouni1,3,4, A. Radisic1, M. Heyns1,5 and P. M. Vereecken1,2
1 imec, Kapeldreef 75, Leuven, Belgium; 2 Centre for Surface Chemistry and Catalysis, Faculty of Bioscience Engineering, University of LeuvenBelgium; 3 KACST-Intel Consortium Center of Excellence in Nano-manufacturing Applications (CENA), Riyadh, Saudi Arabia; 4 Chemistry Department, Tunis EL Manar University, Faculty of Sciences in Tunis, Tunisia; 5 Department of Metallurgy and Materials Engineering (MTM), University of Leuven, Belgium; 6 Department of Electrical Engineering (ESAT) University of Leuven, Belgium

11:45 **Design of Large-Scale Capacitive Energy Storage** **BB.I 8**
D.B. Chrisey, B. Riggs, S. Sklare, Venkata Sreenivas Puli, S. Adireddy, X. Su, M. Tomozawa, and R. Katiyar
D.B. Chrisey Tulane University; B. Riggs Tulane University; S. Sklare Tulane University; V. S.Puli Tulane University; S. Adireddy Tulane University; X. Su RPI; M. Tomozawa RPI; R. Katiyar University of Puerto Rico

12:00 **Effect of carbon coating on Li2CoSiO4 by functionalized MWCNTs for Lithium ion batteries** **BB.I 9**
Savitha Thayumanasundaram *1,Vijay Shankar Rangasamy 1, Jin Won Seo 2, Jean-Pierre Locquet 1
1. Department of Physics and Astronomy, Celestijnenlaan 200D, B-3001 Leuven, Belgium. 2. Department of Metallurgy and Materials Engineering, Kasteelpark Arenberg 44, B-3001, Leuven, Belgium

12:15 **Cu Containing MnO Colloidal Heterostructures for High Performance Lithium Ion Battery** **BB.I 10**
Hui Teng Tan, Harry E. Hoster, Qingyu Yan.
School of Materials Science and Engineering, Nanyang Technological University, Singapore 639798, Singapore; TUM CREATE, 1 CREATE Way, #10-02 CREATE Tower, Singapore 138602

12:30 **LUNCH**

Materials by Design: Energy Harvesting : XX

14:00 **Integrated materials discovery engine** **BB.II 1**
Ichiro Takeuchi
University of Maryland

14:30 **Environmentally-friendly optimization of the electrochemical performance and recycling of water-soluble organic Li-ion battery electrode materials** **BB.II 2**
Stéven Renault, Alina Mihali, Torbjörn Gustafsson, Kristina Edström, Daniel Brandell
Dept. of Chemistry - Ångström Laboratory, Uppsala University, 751 21 Uppsala, Sweden

14:45 **Separation Performance of DD3R Membranes for Gas Separation** **BB.II 3**
Pasquale Francesco ZITO, Alessio CARAVELLA, Adele BRUNETTI, Enrico DRIOLI, Giuseppe BARBIERI
Dept. of Environment and Chemical Engineering, The University of Calabria, Italy; National Research Council - Institute for Membrane Technology ITM?CNR, Italy; National Research Council - Institute for Membrane Technology ITM?CNR, Italy; Dept. of Environment and Chemical Engineering, The University of Calabria, Italy - National Research Council - Institute for Membrane Technology ITM?CNR, Italy; National Research Council - Institute for Membrane Technology ITM?CNR, Italy

15:00 **Raman spectroscopy applied to thermal investigation of nanocrystalline SiC/Si thin films for energy harvesting** **BB.II 4**
E Drahi, M Schnabel, C Weiss, J Mazuir, S Janz, S Blayac
Centre Microélectronique de Provence Georges Charpak, Ecole Nationale Supérieure des Mines de Saint Etienne, Gardanne 13541, France ; Fraunhofer-Institut für Solare Energiesysteme ISE, Freiburg 79110, Germany

15:15 **Computer modelling aided design and understanding of organic electrode materials for energy harvesting: an atomic-scale perspective** **BB.II 5**
Daniele Tomerini 1, Yann Danten 2, Carlo Gatti 3, Philippe Poizot 4, Franck Dolhem 5, Matthieu Becuwe 1, François-Yves Dupradeau 5, and Christine Frayret 1
1. LRCS-CNRS UMR 7314, Université de Picardie, 33, Rue Saint-Leu, 80039 Amiens, France 2. ISM-CNRS UMR 5255 , 351 Cours de la Libération, 33405 Talence, France 3. CNR-ISTM, Istituto di Scienze e Tecnologie Molecolari, via Golgi 19, 20133, Milano, Italy 4. IMN-CNRS UMR 6502, Université de Nantes, 2, Rue de la Houssinière, 44322 Nantes, France 5. LG2A-CNRS FRE 3517, Université de Picardie, 10, Rue Baudeloque, 80039 Amiens, France

15:30 **DISCUSSION AND BREAK**

16:30 **Oxide hetero structures for efficient solar cells** **BB.II 6**
P. Blaha, Elias Assmann, Robert Laskowski, Karsten Held, Satoshi Okamoto, Giorgio Sangiovanni
Inst. Material Chemistry, TU Vienna

17:00 **An n-p-n Triad Designed and Studied Towards Organic Photovoltaics** **BB.II 7**
Damien Rolland, Lucia Hartmann, Natalie Banerji, Martin Brinkmann, Holger Frauenrath
Institute for Material Science, EPFL, Lausanne, Switzerland; Institute for Material Science, EPFL, Lausanne, Switzerland; Institute for Chemical Science and Engineering, EPFL, Lausanne, Switzerland; Institut Charles Sadron, Université, Strasbourg, France; Institute for Material Science, EPFL, Lausanne, Switzerland

17:15 **Simulation of Ultra-High Efficiency GaAs Core-Shell Nanowire Solar Cells** **BB.II 8**
Cheng Guan Lim, Helge Weman
Norwegian University of Science and Technology (NTNU) Department of Electronics and Telecommunications O. S. Bragstads plass 2A NO-7491 Trondheim, Norway.

17:30 **New metal oxides for photovoltaics – experimental and theoretical challenges** **BB.II 9**
Amir Natan, Arie Zaban
1 – Department of Physical Electronics, Tel-Aviv University, Tel-Aviv, 69978 Israel
2 – Department of Chemistry, Bar-Ilan University, Ramat-Gan, 52900 Israel

POSTER SESSION I : XX

18:00 **Inverted solid state perovskite solar cells based on CuSCN as a hole transporting material** **BB.P1. 1**
Mulmudi Hemant Kumar, Sabba Dharani, Nicholas Laji, Nripan Mathews, Pablo. P. Boix, Subodh Mhaisalkar
Energy Research Institute, Nanyang Technological University, Singapore

18:00 **DR** **BB.P1. 2**
DR OLAWALE BABATUNDE OLATINSU, DR DEBORAH OLUWASEUN OLORODE
UNIVERSITY OF LAGOS, LAGOS, NIGERIA

18:00 **Simulations of the light scattering properties of metal/oxide core/shell nanospheres towards plasmonic applications** **BB.P1. 3**
F. Ruffino, G. Piccitto, M. G. Grimaldi
F. Ruffino, M. G. Grimaldi Dipartimento di Fisica e Astronomia Università di Catania and MATIS CNR-IMM, via S. Sofia 64, 95123 Catania, Italy G. Piccitto Dipartimento di Fisica e Astronomia Università di Catania, via S. Sofia 64, 95123 Catania, Italy

18:00 **Waste heat energy recovery and waste elimination process using thermal decomposition by arc plasma** **BB.P1. 4**
Mohammadreza Heydariazad
Department of Mechanical & Aerospace Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran

18:00 **The mechanism of design and analysis modeling of performance of variable speed wind turbine and Dynamical control of wind turbine power** **BB.P1. 5**
Mohammadreza Heydariazad
Department of Mechanical & Aerospace Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran

18:00 **Taylored LiCoPO4 microcrystals as cathode material in high energy lithium cells** **BB.P1. 6**
Jessica Manzi, Sergio Brutti
Dipartimento di Scienze, Università della Basilicata, Potenza, Italy

18:00 **Valorization of petroleum loads by thermal process** **BB.P1. 8**
BEN TAHAR Nourredine MIMON Hadj
M'hamed Bougara University

18:00 **Quasi-Solid-State Lithium-Oxygen Batteries Constructed Using Polymer Gel Electrolytes with Ionic Liquids** **BB.P1. 10**
Jong-Won Lee, Kyu-Nam Jung, Ji-In Lee, Kyung-Hee Shin
New and Renewable Energy Research Division, Korea Institute of Energy Research, 152 Gajeong-ro, Yuseong-gu, Daejeon, 305-343, Republic of Korea

18:00 **Synthesis of W and Mo co-doped vanadium dioxide for smart window** **BB.P1. 11**
Kim Hee Jung1,2, Jee Hye Shin1,3 and Jung Whan Yoo1*
1 Composite Materials Team, Korea Institute of Ceramic Engineering and Technology, Seoul, Korea ; 2 Department of advanced materials science & Engineering, SungKyunKwan University, Korea ; 3 Department of chemical & biological engineering, Korea University, Korea

18:00 **Deep Sea Water and Hot Spring Water of Thermoelectric Generation Feasibility Study** **BB.P1. 12**
Meng-Chu Chen*1), Jhih-Ping Shen1) ,Yu-Chen Lin1), T. T. Lin2)
(1). Department of Applied Science, National Taitung University, Taitung, Taiwan. R.O.C. (2). Institute of Nuclear Energy Research, Atomic Energy Council, ,Taoyuan County, Taiwan, R.O.C.

18:00 **Increasing the High Rate Performance of Mixed Metal Phospho-Olivine Cathodes through Collective and Cooperative Strategies** **BB.P1. 13**
Bo Ding, Li Lu and Jim Yang Lee*
Prof Jim Yang Lee, and Bo Ding NUS Graduate School for Integrative Sciences and Engineering (NGS), Center for Life Sciences (CeLS), #05-01 28 Medical Drive, Singapore 117456, Singapore. Department of Chemical & Biomolecular Engineering National University of Singapore (NUS) 4 Engineering Drive 4, Singapore 117576; Prof Li Lu Department of Mechanical Engineering, National University of Singapore, 9 Engineering Drive 1, Singapore 117576, Singapore.

18:00 **OXYGEN-SELECTIVE MEMBRANES FOR LITHIUM AIR CATHODE PROTECTION** **BB.P1. 14**
J. Amici, J. Zeng, J. Nair, C. Francia, S. Bodoardo, N. Penazzi
GAME Lab, Department of Applied Science and Technology (DISAT), Politecnico di Torino, C.so Duca degli Abruzzi 24, 10129 Torino (ITALY)

18:00 **Optimization Monocrystalline Silicon Ingot Growth Furnace** **BB.P1. 15**
Byeong Cheol Jeon, Jae Hak Jung*
School of Chemical Engineering, Yeungnam University

18:00 **EFFECTIVE MEDIUM MODEL FOR THE THERMOELECTRIC PHENOMENA IN GRANULATED SEMICONDUCTORS** **BB.P1. 16**
Kh.B.Ashurov, B.M.Abdurakhmanov, M.M.Adilov, F.G.Djurabekova*, S.E.Maksimov, B.L.Oksengendler
Institute of Ion Plasma and Laser Technologies, Uzbek Academy of Sciences, Tashkent, Uzbekistan (*) Helsinki Institute of Physics and Physics Department, University of Helsinki, Finland

18:00 **Scattering mechanism of charge carriers in bismuth chalcogenide nanostructured hetero-epitaxial films** **BB.P1. 17**
L.N. Lukyanova1, Yu.A. Boikov1, V.A. Danilov1, O.A. Usov1, M.P. Volkov1, 2, V.A. Kutasov1
Ioffe Physical-Technical Institute, Russian Academy of Sciences, Polytekhnicheskaya 26, 194021 St.-Petersburg, Russia; International Laboratory of High Magnetic Fields and Low Temperatures, 53-421, Wroclaw, Poland

18:00 **A Novel design of a SiGe solar cell based on multi-trench technique** **BB.P1. 18**
K. Kacha1, F. Djeffal1, T. Bentrcia2 and I. Berbezier3
1) LEA, Department of Electronics, University of Batna, Batna 05000, Algeria. 2) Department of Physics, University of Batna,Batna 05000, Algeria. 3) IM2NP Aix-Marseille Universités, UMR CNRS n°7334, Faculté des Sciences St-Jérôme - Case 142, 13397 Marseille Cedex 20 France. E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

18:00 **Flexible DFT approach to large systems using adaptive and localized basis functions** **BB.P1. 19**
Stephan Mohr,1 Paul Boulanger,1 Laura Ratcliff,1 Luigi Genovese,1 Pascal Pochet,1 Stefan Goedecker,2 and Thierry Deutsch,1
1 Laboratoire de simulation atomistique (L_Sim), SP2M, UMR-E CEA / UJF-Grenoble 1, INAC, Grenoble, F-38054, France 2 Institut für Physik, Universität Basel, Klingelbergstraße 82, 4056 Basel, Switzerland

18:00 **Tunable plasmonic metamaterials as perfect absorber and wideband antireflector** **BB.P1. 20**
Mehdi Keshavarz Hedayati, Mady Elbahri
Nanochemistry and Nanoengineering, Institute for Materials Science, Faculty of Engineering, Christian-Albrechts-Universität zu Kiel, Kaiserstrasse 2, 24143 Kiel, Germany

18:00 **Enhanced Thermoelectric Power in Ionic Liquids** **BB.P1. 21**
V. Zinovyeva*, S. Nakamae, M. Bonetti, M. Roger
Service de Physique de l?Etat Condens?, CEA-IRAMIS-SPEC (CNRS-URA 2464) CEA-Saclay, F-91191 Gif-sur-Yvette Cedex, France

18:00 **Evaluation of CuIn7S11 and CuIn11S17 thin films as alternative buffer layers for CuInS2 based solar cells** **BB.P1. 22**
N. Khemiri, D. Abdelkader, B. Khalfallah, M. Kanzari1
Laboratoire de Photovoltaïques et Matériaux de Semi-conducteurs- ENIT- Université de Tunis El Manar, BP 37, le belvédère 1002-Tunis, Tunisie.,

18:00 **Ab initio modelling of the MgH2 conversion reaction in a lithium cell** **BB.P1. 23**
D.Meggiolaro, G.Gigli, S.Brutti
Istituto dei sistemi complessi ISC-CNR, UOS Sapienza and Dipartimento di Chimica, Sapienza Universit? di Roma; Dipartimento di Chimica, Sapienza Universit? di Roma; Dipartimento di Scienze, Universit? della Basilicata and Istituto dei sistemi complessi ISC-CNR, UOS Sapienza

18:00 **Effect of Soldering on Plating with Thermoelectric Element using Finite Element Analysis** **BB.P1. 24**
GyuDong Back , JaeHak Jung*
Shcool of chemical engineering yeungnam university

18:00 **Carrier Transport and Origins of Narrow Bandgap for P-type Layered Semiconductor, beta-BaZn2As2** **BB.P1. 25**
Zewen Xiao (1,*), Fan-Yong Ran (1), Hidenori Hiramatsu (1,2), Hideo Hosono (1,2) and Toshio Kamiya (1,2)
(1) Materials and Structure Laboratory, Tokyo Institute of Technology, Mail Box R3-4, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, JAPAN; (2) Materials Research Center for Element Strategy, Tokyo Institute of Technology, Mail Box S2-12, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, JAPAN

18:00 **Graphene / SnO2 Pillars: An Anode Material For Lithium Ion Batteries** **BB.P1. 26**
M. Jeevan Kumar Reddy, A. M. Shanmugharaj, S.H. Ryu*
Department of Chemical Engineering, Global Campus, Kyung Hee University, Suwon, Republic of Korea: Corresponding author- shryu@khu.ac.kr

18:00 **Novel organic nano-carbon materials for organic electronics applications** **BB.P1. 27**
M. Commodo, A. Bruno, G. de Falco, C. Borriello, T. Di Luccio, C. Minarini, P. Minutolo, A. D'Anna.
1Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Portici Research Center, Piazzale Enrico Fermi 1, 80055 Portici (Naples), Italy Istituto di Ricerche per la Combustione (IRC), Consiglio Nazionale delle Ricerche, Piazzale Tecchio 80, Napoli, Italy

18:00 **Effect of substrate temperature on structural and optical properties of the new sulfosalt material Sn3Sb2S6 thin films** **BB.P1. 29**
A. Larbi, N. Khedmi, M. Kanzari
Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs-ENIT-Université de Tunis el ManarBP 37, le belvédère1002-Tunis, Tunisia

18:00 **Synthesis and electrical characterisations of a low work function cesium oxide coating for high efficiency thermionic energy converter** **BB.P1. 30**
F. Morini (1), J.F. Robillard (1), S. Monfray (2), I. D. Baikie (3), T. Skotnicki (2), E. Dubois (1)
(1) Institut d'electronique, de microelectronique et de nanotechnologie, U.M.R C.N.R.S 8520, Cite Scientifique, Avenue Poincare, BP 60069, 59652 VILLENEUVE D?ASCQ CEDEX, FRANCE. Contact: francois.morini@isen.iemn.univ-lille1.fr ; (2) ST Microelectronics, 850, rue Jean Monnet, 38926 CROLLES, FRANCE ; (3) KP Technology Ltd., Wick, United Kingdom;

18:15 **Electronic Structure of Core-Shell ZnO/ZnMgOMulti-Quantum Well Nanowires with Arbitrary Well Number** **BB.P1. 31**
Sh. Garuchava, T.Tchelidze
Iv.Javakhishvili Tbilisi State University, Faculty of Exact and Natural Sciences

28 May 2014

Materials by Design: Thermoelectrics I : xx

08:30 **Big data and the search for advanced thermoelectric materials** **BB.III 1**
Eric S Toberer, Brenden Ortiz, Vladan Stevanovic
Physics Department, Colorado School of Mines

09:00 **High throughput search for thermoelectric materials. Computational stability, transport and doping properties.** **BB.III 2**
Georg K. H. Madsen; Chandan Bera; Ingo Opahle
ICAMS, Ruhr-Universität Bochum, 44801 Bochum Germany

09:15 **Thermo-electrical properties measurement by a new laser based micro ZT-meter of nanostructured oxide thin films** **BB.III 3**
Amer MELHEM, Thomas LECAS, Cyril TCHIFFO, Eric MILLON, Chantal BOULMER-LEBORGNE, Nadjib SEMMAR
1GREMI-UMR 7344-CNRS-University of Orleans, F-45067, France

09:30 **DISCUSSION AND BREAK**

10:30 **Influence of in-situ formed MoSi2 inclusions on the thermoelectrical properties of a N-type silicon-germanium alloy** **BB.III 4**
Katia Favier, Guillaume Bernard-Granger, Christelle Navone, Mathieu Soulier, Mathieu Boidot, Jean Leforestier, Julia Simon
Commissariat ? l'Energie Atomique et aux Energies Alternatives DRT/LITEN/DTNM/LTE

10:45 **Electron transport in SiGe alloy nanowires in the ballistic regime from first-principles** **BB.III 5**
M. Amato (1), S. Ossicini (2), R. Rurali (3)
(1) Institut d'Electronique Fondamentale, UMR8622, CNRS, Université Paris-Sud, 91405 Orsay, France (2) Dipartimento di Scienze e Metodi dell'Ingegneria, Università di Modena e Reggio Emilia, Via Amendola 2 Pad. Morselli, I-42100 Reggio Emilia, Italy (3) Institut de Ciència de Materials de Barcelona (CSIC), Campus de la UAB, 08193 Bellaterra, Spain

11:00 **Thermoelectric properties of n-type Mg2Si0.4Sn0.6 sintered materials and links to the microstructure** **BB.III 6**
R. Vracar, G. Bernard-Granger, J. Leforestier, M. Boidot, M. Soulier, C. Navone, J. Simon
CEA/DRT/LITEN/DTNM/LCRE – Rue des Martyrs – F38054 Grenoble Cedex 9

11:15 **Promising thermoelectric bulk material [Ca2CoO3][CoO2]1.61: tuning of charge carrier and phonon transports in separated layers** **BB.III 7**
Ruoming Tian
School of Materials and Engineering, The University of New South Wales, Australia

11:30 **The optimization of thermoelectric properties in n- and p- type silicon nanowires** **BB.III 8**
Soojung Kim, Hyojin Jeon, Wonchul Choi, Dongsuk Jun, and Moongyu Jang
Novel Materials and Devices Research center, ETRI, Department of Advanced Device Technology, UST; Novel Materials and Devices Research center, ETRI, Department of Advanced Device Technology, UST; Department of Electrical Engineering, KAIST, Novel Materials and Devices Research center, ETRI; Novel Materials and Devices Research center, ETRI; Novel Materials and Devices Research center, ETRI, Department of Advanced Device Technology, UST

11:45 **High thermoelectric properties in the multi-valley electronic system Zr3Ni3-xCoxSb4 and the high mobility Zr3Ni3-xCuxSb4** **BB.III 9**
Hiromasa Tamaki, Tsutomu Kanno, Akihiro Sakai, Kouhei Takahashi, Hideo Kusada, Yuka Yamada
Panasonic Corporation, Japan

12:00 **Layered oxides as thermoelectric materials: synthesis, crystal structure, functional properties.** **BB.III 10**
A.S. Semenova, D.G. Kellerman, O.V. Merkulov, V.I. Almyashev*
Institute of Solid state Chemistry Ural Branch of Russian Academy of Sciences, 620990 Ekaterinburg, Russia; *Saint Petersburg Electrotechnical University «LETI»

12:15 **Experimental and theoretical study of diffusion in a CeFe4Sb12/Cu thermoelectric couple** **BB.III 11**
L. Boulat, R. Viennois, M. Dadras, D. Ravot, N. Fréty
Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France ; Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France ; Centre Suisse d'Electronique et de Microtechnique SA, Jaquet-Droz 1, Case Postal, CH-2002 Neuchâtel, Switzerland ; Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France ; Université Montpellier 2, Institut Charles Gerhardt, UMR 5253 CNRS-UM2-ENSCM-UM1, cc 1504, Place E. Bataillon, 34095 Montpellier Cedex 5, France

12:30 **LUNCH**

Materials by Design: Thermoelectrics II : XX

14:00 **High throughput screening of thermoelectric materials: the case of half-Heusler compounds** **BB.IV. 1**
N. Mingo, J. Carrete, S. Wang, W. Li, and S. Curtarolo
CEA-Grenoble; CEA-Grenoble; Duke University; CEA-Grenoble; Duke University

14:30 **First principles study of thermal conductivity cross-over in nanostructured Zinc-Chalcogenides** **BB.IV. 2**
Ankita Katre* , Atsushi Togo** , Ralf Drautz* and Georg K. H. Madsen*
*ICAMS, Ruhr-Universität Bochum, 44801 Bochum, Germany; **ESISM, Kyoto University, Sakyo, Kyoto 606-8501, Japan

14:45 **Sb2Te3 Nanoparticles from Single-Source Precursor for Thermoelectric Use** **BB.IV. 3**
Julia Stötzel 1, Gabi Schierning 1, Stefan Heimann 2, Julian Schaumann 3, Stephan Schulz 2, Anja Mudring 3, Roland Schmechel 1
1 Institute of Technology for Nanostructures and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, D-47057 Duisburg, Germany; 2 Institute of Inorganic Chemistry and Center for Nanointegration Duisburg-Essen (CeNIDE), University of Duisburg-Essen, D-45117 Essen, Germany; 3 Institute of Anorganic Chemistry, Materials Engineering and Characterization, Ruhr-Universität Bochum, D-44780 Bochum, Germany

15:00 **Improvement of thermoelectric conversion for energy harvesting using piezoelectric and pyroelectric composites: Realization of energy autonomous systems** **BB.IV. 4**
M.Yessari, A.Hajjaji , M.Rguiti, C.Courtois, A.Arbaoui
ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc, et, UVCH, LMCPA, F-59600 Maubeuge, France; ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc; UVCH, LMCPA, F-59600 Maubeuge, France; UVCH, LMCPA, F-59600 Maubeuge, France; Facultés des sciences d'El Jadida, Univ Chouaib Doukkali, El-Jadida, Maroc

15:15 **Defect structure and thermoelectric properties of electron-doped manganites Ca1−xHoxMnO3−δ** **BB.IV. 5**
Goldyreva E.I., Leonidov I.A., Markov A.A., Patrakeev M.V., Kozhevnikov V.L.
Institute of Solid State Chemistry, Ural Branch of Russian Academy of Sciences

15:30 **Automation of lattice thermal conductivity calculation** **BB.IV. 6**
Atsushi Togo, Isao Tanaka
Center for Elements Strategy Initiative for Structural Materials, Kyoto university; Department of Materials Science and Engineering, Kyoto University, Center for Elements Strategy Initiative for Structural Materials, Kyoto university

15:45 **Integrated measurement platform for thermal conductivity measurements in thin-film crystalline Silicon and Silicon-Germanium** **BB.IV. 7**
Maciej Haras 1,2, Valeria Lacatena 1,2, Stéphane Monfray2, Jean-François Robillard 1, Thomas Skotnicki 2 and Emmanuel Dubois 1
1 - IEMN UMR CNRS 8520, Institut d'Electronique, de Microélectronique et de Nanotechnologie, Avenue Poincaré, F-59652 Villeneuve d'Ascq FRANCE 2 – STMicroelectronics 850, rue Jean Monnet, F-38926 Crolles FRANCE

16:00 **PLENARY SESSION**

Materials by Design: Magnets, Methods and Catalysts I : XX

08:30 **Accelerated Discovery of High-Performance Magnets** **BB.V. 1**
Stefano Sanvito
School of Physics, CRANN and AMBER, Trinity College, Dublin 2, Ireland

09:00 **Using your own computer to search for novel materials (with a little help from the a owlib.org consortium online library)** **BB.V. 2**
Stefano Curtarolo, Ohad Levy, Marco Buongiorno Nardelli, Natalio Mingo, Jesus Carrete
Duke University, Center for Materials Science

09:15 **Checking the engines: quantitative error bar assessment for DFT-based property predictions** **BB.V. 3**
Kurt Lejaeghere, Jan Jaeken, Veronique Van Speybroeck, Stefaan Cottenier
Center for Molecular Modeling, Ghent University ; Department for Materials Science and Engineering, Ghent University

09:30 **DISCUSSION AND BREAK**

10:30 **An extended Pareto approach to computational materials design: tungsten alloys for nuclear fusion reactors** **BB.V. 4**
Kurt Lejaeghere, Stefaan Cottenier, Veronique Van Speybroeck
Center for Molecular Modeling, Ghent University, Technologiepark 903, BE-9052 Zwijnaarde, Belgium; Center for Molecular Modeling, Ghent University, Technologiepark 903, BE-9052 Zwijnaarde, Belgium; Center for Molecular Modeling, Ghent University, Technologiepark 903, BE-9052 Zwijnaarde, Belgium and Department of Materials Science and Engineering, Ghent University, Technologiepark 903, BE-9052 Zwijnaarde, Belgium

10:45 **Formation, coarsening and band gap engineering of sponge-like Si-SiO2 nanocomposites – materials design by theoretical predictions** **BB.V. 5**
B. Liedke,1 K. H. Heinig,1 D. Friedrich,1 B. Schmidt,1 A. Mücklich,1 R. Hübner, U. Keles,2 C. Bulutay 2
1 Helmholtz-Zentrum Dresden – Rossendorf, Bautzner Landstr. 400, 01328 Dresden, Germany 2 Department of Physics, Bilkent University, Ankara 06800, Turkey

11:00 **DFT studies on CuO/CeO2 with tailored CeO2 surface & shape** **BB.V. 6**
M. Monte, J.C. Conesa, A. Martínez-Arias
Inst. de Catálisis y Petroleoquímica, CSIC Marie Curie 2, 28049 Madrid, Spain

11:15 **Designing Rules and Probabilistic Weighting for Fast Materials Discovery in the Perovskite Structure** **BB.V. 7**
Ivano E. Castelli, Karsten W. Jacobsen
Center for Atomic-scale Materials Design, Department of Physics, Technical University of Denmark

11:30 **Screening of Structures in Highly Fluorinated Anatase TiO_2 by Computer Simulations** **BB.V. 8**
Dario Corradini, Mathieu Salanne, Damien Dambournet
Sorbonne Universités, UPMC Univ Paris 06, PHENIX, F-75005, Paris, France & CNRS, PHENIX, F-75005 Paris, France

11:45 **Conception of new inorganic compounds with targeted properties assisted by ab initio simulations** **BB.V. 9**
Houria Kabbour, Olivier Mentré, Rénald David, Mihaï Sturza, Sylvie Daviero-Minaud
CNRS - Unité de Catalyse et de Chimie du Solide

12:00 **The improvement of the electromechanical energy harvesting of the piezoelectric composites in order to perform an autonomous energy system** **BB.V. 10**
S.Aboubakr, M.Rguiti, A.Hajjaji, A.Ballouti, A.Eddiai, K.Benkhouja, C.Courtois
ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc and UVCH, LMCPA, F-59600 Maubeuge, France; UVCH, LMCPA, F-59600 Maubeuge, France; ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc; ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc; Laboratoire de Physique de la matière Condensée, Université Hassan II-Mohammedia, Faculté des Sciences Ben M'sik, Morocco; Facultés polydisciplinaire d'El Jadida, Univ Chouaib Doukkali, El-Jadida, Maroc; UVCH, LMCPA, F-59600 Maubeuge, France;

12:15 **LUNCH**

Materials by Design: Magnets, Methods and Catalysts II : XX

14:00 **The role of magneto-elastic coupling in tomorrow's magnetic refrigerants** **BB.VI. 1**
Karl G. Sandeman
Department of Physics, Blackett Laboratory, Imperial College London, Prince Consort Road, London SW7 2AZ, U.K.; Department of Physics, Brooklyn College, City University of New York, 2900 Bedford Avenue, Brooklyn, NY 11210, USA

14:30 **Structure-property correlations for grain boundaries in bcc-iron** **BB.VI. 2**
Jingliang Wang, Georg K. H. Madsen, Ralf Drautz
ICAMS, Ruhr-Universitaetsstr. 150, D-44801 Bochum, Germany

14:45 **First-principles-based structure prediction of interfaces** **BB.VI. 3**
Georg Schusteritsch, Chris J. Pickard
Department of Physics and Astronomy, University College London, Gower Street, London WC1E 6BT, United Kingdom

15:00 **Ferroelectricity in antiferromagnetic phases of magnetoelectric Gd1-xYxMnO3** **BB.VI. 4**
R. Vilarinho 1, J. Agostinho Moreira 1, A. Almeida 1, P. Tavares 2
1. IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia da Faculdade de Ciências, Universidade do Porto, Rua do Campo Alegre, 687, 4169-007 Porto, Portugal. 2. Centro de Química - Vila Real, Departamento de Química. Universidade de Trás-os-Montes e Alto Douro, 5000-801 Vila Real, Portugal.

15:15 **Neutral and charged oxygen vacancies induce two-dimensional electron gas near SiO2/BaTiO3 interfaces** **BB.VI. 5**
Anna V. Kimmel1,2, Markys G. Cain1, Peter V. Sushko2
1 National Physical Laboratory, Teddington, TW11 0LW, UK. 2 University College London, Gower Street, London, UK WC1E 6BT, UK.

15:30 **DISCUSSION AND BREAK**

16:30 **Mechanical properties and thermal expansion of Ni-Ti-Sn Heusler and half-Heusler materials from first principles calculations and experiments** **BB.VI 6**
K. Niedziolka, P. Hermet, R.M. Ayral, E. Theron, P.G. Yot, F. Salles and P.Jund
Institut Charles Gerhardt Montpellier, UMR5253, CNRS, University Montpellier 2, F-34095 Montpellier, France

16:45 **A study of La2NiO4+δ a mixed ionic and electronic conductor, by experimental and computational 17O NMR** **BB.VI. 7**
Riza Dervisoglu1, Gunwoo Kim2, David Halat2, Frédéric Blanc3, Derek S. Middlemiss4 and Clare P. Grey1,2
1- Department of Chemistry, Stony Brook University, Stony Brook, NY, 11794, USA 2- Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge, CB2 1EW, United Kingdom 3- Department of Chemistry, University of Liverpool, Crown Street, Liverpool, L69 7ZD, United Kingdom 4- Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK

17:00 **Development and XAS in-situ study of Co-Mo-based nanostructured catalysts for hydrodesulfurization** **BB.VI. 8**
Danilo OLIVEIRA DE SOUZA, Sylvain CRISTOL, Christine LANCELOT
Unité de Catalyse et Chimie du Solide

17:15 **Synthesis of allyl phenyl ether over the Pd catalyst on hydrotalcite surface** **BB.VI. 9**
Shun Nishimura, Hitoshi Matsuo, Kohki Ebitani
School of Materials Science, Japan Advanced Institute of Science and Technology (JAIST)

17:30 **Atomistic investigation of P(NDI2OD-T2) copolymer in solvents through optimized torsional force field** **BB.VI. 10**
Claudia Caddeo(1,2), Daniele Fazzi(3), Mario Caironi(4), Alessandro Mattoni(2)
(1) Universita degli Studi di Cagliari, Dipartimento di Fisica, Cittadella Universitaria 09042 Monserrato; (2) Istituto Officina dei Materiali del CNR (CNR-IOM), c/o Dipartimento di Fisica, Cittadella Universitaria 09042 Monserrato; (3) Max-Planck-Institut für Kohlenforschung (MPI-KOFO), Kaiser-Wilhelm-Platz 1, D-45470 Mülheim an der Ruhr ; (4)Center for Nano Science and Technology @PoliMi, Istituto Italiano di Tecnologia, Via Pascoli, 70/3 20133 Milano;

17:45 **Metallic nanowire networks for energy applications: experimental and modelling approaches** **BB.VI. 11**
D. P. Langley1,2, M. Lagrange1, D. Munoz-Rojas1, N. D. Nguyen2, Y. Bréchet3, D. Bellet1
1 Laboratoire des Matériaux et du Génie Physique CNRS - Grenoble INP, 3 parvis Louis Néel CS 50257, 38016 Grenoble, France. 2 Laboratoire de Physique des Solides, Interfaces et Nanostructures Département de Physique, Université de Liège Allée du 6 Août 17, B-4000 Liège, Belgique. 3 Laboratoire de Science et Ingénierie des Matériaux et des Procédés CNRS - Grenoble INP, 1130 rue de la piscine 38042 Saint-Martin d'Hères, France.

POSTER SESSION II : XX

18:00 **Investigation on dispersive optical constants and electrical properties of Sn2Sb2S5 thin films: Effect of air annealing.** **BB.P2. 1**
Y.FADHLI, A. RABHI, M. KANZARI
Laboratoire de Photovolta¨ıques et Matriaux de Semi-conducteurs-ENIT-Universit de Tunis el Manar, BP 37, le belvédère1002-Tunis, Tunisia

18:00 **Monte Carlo study of electron transport and heat generation in highly doped silicon including Pauli Exclusion Principle** **BB.P2. 2**
Xanthippi Zianni 1,2,3; Patrice Chantrenne 3
1 Dept. of Applied Sciences, Technological Educational Institution of Central Greece, 34 400 Psachna, Greece 2 Dept. of Microelectronics, IAMPPNM, NCSR 'Demokritos', 153 10 Aghia Paraskevi, Greece 3 Universite de Lyon, INSA de Lyon, MATEIS UMR CNRS 5510, Villeurbanne 69621, France

18:00 **Nanostructured Li2MnSiO4/C composite materials for high-capacity lithium-ion batteries** **BB.P2. 3**
J. Kovacevic1, A. Münzer1, C. Schulz1,2 , and H. Wiggers1,2
1Institute for Combustion and Gas Dynamics – Reactive Fluids, University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany; 2Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany.

18:00 **Epitaxial pyroelectric thin films on silicon for thermal energy harvesting** **BB.P2. 4**
R. Moalla, L. Mazet, L. Louahadj, L. Liu, J. Penuelas, B. Vilquin, G. Saint-Girons, C. Dubourdieu, R. Bachelet
Institut des Nanotechnologies de Lyon, UMR CNRS 5270, Ecole Centrale Lyon, Ecully, France

18:00 **Interaction of Atmospheric Gases with ETS-10** **BB.P2. 5**
Renjith S. Pillai, Miguel Jorge, José R. B. Gomes,*
1CICECO, Departamento de Química, Universidade de Aveiro, Campus Universitário de Santiago, P-3810-193 Aveiro, Portugal 2Department of Chemical and Process Engineering, University of Strathclyde, 75 Montrose Street, Glasgow G1 1XJ, United Kingdom

18:00 **Synthesis and characterization of nanostructured LiFe0,5Mn0,5PO4/C composite as cathode material for lithium-ion batteries** **BB.P2. 6**
A. Muenzer 1, J. Kovacevic 1, C. Schulz 1,2, H. Wiggers 1,2
1 Institute for Combustion and Gas Dynamics ? Reactive Fluids, University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany; 2 Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany

18:00 **Study of La2NiO4+δ, a prospective SOFC cathode material, by computational and experimental 17O NMR** **BB.P2. 7**
David Halat1, Riza Dervisoglu2, Gunwoo Kim1, Frédéric Blanc3, Derek S. Middlemiss4 and Clare P. Grey1,2
1 - Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge, CB2 1EW, United Kingdom; 2 - Department of Chemistry, Stony Brook University, Stony Brook, NY, 11794, USA; 3 - Department of Chemistry, University of Liverpool, Crown Street, Liverpool, L69 7ZD, United Kingdom; 4 - Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK

18:00 **Novel polymer electrolytes based on SPEEK for flexible lithium polymer batteries** **BB.P2. 9**
Savitha Thayumanasundaram *1, Vijay Shankar Rangasamy1, Niels De Greef 2, Jin Won Seo 2, Jean-Pierre Locquet 1
1. Department of Physics and Astronomy, Celestijnenlaan 200D, B-3001 Leuven, Belgium. 2. Department of Metallurgy and Materials Engineering, Kasteelpark Arenberg 44, B-3001, Leuven, Belgium

18:00 **NANOCRYSTALLINE THERMOELECTRIC Ca3Co4O9 CERAMICS OBTAINED FROM EDTA-GEL DERIVED POWDERS** **BB.P2. 10**
K. Myizawa (a), F. Amaral (a,b), M.F.P. Graça (a)
(a) I3N and Physics Department, University of Aveiro, 3810-193 Aveiro, Portugal
(b) Polytechnic Institute of Coimbra, 3045-601 Coimbra, Portugal

18:00 **Synthesis and electrical characterisations of a low work function cesium oxide coating for high efficiency thermionic energy converter** **BB.P2. 11**
F. Morini (1), J. F. Robillard (1) , S. Monfray (2), T. Skotnicki (2), I. D. Baikie (3), E. Dubois (1)
(1) Institut d'electronique, de microelectronique et de nanotechnologie, U.M.R C.N.R.S 8520, Cite Scientifique, Avenue Poincare, BP 60069, 59652 VILLE-NEUVE D?ASCQ CEDEX, FRANCE. Contact: francois.morini@isen.iemn.univ-lille1.fr ; (2) ST Microelectronics, 850, rue Jean Monnet, 38926 CROLLES, FRANCE ; (3) KP Technology Ltd., Wick, United Kingdom;

18:00 **Chemical Intercalation and Delamination of Two-Dimensional Carbides and Carbonitrides** **BB.P2. 12**
Olha Mashtalir1,2, Michael Naguib1,2, Vadym N. Mochalin1,2, Maria Lukatskaya1,2, Yohan Dall'Agnese1,2,3, Michel Barsoum1,2, Yury Gogotsi1,2
1 Department of Materials Science and Engineering, Drexel University, 3141 Chestnut Street, Philadelphia, Pennsylvania 19104, USA. 2 A.J. Drexel Nanotechnology Institute, Drexel University, 3141 Chestnut Street, Philadelphia, Pennsylvania 19104, USA. 3 Université Paul Sabatier, CIRIMAT UMR CNRS 5085, 118 route de Narbonne, 31062 Toulouse, France

18:00 **Modelling of Piezoelectric PZT Ceramics behavior under high solicitations: Electrical and Mechanical** **BB.P2. 13**
Abdelkader Rjafallah, Adil Eddiai, Abdelowahed Hajjaji, Yahia Boughaleb
- University chouaib doukkali, Faculty of sciences, El Jadida, Morocco - University Hassan II Mohammadia, Faculty of sciences Ben M'sik, Casablanca, Morocco - University chouaib doukkali, ENSA, El Jadida, Morocco - University Hassan II Ain Chok, ENS, Casablanca, Morocco

18:00 **Vanadium substitution into LiMnPO4: structure peculiarities, magnetic properties, ab initio calculations.** **BB.P2. 14**
D.G. Kellerman, A.S. Semenova, N.I. Medvedeva, Yu.G. Chukalkin, N.A. Mukhina*, V.S. Gorshkov*
Institute of Solid State Chemistry, Ural Branch, Russian Academy of Sciences, 620990 Ekaterinburg, Russia; Eliont LLC, 620137 Ekaterinburg, Russia

18:00 **Improvement of thermoelectric conversion for energy harvesting using piezoelectric and pyroelectric composites: Realization of energy autonomous systems** **BB.P2. 15**
M.Yessari, A.Hajjaji , M.Rguiti, C.Courtois, A.Arbaoui
ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc, et, UVCH, LMCPA, F-59600 Maubeuge, France; ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc; UVCH, LMCPA, F-59600 Maubeuge, France; UVCH, LMCPA, F-59600 Maubeuge, France; Facultés des sciences d'El Jadida, Univ Chouaib Doukkali, El-Jadida, Maroc

18:00 **The improvement of the electromechanical energy harvesting of the piezoelectric composites in order to perform an autonomous energy system** **BB.P2. 16**
S.Aboubakr, M.Rguiti, A.Hajjaji, A.Ballouti, A.Eddia, K.Benkhouja, C.Courtois
ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc and UVCH, LMCPA, F-59600 Maubeuge, France; UVCH, LMCPA, F-59600 Maubeuge, France; ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc, ENSA, Univ Chouaib Doukkali, El-Jadida, Maroc; Laboratoire de Physique de la matière Condensée, Université Hassan II-Mohammedia, Faculté des Sciences Ben M'sik, Morocco; Faculté Polydisciplinaire d'El Jadida, Univ Chouaib Doukkali, El-Jadida, Maroc; UVCH, LMCPA, F-59600 Maubeuge, France

18:00 **Model-based Material Design and Selection for Piezoelectric Energy Harvesting** **BB.P2. 17**
Miso Kim, Brian L. Wardle
Korea Research Institute of Standards and Science; Massachusetts Institute of Technology

18:00 **Electrical Conductivity and Seebeck Coefficient Measurements of Manganese (IV) Oxide Particles as a Function of Electrical Resistance and Particle Packing Density** **BB.P2. 18**
Costel Constantin
James Madison University, Harrisonburg, Virginia USA

18:00 **Improved spectral properties and opto-electron conversion efficiency of silver/silicon nanocomposite films for solar cell application** **BB.P2. 19**
Zhixin Liu , Ling Xu*, Zhaoyun Ge, Yao Yu un Xu, Weining Su, Yao Yu, Zhongyuan Ma, and Kunji Chen
School of Electronic Science and Engineering and National Laboratory of Solid State Microstructures, Nanjing University

18:00 **Thermoelectric Composite of Bismuth-Telluride Nanoparticles and Si Nanowires for Solar Heat Energy Harvesting** **BB.P2. 20**
Yu-Ting Liu, Yue-Yun Tsai, and Cheng-Lun Hsin
Department of Electrical Engineering, National Central University, Taoyuan 32001, Taiwan

18:00 **Wind tunnel simulation by using a torque producing device** **BB.P2. 21**
Mohammadreza Heydariazad
Department of Mechanical & Aerospace Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran

SYMPOSIUM CC

Materials for electrochemical energy conversion - from modular to large-scale energy generation and storage

Symposium Organizers:

Bryan S. Pivovar, National Renewable Energy Laboratory, Golden, USA

Deborah Jones, CNRS - Universite Montpellier II, France

Solid Oxide : Gilles Taillades and Deborah Jones

09:00 **Performance and durability of microtubular solid oxide fuel cells: Electrochemical measurements and characterization methodology.** CC.1 1
M. Torrell, A. Meadowcroft, A. Morata, M. Burriel1, K. Kendall, M. Kendall, A. Tarancón.
M. Torrell, Catalonia Institute for Energy Research (IREC) Jardins de les Dones de Negre, 1, 08930-Sant Adrià del Besòs, Barcelona, Spain; A. Meadowcroft, Adelan, 10 Weekin Works, 112 Park Hill Road, Birmingham, B17 9HD, UK; A. Morata, Catalonia Institute for Energy Research (IREC) Jardins de les Dones de Negre, 1, 08930-Sant Adrià del Besòs, Barcelona, Spain; M. Burriel Catalonia Institute for Energy Research (IREC) Jardins de les Dones de Negre, 1, 08930-Sant Adrià del Besòs, Barcelona, Spain; K. Kendall Adelan, 10 Weekin Works, 112 Park Hill Road, Birmingham, B17 9HD, UK;M. Kendall Adelan, 10 Weekin Works, 112 Park Hill Road, Birmingham, B17 9HD, UK; A. Tarancón Adelan, 10 Weekin Works, 112 Park Hill Road, Birmingham, B17 9HD, UK;M. Kendall Adelan, 10 Weekin Works, 112 Park Hill Road, Birmingham, B17 9HD, UK;

09:15 **Fabrication of scalable thin film solid oxide fuel cells** CC.1 2
Joonho Park, Ikwhang Chang, Sanghoon Ji, Suk Won Cha
Seoul National University

09:30 **Manufacturing of Nanofiber LSC-SDC Cathodes for microtubular Solid Oxide Fuel Cells** CC.1 3
E. Xuriguera (1) (2) (3), M. Morales (1), A. Cirera (2), M. Segarra (1)
(1) IN2UB, Departament de Ciència dels Materials i Enginyeria Metal•lúrgica, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona, Spain; (2) MIND/IN2UB, Electronics Department, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona, Spain; (3) DIOPMA S.L., Baldiri i Reixac 1, 08028 Barcelona, Spain

09:45 **Crystal structure investigation of the new strontium-rich nickelates** CC.1 4
E.S. Kravchenko, L.V. Makhnach, V.V. Pankov
Belarusian State University, Chemistry Department

10:00 **Break**

10:30 **Towards Efficient Protonic Ceramic Fuel Cells Operating Below 600°C with Stable Proton Conducting Electrolytes** CC.1 5
Gilles Taillades
ICGM-AIME Université Montpellier 2

11:00 **Ab initio MODELLING OF OXYGEN REDUCTION REACTION IN MIXED CONDUCTING PEROVSKITES FOR SOLID OXIDE FUELL CELLS** CC.1 6
E. A. Kotomin, R. Merkle, Yu. A. Mastrikov, M.M. Kuklja, J. Maier
Max Planck Institute for Solid State Research, Heisenbergstr., Stuttgart, Germany; Institute for Solid State Physics, University of Latvia, Riga, Latvia, Materials Science and Engineering Dept., University of Maryland, College Park, USA

11:15 **Coated Ferritic Stainless Steel as Interconnect Material – enabling up-scaling of solid oxide fuel cell production** CC.1 7
J.G. Grolig, J.-E. Svensson, J. Froitzheim
Environmental Inorganic Chemistry, Chalmers University of Technology Kemivägen 10 SE-41296 Göteborg

11:30 **Nanocomposite catalysts for fuels internal reforming in solid oxide fuel cells** CC.1 9
V. Sadykov1,2, N. Mezentseva1,2, Yu. Fedorova1, A. Lukashevich1, E. Smal1,2, M. Simonov1, M. Arapova2, A. Zadesenets3, O. Smorygo4 , A.-C. Roger5, K. Parkhomenko5
1Boreskov Institute of catalysis, Novosibirsk, Russia; 2Novosibirsk State University, Novosibirsk, Russia; 3Nikolayev Institute of Inorganic Chemistry, Novosibirsk, Russia; 4Institute of Powder Metallurgy, Minsk, Belarus; 5University of Strasbourg, Strasbourg, France

11:45 **Lunch**

High Temperature PEM/ Flow Batteries : Thomas Steenberg and Peter Fischer

14:00 **Optimization of HT-PEM fuel cells** CC.2 1
A: Hans Aage Hjuler, Hector Garcia, Thomas Steenberg B: Qingfeng Li, Jens Oluf Jensen, Lars N. Cleemann
A: Danish Power Systems, Bldg. 207, 2800 Lyngby, Denmark B: Department of Energy Conversion and Storage, Technical University of Denmark, 2800 Lyngby, Denmark

14:30 **Adsorption process of phosphoric acid on polybenzimidazole membranes: a crucial step inside operational high temperature PEM fuel cells** CC.2 2
Fosca Conti (1,2), Jürgen Wackerl (1), Pierre Dams (1) and Carsten Korte (1)
(1) Institute of Energy and Climate Research (IEK-3), Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany (2) Department of Chemical Sciences, University of Padova, I-35131 Padova, Italy

14:45 **Analysis and optimization of high-temperature polymer electrolyte membrane fuel cell components regarding lifetime performance** CC.2 3
Christoph Heinzl1, Tanja Ossiander1, Markus Perchthaler2, Stephan Gleich1, Katharina Hengge1, Christina Scheu1
1 Department of Chemistry, Ludwig-Maximilians-University Munich, Butenandtstr. 11, 81377 Munich, Germany; 2 Institute of Chemical Engineering and Environmental Technology, Graz University of Technology, Steyrergasse 21, 8010 Graz, Austria

15:00 **An Overview of Redox Flow Batteries** CC.2 4
Fischer, Peter; Caglar, Burak; Frank Wandschneider; Gerber, Tobias
Fraunhofer Institute for Chemical Technology ICT

15:30 **A Metal-Free Organic-Inorganic Aqueous Flow Battery** CC.2 5
B. Huskinson1, M.P. Marshak1&2, C. Suh2, S. Er2, M.R. Gerhardt1, C.J. Galvin2, X. Chen2, A. Aspuru-Guzik2, R.G. Gordon1&2 and M.J. Aziz1
1) Harvard School of Engineering and Applied Sciences, 29 Oxford Street, Cambridge, MA, 02138 USA; 2) Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge MA, 02138 USA

15:45 **Improving Material Properties to Improve Performance of Redox Flow Batteries** CC.2 6
Thomas A. Zawodzinski, Jr , Che-Nan Sun, Zhijiang Tang, Douglas S. Aaron, Jamie Lawton, Amanda Jones, Emma Hollmann, Alexander B. Papandrew and Matthew Mench
Chemical and Biomolecular Engineering University of Tennessee. Knoxville, TN 37996; Physical Chemistry of Materials Group Oak Ridge National Laboratory, Oak Ridge, TN 37831; Mechanical, Aerospcae and Biomedical Engineering University of Tennessee. Knoxville, TN 37996

16:15 **Break**

Poster Session : Bryan Pivovar and Deborah Jones

16:30 **Electrical Explosion Synthesis of Si/C Nanocomposites for Li Secondary Batteries** CC/P3. 1
Doohun Kim, Yoon-Cheol Ha, Chuhyun Cho, Won-jae Lee, Chil-Hoon Doh
Battery Research Center, Korea Electrotechnology Research Institute, Chagwon, Republic of Korea

16:30 **Enhanced Electrochemical Performance of Li-ion Batteries With Cu-SPB as Conductive Agent.** CC/P3. 2
Umer Farooq1, 2, Adnan Yaqub1, 2, Syed Atif Pervez1, 2, Jeong-Hee Choi1, Kim Doohun1, Chil-Hoon Doh1, 2
1-Korea Electrotechnology Research Institute 2-Department of Electrical Functionality Materials Engineering

16:30 **Solid hydroxides as eletrolytes and IV group as electrodes** CC/P3. 3
Baikov Yu.M.
Ioffe Physical Technical Instutute of RAS

16:30 **Ceramic Interconnect Coatings Based on Conductive Perovskite Oxides for Solid Oxide Fuel Cells** CC/P3. 4
Jong-Won Lee, Beom-Kyeong Park, Nurhadi S. Waluyo, Seung-Bok Lee, Tak-Hyoung Lim, Seok-Joo Park, Rak-Hyun Song
New and Renewable Energy Research Division, Korea Institute of Energy Research, 152 Gajeong-ro, Yuseong-gu, Daejeon, 305-343, Republic of Korea

16:30 **Organic inorganic hybrid membranes with reduced permeability for vanadium redox flow battery** CC/P3. 5
Jong Deok Park, Sung Ho Lee, and Haekyoung Kim
School of Materials Science and Engineering, Yeungnam University, Gyeungsan, South Korea

16:30 **Fabrication of carbon papers using polyacrylonitrile nano fibers as a binder** CC/P3. 6
Hyunuk Kim, Young-Ju Lee, Sung-Jin Lee, Yong-Sik Chung2, Yoonjong Yoo*
Korea Institute of Energy Research;2Chonbuk National University

16:30 **Conductivity and dielectric relaxation in crosslinked polyvinyl alcohol by oxalic and citric acids** CC/P3. 7
Arbi Fattoum, Mourad Arous
Research Unit: Materials Environment and Energy, chemistry department, faculty of sciences 2112 Gafsa, Tunisia; Laboratory of Composite Materials, Ceramics and Polymers, physics department, faculty of sciences 3038 Sfax, Tunisia.

16:30 **EFFECT OF La DOPING ON PHYSICAL AND ELECTROCHEMICAL PROPERTIES OF DOUBLE PEROVSKITE Sr2FeMoO6 OXIDE** CC/P3. 8
Abdelkrim KAHOUL
Université F. Abbas de Sétif, Faculté de Technologie, 19000- Sétif, Algérie

16:30 **Tailoring the cathode and electrolyte to build a high discharge rate rechargeable lithium-air battery** CC/P3. 9
Zhong-Kuan Luo,Fang Wang,Li Zhou,Yan Pang, Yang-Hai Xu,Jing Chen,Dong Liu
College of Chemistry and Chemical Engineering,Shenzhen University

16:30 **PVP-assisted synthesis of MoS2 nanospheres as lithium-ion battery anode material with enhanced electrochemical performance** CC/P3. 10
Ying-San Chui, Wenjun Zhang
Center of Super-Diamond and Advanced Films (COSDAF), Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, PR China

16:30 **A Model of Concentration Galvanic Cell, Working on Salt and Fresh Water** CC/P3. 11
Sergei Vassel, Natalia Vassel
Rostov branch of MSU TM

16:30 **Electrochemical way of converting geothermal and low-potential heat energy into electricity** CC/P3. 12
Sergei Vassel, Natalia Vassel
Rostov branch of MSU TU

16:30 **Towards A Better Understanding of Lithium Ion Dynamics in Batteries: A Density Functional Theory Approach** CC/P3. 13
Veerapandian Ponnuchamy ; Stefano Mossa ; Valentina Vetere
INAC/SPrAM/GT ; INAC/SPrAM/GT ; CEA / DRT/DEHT/LCPEM, CEA-Grenoble, 17 Rue des Martyrs, 38054 Grenoble, France.

16:30 **Effect of addition of Y2O3 on Conductivity of Li1.3Al0.3-xYx (PO4)3 Ceramic Electrode System** CC/P3. 14
Dharmesh Kothari, D. K. Kanchan, Poonam Sharma
Department of Physics, Faculty of Science, The M. S. University of Baroda, Vadodara 390 002, Gujarat, India

16:30 **Synthesis of Sn3O4 Nanosheets as an Anode of Lithium Ion Battery via Hydrothermal Process** CC/P3. 15
Yu-Shu Lin(1), I-Chun Chang(1), Ting-Ting Chen1, Po-Chin Chen(2), Hsin-Tien Chiu(2), Chi-Young Lee(1)*
1. Department of Materials Science and Engineering, National Tsing-Hua University, Hsinchu 30013,Taiwan, ROC 2 .Department of Applied Chemistry, National Chiao-Tung University, Hsinchu 30010,Taiwan, ROC

16:30 **PEMFC - in cylindrical geometry with carbon xerogel as electrodes and gas diffusion layer** CC/P3. 16
L. Popovici, A.M.I. Trefilov, S.-M. Iordache, A.-M. Iordache, A. Balan, I. Stamatin*
University of Bucharest, Faculty of Physics, 3NanoSAE Research Centre, 405 Atomistilor Str., P.O. Box 38, Bucharest-Magurele, Ilfov, Romania, 077125 *Corresponding author: istarom@3nanosae.org

16:30 **Hybrid solid electrolyte :carbon gels impregnated with cation/anion exchange polymers** CC/P3. 17
Adriana Balan (1), Alexandra Trefilov(1), Catalin Luculescu(2), Stefan Iordache(1), Ioan Stamatin(1)
(1)University of Bucharest, Faculty of Physics, 3Nano-SAE Research Centre, P.O.Box MG-38, 077125 Magurele, Romania (2) National Institute for Lasers, Plasma, and Radiation Physics, 409 Atomistilor Street, RO-77125, MG-36, Magurele-Ilfov, Romania

16:30 **GRAPHENE FROM GRAPHITE EXFOLIATION IN SUPERCTRITICAL CONDITION WATER-ETHANOL. ELECTROCHEMICAL BEHAVIOR** CC/P3. 18
Catalin Ceaus(1), Adriana Balan(1), A.M. Iordache(1), *Ioan Stamatin(1), Catalin Luculescu(2)
(1)University of Bucharest, Faculty of Physics, 3Nano-SAE Research Centre PO Box MG-38, Bucharest-Magurele, Romania (2)National Institute for Lasers, Plasma, and Radiation Physics, 409 Atomistilor Street, RO-77125, MG-36, Magurele-Ilfov, Romania *corresponding author: istarom@3nanosae.org

16:30 **Oxygen Reduction Reaction Kinetics with Heteropolyacids** CC/P3. 19
A. Cucu, E. C. Serban, A. Balan, C.Ceaus, A-M Ducu, L. Popovici, I. Stamatin
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Centre, MG-38, Bucharest-Magurele, Romania

16:30 **New-supercapacitor based on optimized silicon nanotrees** CC/P3. 20
Fleur Thissandier, Dorian Gaboriau, David Aradilla, Nicolas Berton, Nicolas Pauc, Thierry Brousse, Gerard Bidan, Pascal Gentile, Said Sadki
Fleur Thissandier ; Dorian Gaboriau ; David Aradilla ; Nicolas Berton ; Said Sadki : CEA Grenoble LEMOH/SPrAM/UMR 5819 (CEA,CNRS, UJF)/INAC 17 rue des Martyrs, 38054-Grenoble, FRANCE Fleur Thissandier ; Dorian Gaboriau ; Nicolas Pauc ; Pascal Gentile : CEA Grenoble/INAC SiNaPS Lab.-SP2M, UMR-E CEA/UJF 17 rue des Martyrs, 38054-Grenoble, FRANCE Thierry Brousse : Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP32229, 44322 Nantes Cedex 3, France Gerard Bidan : INAC/Dir, CEA/INAC Grenoble 17 rue des Martyrs, 38054-Grenoble, FRANCE

16:30 **A hybrid model for proton conductivity at Σ3 tilt grain boundary in barium zirconate** CC/P3. 21
Jin-Hoon Yang1, Byung-Kook Kim2, Yeong-Cheol Kim1
1School of Energy, Materials and Chemical Engineering, KoreaTech, Korea; 2High Temperature Energy Materials Research Center, Korea Institute of Science and Technology, Korea

16:30 **A Novel Free-Standing Anode Electrode for Lithium Ion Batteries Based on Bicontinuous Carbon Foam/Fe-doped SnO2 Composite** CC/P3. 22
Yue Ma
Uppsala Univ

16:30 **Electrochemical Quartz Crystal Microbalance (EQCM) studies of the deposition of Vanadium compounds on Platinum nanoparticles for Vanadium air redox flow batteries** CC/P3. 23
C. Gutsche, M. Knipper, H. Borchert, T. Plaggenborg, J. Parisi
Department of Physics, Energy and Semiconductor Research Laboratory, University of Oldenburg, Oldenburg, Germany

16:30 **Anion exchange membrane-electrode assembly for Urea Fuel Cells** CC/P3. 24
E. C. Serban, A. Balan, A. M. I. Trefilov, A. Cucu and I. Stamatin
University of Bucharest, Physics Department, 3Nano-SAE Research Centre, Atomistilor Street, Nr. 405, P.O Box 38, Bucharest-Magurele, 07712, Romania,

16:30 **Sulfated TiO2-added nanocomposite Nafion membranes for fuel cell applications :a thermal and electrochemical characterization.** CC/P3. 25
M. Sgambetterra 1, S. Brutti 2, V. Allodi 3, G. Mariotto 3, S. Panero 1 , M.A. Navarra 1
1 Dipartimento di Chimica, Sapienza Università di Roma, P.le Aldo Moro 5, I-00185, Roma; 2 Dipartimento di Scienze, Università degli Studi della Basilicata, Via dell'Ateneo Lucano 10, I-85100, Potenza; 3 Dipartimento di Informatica – Università di Verona, Strada le Grazie 15, I-37134, Verona

16:30 **Sulfated TiO2-added nanocomposite Nafion membranes for fuel cell applications: a structural, morphological and spectroscopic characterization** CC/P3. 26
V. Allodi1, S. Brutti2, M. Giarola1, M.Sgambetterra3, M.A. Navarra3, S. Panero3 and G.Mariotto1
1 Dipartimento di Informatica – Università di Verona, Strada le Grazie 15, I-37134, Verona; 2 Dipartimento di Scienze, Università degli Studi della Basilicata, Via dell'Ateneo Lucano 10, I-85100, Potenza; 3 Dipartimento di Chimica, Sapienza Università di Roma, P.le Aldo Moro 5, I-00185, Roma.

16:30 **Low cost nanostructuration of catalysts in PEMFC cathode** CC/P3. 27
O. Marconot (a), D.Buttard (a)(b), N. Pauc (a), A. Morin (c)
(a): INAC, CEA-Grenoble, 17 Avenue des Martyrs, Grenoble, 38054, France (b) : IUT-1, Université de Grenoble, 17 Quai Claude Bernard, Grenoble, 38000, France (c) : LITEN, CEA-Grenoble17 Avenue des Martyrs, Grenoble, 38054, France

16:30 **Increased Durability Membranes for Stationary Applications** CC/P3. 28
Surya Subianto1, Sara Cavaliere1, Deborah Jones1, Jacques Rozière1, Sarah Burton2, John Blake2, Graham Hards2, Luca Merlo3
1. ICGM, Aggregates, Interfaces and Materials for Energy, CNRS, Montpellier, France. 2. Johnson Matthey Fuel Cells Ltd., Sonning Common, UK 3. Solvay Speciality Polymers Italy S.p.A., Bollate, Milan, Italy.

16:30 **STRUCTURAL AND SPECTROSCOPIC STUDY OF THE CU DOPED ZNO THIN FILMS FOR APPLICATIONS IN PHOTOCATALYSIS** CC/P3. 29
J.R. Torres-Hernández1, A. G. Flota Robledo2, G. Pérez-Hernández1, J. Pantoja-Enríquez2, E. Ramírez-Morales1, D. Martínez-Hernández1, M. González-Solano1, E. Del Angel-Meraz1, M. Acosta-Alejandro1, C. Ricardez-Jiménez1
1Universidad Juárez Autónoma de Tabasco, Avenida Universidad S/N, Zona de la Cultura, Col. Magisterial, Villahermosa, Centro, Tabasco 86040, México, 2Centro de Investigación y Desarrollo Tecnológico en Energías Renovables, UNICACH, Libramiento Norte No 1150, Tuxtla Gutiérrez, Chiapas 29039, México.

16:30 **Fabrication of Three-Dimensional Holey Reduced Graphene Oxide/Multi-wall Carbon Nanotube Sphere and Its Energy Storage Applications** CC/P3. 30
Dongwoo Kang, Hyeon Suk Shin
Two-Dimensional Carbon Materials Center, Ulsan National Institute of Science and Technology, UNIST-gil 50, Eonyang-eup, Ulju-gun, Ulsan 689-798 Republic of Korea. Interdisciplinary School of Green Energy, Ulsan National Institute of Science and Technology, UNIST-gil 50, Eonyang-eup, Ulju-gun, Ulsan 689-798 Republic of Korea.

16:30 **Alternatives ionomers for redox-flow batteries and fuel cells membranes** CC/P3. 31
L. Pasquini(1,2), R. Narducci(1,2), P. Knauth(1), M. L. Di Vona(2)
(1) MADIREL, Aix Marseille Université (Campus Saint Jerome), 141 Traverse Charles Susini 13013 Marseille (2) Dip. Scienze e Tecnologie Chimiche, Univ. Roma Tor Vergata, Via della Ricerca Scientifica 00133 Roma luca.pasquini@etu.univ-amu.fr riccardo.narducci@uniroma2.it

28 May 2014

Acidic and Alkaline Polymer Electrolyte Fuel Cells : Tom Zawodzinski and Jacques Roziere

08:30 **Performance enhancement in bendable fuel cell; mechanics and experiment** CC.4 1
Ikwhang Chang1, Taehyun Park2, Jinhwan Lee3, Ha Beom Lee2, Sanghoon Ji1, Min Hwan Lee4, Seung Hwan Ko2, Suk Won Cha1,2
1Graduate School of Convergence Science and Technology(GSCST), Seoul National University, Gwanakro 1 Gwanakgu, Seoul, 151744, Republic of Korea. 2Department of Mechanical and Aerospace Engineering, Seoul National University, Gwanakro 1 Gwanakgu, Seoul, 151744, Republic of Korea. 3Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon, 305-701, Republic of Korea 4School of Engineering, University of California, Merced, 5200 North Lake, Merced, California 95343, USA.

08:45 **Insights in the atomic 3D structure of the active catalytic phase on ternary Platinum-Rhodium-Tin electrocatalysts for ethanol oxidation** CC.4 2
Rameshwori Loukrakpam, Nina Hundertmark, Peter Strasser
Department of Chemistry, Chemical Engineering Division, Technical University Berlin, 10623 Berlin, Germany

09:00 **«On-Chip» Nanoporous Platinum Electrodes** CC.4 3
Micheal Burke, Brendan Kennedy,Mary Manning, Alan Blake, Aidan Quinn.
Tyndall National Institute

09:15 **Array of free-standing Pt nanotubes as new electrode architecture: half-cell and fuel cell study** CC.4 4
Samuele Galbiati, Arnaud Morin, Nicolas Pauc
CEA Grenoble LITEN/LCPEM Lab (Galbiati, Morin) CEA Grenoble DSM/INAC SiNAPS Lab (Pauc)

09:30 **Advanced Nanostructures as Electrocatalysts for Energy Conversion** CC.4 5
Rameshwori Loukrakpam(1), Lin Gan(1), Chunhua Cui(1), Qiuyi Yuan(3), Marc Heggen(2), Stanko Brankovic(3), Valeri Petkov(4), Peter Strasser(1)
(1)The Electrochemical Energy, Catalysis and Materials Science Laboratory, Technical University Berlin, Berlin 10623, Germany (2)Ernst Ruska Center for Microscopy and Spectroscopy with Electrons, Forschungszentrum Juelich GmbH, 52425 Juelich, Germany (3)Department of Electrical and Computer Engineering, University of Houston, Houston, TX 77204, USA (4)Department of Physics, Central Michigan University, Mt. Pleasant, MI, USA

10:00 **Break**

10:30 **Investigation of Pt/C catalysts using IL - TEM under PEM electrolysis conditions – A degradation study** CC.4 6
Paul Paciok, Marcelo Carmo , Wiebke Maier, Juergen Mergel, Detlef Stolten
Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany and Chair for Fuel Cells, RWTH Aachen University, Germany

10:45 **Extended surface catalysts for fuel cells and electrolysis** CC.4 7
Shaun Alia, KC Neyerlin, Arrelaine Dameron, Svitlana Pylypenko, Dave Diercks, Shyam Kocha, Bryan Pivovar
National Renewable Energy Lab; Colorado School of Mines

11:00 **Nanofiber Ceria-PFSA Interlayers to Mitigate Membrane Chemical Degradation** CC.4 8
Marta Zaton, Deborah Jones and Jacques Rozière
ICGM, Aggregates, Interfaces and Materials for Energy, CNRS, Montpellier, France.

11:15 **Study of vibrational properties and crystallinity of pure and silica-doped sulfonated poly(ether ether ketone) membranes by FT-IR spectroscopy** CC.4 9
Vijay Shankar Rangasamy 1*, Savitha Thayumanasundaram 1, Jin Won Seo 2, Jean-Pierre Locquet 1
1. Department of Physics and Astronomy, KU Leuven, Bus 2414, Celestijnenlaan 200D, 3000 Leuven, Belgium; 2. Department of Metallurgy and Materials Engineering, Kasteelpark Arenberg 44 - bus 2450, B-3001 Leuven, Belgium

11:30 **Anionic Exchange Membranes (AEM) for Fuel Cell Applications** CC.4 10
R. Narducci , L. Pasquini , P. Knauth , M. L. Di Vona
Università di Roma "Tor Vergata" & Universitè d'Aix-Marseille ; Università di Roma "Tor Vergata" & Universitè d'Aix-Marseille ; Universitè d'Aix-Marseille ; Università di Roma "Tor Vergata"

11:45 **Anion Exchange Membranes for Electrochemical Applications** CC.4 11
Bryan Pivovar, Matt Sturgeon, Chai Engtrakul, Dan Ruddy, Hai Long, Clay Macomber
National Renewable Energy Lab, 15013 Denver West Parkway, Golden, CO, 80401, USA

12:00 **Lunch**

Electrolysis : Jurgen Mergel and Bryan Pivovar

13:30 **Overview and Future Trends of Hydrogen Production by Water Electrolysis** CC.5 1
J. Mergel, M. Carmo, D. Fritz, D. Stolten
Forschungszentrum Jülich GmbH

14:00 **PEM water electrolysis under pressure with short-side-chain Aquivion® composite membranes** CC.5 2
Stefano Giancola1, Anita Skulimowska1, Alvaro Reyes-Carmona1, Marc Dupont1, Surya Subianto1, Sara Cavaliere1, Deborah Jones1, Jacques Rozière1, Eddy Moukheiber2 and Luca Merlo2
1. ICGM, Aggregates, Interfaces and Materials for Energy, CNRS, Montpellier, France. 2. Solvay Speciality Polymers Italy S.p.A., Bollate, Milan, Italy.

14:15 **Radiation grafted polymer electrolyte membranes for water electrolysis cells – characterization of key membrane properties** CC.5 3
A. Albert, T. J. Schmidt, L. Gubler
Electrochemistry Laboratory, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland

14:30 **Assessment of commercial AEMs and electrocatalysts for the alkaline anion exchange membrane water electrolysis** CC.5 4
Tobias Höfner, Marcelo Carmo , Wiebke Maier, Jürgen Mergel, Detlef Stolten
Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Electrochemical Process Engineering, 52425 Jülich, Germany; Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Electrochemical Process Engineering, 52425 Jülich, Germany; Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Electrochemical Process Engineering, 52425 Jülich, Germany; Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Electrochemical Process Engineering, 52425 Jülich, Germany; Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Electrochemical Process Engineering, 52425 Jülich, Germany, Chair for Fuel Cells, RWTH Aachen University, Germany

14:45 **Oxygen evolution catalysts for PEM water electrolysis – Activity and durability studies** CC.5 5
Christoph Rakousky, Marcelo Carmo, Wiebke Maier, Juergen Mergel, Detlef Stolten
Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany; Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-3: Electrochemical Process Engineering, 52425 Juelich, Germany and Chair for Fuel Cells, RWTH Aachen University, Germany

15:00 **Electrocatalysts for Reversible Oxygen Electrochemistry** CC.5 6
Timothy N. Lambert,* Danae J. Davis, Julian A. Vigil, and Steven Limmer
Department of Materials, Devices, and Energy Technologies, Sandia National Laboratories, Albuquerque, New Mexico 87185, Fax: 505-844-7786; Tel.: 505-284-6967; *Email: tnlambe@sandia.gov

15:15 **In situ SERS study of Manganese oxides as anode catalysts for electrolysers** CC.5 7
Chinmoy ranjan, Zoran Pavlovic, Robert Schloegl
Max Planck Institute for Chemical Energy Conversion

15:30 **Polyoxometalate-Modified Electrodes for Electrocatalytic Water Oxidation** CC.5 8
J. R. Galan-Mascaros, J. Soriano-López,
Institute of Chemical Research of Catalonia (ICIQ); Catalan Institution for Research and Advanced Studies (ICREA)

15:45 **Micelle-Templated Mesoporous Pt/C Catalysts for the Electrochemical Hydrogen Evolution Reaction** CC.5 9
Denis Bernsmeier1, Michael Bernicke1, Laemthong Chuenchom1;2, Bernd Smarsly2, Ralph Kraehnert1
1 Technische Universität Berlin, Berlin, Germany 2 Justus Liebig Universität, Giessen, Germany

16:00 **Plenary Session**

Lithium Batteries : Mike Toney and Stefan Adams

09:15 **In Situ Nanotomography and in Operando Transmission X-ray Microscopy of Micro-sized Ge Particles** CC.6 1
Johanna Nelson Weker, Nian Liu, Joy C. Andrews, Yi Cui, Michael F. Toney
Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Menlo Park, CA Department of Materials Sciences, Stanford University, Stanford, CA

09:30 **Freestanding carbon nanofiber composites for high performance electrodes in Li-ion batteries** CC.6 2
Biao Zhang, Jang-Kyo Kim*
Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology, Clearwater Bay, Kowloon, Hong Kong

09:45 **The Incorporation of Sn into a Hollow Carbon Nanospheres Active Matrix for High Capacity Li-Ion Battery Anodes** CC.6 3
Michael J. Wagner, Kevin Hays, Nathan Banek
The George Washington University

10:00 **Break**

10:30 **Examination of ageing mechanisms and solid electrolyte interphase layer formation of graphite anodes in fast charged Li-ion batteries** CC.6 4
C. Andersson1, M. Stiefel1, J. Whitby2, M. Held1, J. Michler2, U. Sennhauser1
1 Swiss Federal Institute for Materials Science and Technology, Laboratory for Electronics/Metrology/Reliability, Überlandstrasse 129, 8600 Dübendorf, Switzerland 2 Swiss Federal Institute for Materials Science and Technology, Laboratory for Mechanics of Materials and Nanostructures, Feuerwerkstrasse 39, 3602 Thun, Switzerland

10:45 **Li-rich lamellar oxides as positive electrode in Li-ion batteries: study of the influence of temperature and microstructure on the electrochemical behavior** CC.6 5
Alexandre Pradon 1, Maria Teresa Caldes 1, Pierre-Emmanuel Petit 1, Camille La Fontaine 2, Stéphanie Belin 2, Erik Elkaim 2, Rémi Dedryvère 3, Erwan Dumont 4, Cécile Tessier 4, Guy Ouvrard 1
1-Insitut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière BP 32229, 44322 Nantes Cedex 3, France; 2-Synchrotron SOLEIL, l'Orme des Merisiers, Saint-Aubin BP48, 91192 Gif-sur-Yvette cedex; 3-IPREM-ECP (UMR 5254 CNRS), University of Pau, 64053 Pau Cedex 9, France; 4-Saft, 111 boulevard Alfred Daney, 33074 Bordeaux Cedex, France

11:00 **Understanding the Thermal Behavior of the Iron Fluoride Trihydrate Compound Resulting in an Advanced Cathode Material for Li-ion batteries** CC.6 6
Damien Dambournet1, Mathieu Duttine1, Alain Wattiaux2, Etienne Durand2, Alain Demourgues2, Karena Chapman3, Peter Chupas3, Henri Groult1.
1. UPMC, Sorbonne University, PHENIX Lab UMR CNRS 8234, Paris, France. 2. ICMCB-CNRS, University Bordeaux 1, Pessac, France. 3. X-ray Science Division, Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois, USA.

11:15 **Cyclic voltammetry analysis of charge storage mechanism in TiO2(B) and anatase** CC.6 7
Marketa Zukalova, Barbora Laskova, Arnost Zukal, Milan Bousa, Ladislav Kavan
J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic

11:30 **Performance of LAGP-based composite membrane in aqueous Lithium-air batteries** CC.6 8
D. Safanama,* R. Prasada Rao,* Y. Hu,* N. Sharma,** S. Adams*
* National University of Singapore Department of Materials Science and Engineering;** University of New South Wales, School of Chemistry

11:45 **Atomistic Details of the Electrochemical Reactivity of CoF2 vs. Li by In Situ Pair Distribution Function and DFT Methods** CC.6 9
Wei Li,1 Damien Dambournet,1 Henri Groult,1 Olaf J. Borkiewicz,2 Karena Chapman,2 Peter Chupas,2 Delphine Flahaut,3 Marie-Liesse Doublet4
1 UPMC, Sorbonne University, PHENIX Lab UMR CNRS 8234, Paris, France; 2 X-ray Science Division, Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois, USA; 3 Université de Pau et des Pays de l'Adour, IPREM-ECP, CNRS, UMR 5254, Helioparc Pau-Pyrénées, France; 4 Institut Charles GERHARDT, Chimie Théorique, Méthodologies, Modélisation – CNRS, Université Montpellier 2 Montpellier, France

12:00 **Lunch**

Capacitors and Oxides : Charaf Cherkouk

14:00 **High Performance Asymmetric Electrochemical Capacitors based on MWCNTs/Metal Sulfide Hybrid and Graphene nanoplatelets** CC.7 1
Arvinder Singh, Amreesh Chandra
Department of Physics and Meteorology, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India

14:15 **Nano-structured carbons and their composites for energy storage applications.** CC.7 2
Ece UNUR
Department of Chemistry, Bursa Technical University, Osmangazi 16190, Bursa, Turkey

14:30 **Electrochemical capacitor behaviour of manganese oxides with different porosity and morphological properties in aqueous electrolytes** CC.7 3
C.C. H. TRANa, C. DAMASa, A. BENITEZ DE LA TORREb, C. MEDELb, M. CRUZb, J. MORALESb, F. GHAMOUSSa, F. TRAN VANa, A. MERYa, D. FARAHATa, J. SANTOS?PENAa
aLaboratoire de Physicochimie des Mat?riaux et Electrolytes pour l??nergie, Campus de Grandmont, Universit? Fran?ois Rabelais, 37200 Tours (France) bDepartamento de Quimica Inorg?nica e Ingenier?a Qu?mica, Universidad de C?rdoba, Campus de Rabanales, 14071 C?rdoba (Spain)

14:45 **Electrodeposited WO3 films for electrochemical degradation** CC.7 4
Madjid Arab1*, Ali Hallaoui1,2, Abdeljalil Benlhachemin2, Jean Raymond Gavarri1
1Université du Sud-Toulon Var, IM2NP, UMR CNRS 6242, BP 20132, 83957, La Garde, France 2 Université Ibn Zohr, LME, BP 32/S Agadir, Maroc

15:00 **Electrochemical characterization of ceria-based ceramics for low-temperature NOx catalysis** CC.7 5
D. Marinha (1), E. Dassoneville (1), C. Ogata (2), N. Sergent (2), L. Dessemond (2), C. Tardivat (1)
(1) Laboratoire de Synthése et Fonctionnalisation des Céramiques, UMR 3080 Saint Gobain - CNRS, 550 avenue Alphonse Jauffret, 84306 Cavaillon Cedex; (2) Laboratoire d'Electrochimie et de Physicochimie des Matériaux et Interfaces, UMR 5279, CNR - Grenoble INP - Université de Savoie - Université Joseph Fourier, BP75, 38402 Saint Martin d'Héres, France

15:15 **Concept for energy conversion and storage based on catalytic active oxide crystals** CC.7 6
C. Cherkouk, M. Zschornak, J. Hanzig, M. Nentwich, F. Meutzner, M. Urena, T. Leisegang, D. C. Meyer
Institut für Experimentelle Physik, Technische Universität Bergakademie Freiberg, Leipziger Straße 23, 09596 Freiberg, Germany Fraunhofer-Technologiezentrum Halbleitermaterialien, Am-St.-Niclas-Schacht 13, 09599 Freiberg

2014 Spring Meeting Lille, France – May 26th - 30th

SYMPOSIUM XX - WORKSHOP

Japan in Motion - Recent WPI Advances in Materials

Symposium Organizers:

T. Fujita, National Institute for Materials Science, Japan

M. Kotani, Tohoku University, Japan

M. Aono, National Institute for Materials Science, Japan

S. Kitagawa, Kyoto University, Japan

P. Sofronis, Kyushu University, Japan

T. Kuroki, Japan Society for the Promotion of Science

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27 May 2014

18:00 **Come together + Japanese Product Tasting at WPI booth (nr. 21)**

28 May 2014

10:30 **Coffee break**

12:30 **End of session**

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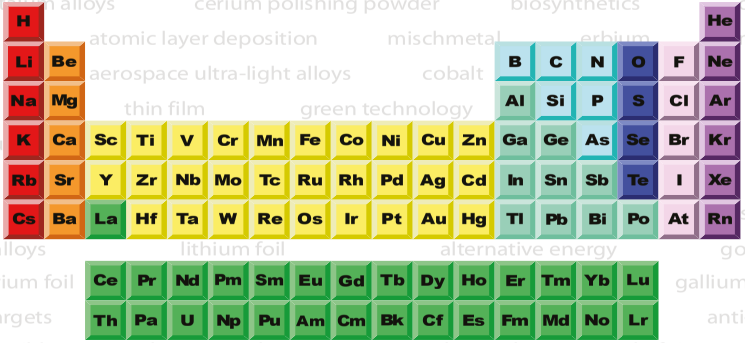

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