SYMPO	TITLE
	ENERGY
A	Processing, characterization, modelling and applications of nano energetic materials
B	Advanced materials and systems for electrochemical energy storage
C	Organic photovoltaics: material synthesis and characterization, device engineering, device physics and upscaling
D	Next generation of earth-abundant materials for solar energy
E	Advanced inorganic materials and structures for photovoltaics
F	Photocatalytic materials for energy and environment
G	Materials for improving energy storage battery technologies
H	Inorganic thermoelectrics - linking material properties and systems engineering for XXI century applications
	BIOMATERIALS
I	Organic bioelectronics
J	Electronic textiles
K	Bioinspired and biointegrated materials as new frontiers nanomaterials VII
	SEMICONDUCTORS
L	New materials for organic electronics: from synthesis to processing, characterization and device physics
M	Novel transport phenomena in organic electronic devices: heat, spin and thermoelectricity
N	Semiconductor nanostructures towards electronic and opto-electronic device applications – VI
O	Wide bandgap semiconductor for LEDs, solar and related energy technology
P	Silicon & Silicon nanostructures: from recent fundamental research to novel applications
	NANOMATERIALS
Q	Nano-engineering coatings and thin films
R	Nanoparticles in dielectric matrix: from synthesis to device applications for photonics, electronics, and bio sensing
S	ALTECH 2017 - Analytical techniques for precise characterization of nano materials
T	Synthesis, processing and characterization of nanoscale multi functional oxide films VI
U	Computer modeling of thermal transport at the nanoscale
V	Design and hierarchical assemblies of nanomaterials (nanoparticles, carbon materials, molecules) towards energy, sensing, electronic, catalysis
	FUNCTIONAL MATERIALS
W	Small scale mechanical behaviour of interfaces: bridging experimental and computational modelling methods
X	New frontiers in laser interaction: from hard coatings to smart materials
Y	Paper electronics: from materials to applications
Z	Metamaterials: from waves to matter
	WORKSHOPS
	EUROPE IN MOTION
	EpE / E-MRS INDUSTRIAL WORKSHOP - Materials for Decarbonized Circular Economy
	EpE / E-MRS ROUND TABLE - Materials for Decarbonized Circular Economy
	BET-EU WORKSHOP - Future prospects of materials in Europe
	OTHER
	PRINTING OFFICE
	PLENARY SESSION
	CEREMONY: Graduate Student Awards
	EXHIBITION
	EXHIBITOR WORKSHOP
	POSTER SESSIONS
	COFFEE BREAKS
	LUNCH
	SOCIAL EVENT
	REGISTRATION DESK

SYMPO	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	MORNING / AFTERNOON	MORNING / AFTERNOON	MORNING / AFTERNOON	MORNING / AFTERNOON	MORNING / AFTERNOON
A	ORAL	ORAL / POSTER	ORAL		
B	ORAL	ORAL / POSTER	ORAL	ORAL / POSTER	ORAL
C		ORAL / POSTER	ORAL	ORAL / POSTER	
D	ORAL	ORAL / POSTER	ORAL	ORAL / POSTER	
E	ORAL	ORAL / POSTER	ORAL / POSTER	ORAL	ORAL
F	ORAL / POSTER		ORAL / POSTER	ORAL	ORAL
G	ORAL	ORAL / POSTER	ORAL		
H		ORAL / POSTER	ORAL	ORAL	
I	ORAL	ORAL / POSTER	ORAL		
J	ORAL / POSTER	ORAL	ORAL		
K	ORAL / POSTER	ORAL / POSTER	ORAL / POSTER	ORAL / POSTER	ORAL
L	ORAL / POSTER	ORAL / POSTER	ORAL	ORAL	
M		ORAL / POSTER	ORAL	ORAL	
N	ORAL	ORAL / POSTER	ORAL	ORAL / POSTER	ORAL
O	ORAL	ORAL / POSTER	ORAL		
P	ORAL	ORAL / POSTER	ORAL	ORAL	
Q	ORAL / POSTER	ORAL / POSTER	ORAL / POSTER		ORAL
R	ORAL	ORAL / POSTER	ORAL	ORAL / POSTER	
S	ORAL / POSTER	ORAL / POSTER	ORAL		
T	ORAL	ORAL / POSTER	ORAL	ORAL / POSTER	ORAL
U	ORAL / POSTER				
V	ORAL	ORAL / POSTER	ORAL	ORAL / POSTER	
W	ORAL	ORAL / POSTER	ORAL		
X	ORAL	ORAL / POSTER	ORAL	ORAL	
Y		ORAL / POSTER			
Z			ORAL	ORAL / POSTER	
	ORAL				
			ORAL		
			ORAL		
			ORAL		

Exhibition

Around 80 international exhibitors will display a full spectrum of equipment, instrumentation, products, software, publications and services. To be held on May 23 - 25, the exhibit will be convenient to the technical session rooms and scheduled to coincide with the technical program. For exhibitors, it will mean an excellent opportunity to meet just the right customers and disseminate information effectively.

For meeting attendees, the E-MRS exhibition will offer the convenience of visiting with multiple vendors all under one roof. So, pick up some literature, enjoy a hands-on product demonstration or meet face-to-face with company representatives.

The following exhibitors are confirmed for the E-MRS 2017 Spring Meeting in Strasbourg (21/03/2017)

ABCR ..... booth 26
ACS Publications ..... booth 51
AJA International ..... booth 25
ANNEALSYS ..... booth 45
ASAHI SPECTRA ..... booth 47
BIHURCRYSTAL ..... booth 55
BITTMANN APPLIED TECHNOLOGIES ..... booth 57
BRUKER -HYSITRON ..... booth 71
CAMBRIDGE UNIVERSITY PRESS ..... booth 76
COMELEC ..... booth 09
COMVAT ..... booth 21
COST ..... booth 68
CRYSTALMAKER ..... booth 64
CTECH - COATING TECHNOLOGIES ..... booth 79
DE GRUYTER ..... booth 39
DEMCON / KRYOZ ..... booth 60
DR. EBERL MBE KOMPONENTEN ..... booth 48
DROPSENS ..... booth 74
EDINBURGH INSTRUMENTS ..... booth 04
EDP SCIENCES ..... booth 78
ELETTRORAVA ..... booth 09
EUROMETROPOLE ..... booth 80
EUROPE IN MOTION ..... booth 81
EVERBEING ..... booth 56
FOCUS ..... booth 11
GOODFELLOW ..... booth 42
HAMAMATSU ..... booth 01
HHV Ltd ..... booth 06
HITACHI HIGH TECHNOLOGIES Europe ..... booth 18
HITACHI HIGH-TECHNOLOGIES Europe ..... booth 27
HMW HAUNER ..... booth 70
HORIBA ..... booth 14-15-16
IMAGE METROLOGY ..... booth 54
INRIM Istituto Nazionale di Ricerca ..... booth 3
ION-TOF GmbH ..... booth 24
KEMSTREAM ..... booth 45
KEYSIGHT ..... booth 31-32
KP TECHNOLOGY ..... booth 63
KURT J. LESKER ..... booth 37-38
LINSEIS ..... booth 33
LRC ..... booth 72
MATECK ..... booth 35
MERCK «SIGMA-ALDRICH MATERIALS SCIENCE» ..... booth 61
MICROTEST ..... booth 09
MICROWORLD ..... booth 53
NEASPEC ..... booth 41
NEYCO ..... booth 67
NT-MDT-SPECTRUM INSTRUMENTS ..... booth 77
OPTICNANO ..... booth 75
PLASMA TECHNOLOGY ..... booth 36
PLASMATERIALS ..... booth 34
POLYGON PHYSICS ..... booth 59
PTB Physikalisch-Technische Bundesanstalt ..... booth 03
ROYAL SOCIETY OF CHEMISTRY ..... booth 23
SAIREM ..... booth 19
SCIENTA OMICRON ..... booth 12
SCIENTEC ..... booth 40
SCM ..... booth 22
SOLMATES ..... booth 13
SPECS ..... booth 52
SPRINGER NATURE ..... booth 28-29-30
STREM CHEMICALS ..... booth 66
SURFACE nanometrology ..... booth 43
SURFACE systems + technology ..... booth 44
SWISSLITHO AG ..... booth 58
TAYLOR & FRANCIS ..... booth 65
TECUUM AG ..... booth 05
TFSC-INSTRUMENT ..... booth 10
THE ROYAL SOCIETY PUBLISHING ..... booth 62
THERMO FISHER SCIENTIFIC ..... booth 08
Twente Solid State Technology B.V. (TSST) ..... booth 02
UC COMPONENTS ..... booth 50
UHV-DESIGN ..... booth 20
VACGEN ..... booth 69
VAKSIS ..... booth 73
WILEY ..... booth 49
WITEC ..... booth 17
ZURICH INSTRUMENTS ..... booth 46

Exhibitor workshops

Entrance Erasme – Ground floor

Exhibitor workshops will be held each day from Tuesday morning to Thursday afternoon.

All participants 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 are located within the technical exhibition.

	TUESDAY MAY 23	WEDNESDAY MAY 24	THURSDAY MAY 25
9:30	9:30	9:30	9:30
10:00	**SCM** «Materials & Chemistry with the ADF Modeling Suite»	**ANNEALSYS** «CVD solutions for multi-metallic oxides and 2D materials»	**KP TECHNOLOGY** «Ambient Pressure Photoemission and Scanning Kelvin Probe measurements of the energy band diagram of materials including Hydrogen Terminated Diamond, Perovskite Solar Cells and Nanowires»
10:30	10:30	10:30	10:30
	Dismantling & Installation		
11:00	11:00	11:00	11:00
11:30	**LINSEIS** «new characterization methods for thin layered materials»	**SURFACE SYSTEMS TECHNOLOGY** «Laser heating of substrates in material science - from nanometrologie up to depositiion technologies»	**SPECS** «In Operando Studies of Material Surfaces: Photoelectron Spec-troscopy and Scanning Probe Microscopy under Near Ambient Pressure Conditions»
12:00	12:00	12:00	12:00
13:30	13:30	13:30	13:30
14:00	**IMAGE METROLOGY** «Particle Analysis in SEM & SPM images»	**ION-TOF** «33 years of TOF-SIMS development - From static surface characterisation to three-dimensional organic and inorganic micro area analysis»	**SPRINGER** «Beyond Google – accelerate your research using SpringerMaterials' curated and trusted content»
14:30	14:30	14:30	14:30
	Dismantling & Installation		
15:00	15:00	15:00	15:00
15:30	**DE GRUYTER** «The goldilocks effect - publishing with de Gruyter»	**SURFACE NANOMETROLOGY** «Heating and cooling in SEM - complete heat treatment cycles at high resolution immaging and EBSD»	**NATURE Research** «Nano – plenty of room at the bottom but how to find the data droplet in the content ocean»
16:00	16:00	16:00	16:00
	Dismantling & Installation		
16:30	16:30		
17:00	**MICROTEST** «Thin Films: choosing the right technology for your application»		
17:30	17:30		
	Installation & Dismantling		
18:00	18:00		
18:30	**BIHURCRYSTAL** «ALI: Deposition in UHV from solution»		
19:00	19:00		

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4. You are connected

SATELLITE EVENTS

EUROPE IN MOTION

Monday 22nd of May, 9:00-13:00
room BERLIN - Ground floor

This half day workshop has two major objectives:

- **Show that Europe is present in key topics at scientific and technological levels through a number of initiatives**
- **Show that advanced materials are present in a large majority of projects in areas such as Energy, Information and Communication Technologies, or Biotechnology.**

Programme

09:00	**WELCOME ADDRESS** Luisa Torsi, EMRS President
09:10	**"THE FUTURE STRATEGY IN THE MATERIALS AREA IN EUROPE"** Hélène Chraye, Head of Unit "Advanced Materials and Nanotechnologies", European Commission
09:30	**MATCH: BUILDING THE EUROPEAN MATERIALS COMMON HOUSE** (To be confirmed)
09:45	**HERACLES, HERITAGE RESILIENCE AGAINST CLIMATE EVENTS ON SITE** Giuseppina Padeletti, Project Coordinator
10:00	**NANO2ALL: NANOTECHNOLOGY MUTUAL LEARNING ACTION PLAN FOR TRANSPARENT AND RESPONSIBLE UNDERSTANDING OF SCIENCE AND TECHNOLOGY** Augusto Medina, Project Coordinator (to be confirmed)
10:15	Coffee break
10:30	**1D-NEON: 1D NANOFIBRE ELECTRO-OPTIC NETWORKS** Kim Jong, Project Coordinator (to be confirmed)
10:45	**BET-EU : MATERIALS SYNERGY INTEGRATION FOR A BETTER EUROPE** Rodrigo Martins, Project Coordinator
11:00	**"THE PROSPECT OF SCIENCE IN EUROPE"** Martin Hynes, European Science Foundation President
11:15	**STATE OF THE NANOMEDICINE SCIENCE** Delphine Felder, research scientist, Institute of Physics and Chemistry of Materials
11:30	**HIGHLIGHT OF THE MATERIALS SUMMIT** Paul Siffert, EMRS General Secretary
11:45	**DISCUSSION AND CONCLUSIONS**

Printed electronics: boosting innovation for new materials to various applications

24th May 2017 – Room Stuttgart

Welcoming and Introduction	
09:30	Didier Zimmermann (EIT RawMaterials) and Rodrigo Martins (FCT-UNL)
Markets needs and key challenges (Didier Zimmermann EIT RawMaterials)	
09:30-12.00	**Industrial perspective** • Consumer Electronics and Health & diagnostics Luigi Ochipinti – Univ. Cambridge and CITC • Automotive & Health TBD – Heraeus • BASMATI - Bringing innovAtion by Scaling up nanoMATerials and Inks for printing TBD - Umicore • Consumer Packaged Goods Eef de Ferrante- AIPIA Coffee Break **Recycling and Sustainability Assessment** • Design for Recycling Ab Stevels – DUT • Challenges and Opportunities for Recycling TBD – Veolia, TBD – Suez • Criticality along the value chain analysis TBD **Moderated panel discussion**
12:00 Lunch break	
Materials and Processes (Rodrigo Martins - UNL)	
13:00 - 16.00	• Printed electronics paper substrates and Paper PCB Gael Depres – ARJOWIGGINS • Cellulose based materials for paper electronics Luís Pereira – FCT-UNL • Electroactive fluorinated polymers for organic electronics Fabrice Domingos dos Santos – ARKEMA • Enhanced printable polymer encapsulation and piezoelectric composites Gerhard Domann – Fraunhofer ISC • Printed intelligence on paper Ari Alstalo - VTT • Electrochromic Inks TBD - Univ. of Bordeaux • Hyper cell-inks Aurore Denneulin - GRENOBLE-INP
16:00 Closing remarks	
Coffee break, get together	

1st EpE / E-MRS Bilateral Workshop

24th of May 2017, Strasbourg, France

Morning session: room Adenauer - First floor
Afternoon session: room Etoile 2 - First floor

Materials for Decarbonized Circular Economy

The goal of this EpE / E-MRS workshop is to gather high level industrialists and scientists in order to identify topics and issues for which more pro-active synergy between these two sectors could significantly enhance the environmental burden of our consumerist society.
"Entreprise pour l'Environnement" (EpE), founded in 1992, is an association of around fifty French and international large companies from all sectors of the economy, who want to make environmental considerations more a part of both their long-term planning and their day-to-day management.

Session 1: Production, storage and use of CO2 and Hydrogen	
S1.0: 8.30 - 8.45:	Introduction by C. Tutenuit (EpE), E. Fogarassy (E-MRS) and G. Dennler (E-MRS)
S1.1: 8.45 - 9.10:	Air Liquide (tbc)
S1.2: 9.10 – 9.35:	Prof. Marc Robert (University Paris Diderot, LEM, France) "Low cost CO_2 reduction "
S1.3: 9.35 – 10.00:	Cryo Pur (tbc)
S1.4: 10.00 – 10.25:	Prof. Wolfram Jaegermann (Technical University, Darmstadt, Germany) "H2 production by green routes"
Coffee Break: 10.25 – 10.50	
Session 2: Recycling, reuse and eco-conception	
S2.1: 10.50 – 11.15:	Renault (tbc) "New automotive materials, safe, efficient and recyclable"
S1.2: 11.15 – 11.40:	Claire Dadou-Willmann (Association Alliance Chimie Recyclage, France) "Recycling and industrial chemistry"
S1.3: 11.40 – 12.05:	Veolia or Solvay (tbc) "Are there still rare metals for energy transition?"
S1.4: 12.05 – 12.30: :	Prof. Oliver Gutfleisch (Fraunhofer IWKS, Hanau, Germany) "Rare Earth Re-Use and Recycling"
Lunch Break: 12.30 – 14.00	
Session 3: Round table	
S3.1: 14.00 – 14.45:	Keynote lecture: Prof. Philippe Chalmin (Paris Dauphine University, France) "Raw Materials and Environmental Challenges"
S3.2: 14.45 – 15.45:	Round table moderated by C. Tutenuit (EpE)
S3.3: 15.45 – 16.00:	Conclusion and closing by C. Tutenuit (EpE), E. Fogarassy (E-MRS) and G. Dennler (E- MRS)



CONFERENCE RECEPTION SOCIAL EVENT

Wednesday May 24 at 19:00

(Hall Rhin - Ground Floor).

All participants are invited to attend the Conference reception.
Enjoy drinks and food while listening to live music!
It is a chance to meet and renew relationships with colleagues.

The participation is free of charge.

The conference will include:
23 parallel symposia, one plenary session, one exhibition and much more

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E-MRS 2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

SYMPOSIUM A

Processing, characterization, modelling and applications of nano energetic materials

Symposium Organizers :

Carole ROSSI, LAAS-CNRS, Toulouse, France

David ADAMS, Sandia National Laboratory, Alburquerqu, USA

Karsten WOLL, Institute for Applied Materials, Eggenstein-Leopoldshafen, Germany

Nie FUDE, Institute of Chemical Materials, Sichuan, China

cnrs dépasser les frontières

Monday 22 May 2017

Nanoparticles processing and properties : Alain Esteve

09:00 **Influence of morphology and microstructure on the reactivity of aluminum nanopowders** — A 1.1
M.-V. Coulet (1), P.-H. Esposito (1), V. Madigou (2), C. Leroux (2), R. Denoyel (1)
(1) Université d'Aix Marseille, CNRS, MADIREL, Marseille, France. (2) Université de Toulon, CNRS, IM2NP, La Garde, France

09:30 **Nano-energetic materials fabricated by atomic/molecular layer deposition** — A 1.2
Hao Feng, Lijun Qin, Ning Yan
Xi'an Modern Chemistry Research Institute, China

09:50 **On The Fly Mixing and 3D Printing of Al/CuO Thermite** — A 1.4
A. Golobic, M.M. Durban, E.B. Duoss, A.E. Gash, K.T. Sullivan
Lawrence Livermore National Laboratory, Livermore, USA

10:10 **Coffee break**

New reactive material : advanced engineering methods vs properties : to be confirmed

10:40 **Mechanochemically Prepared Nanocomposite Reactive Materials** — A 2.1
Edward L. Dreizin
New Jersey Institute of Technology, Newark, USA

11:10 **Mechanoactivation and Features of Detonation of Mixtures of Ammonium Perchlorate with Nanosized Aluminium** — A 2.2
A. Yu. Dolgoborodov (1),(2),(3), A .A. Shevchenko (1),(3), V .G. Kirilenko (1), M. A. Brazhnikov (1)
(1) ICP RAS, Moscow, Russia. (2) JIHT RAS, Moscow, Russia. (3) NRNU MEPhI, Moscow, Russia

11:30 **Creating Reactive Core-Shell Nanoclusters Using Superfluid Helium Droplet Synthesis** — A 2.3
Kyle R. Overdeep, Claron J. Ridge, Brian K. Little, Christopher A. Crouse, C. Michael Lindsay
United States Airforce Research Laboratory, USA

11:50 **Reaction propagation of Metastable Intermolecular Composites at Microscale** — A 2.4
Zhiqiang Qiao, Jun Wang, Bing Huang, Peng Wu, Guangcheng Yang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

12:00 **Lunch**

Reactive thin films : ignition and reaction properties : Karsten Woll

13:30 **Revealing the reaction dynamics and phase evolution in self-propagating reactive nanolaminates using Movie Mode DTEM** — A 3.1
Thomas LaGrange
École Polytechnique Fédérale de Lausanne (EPFL), Interdisciplinary Centre for Electron Microscopy (CIME), Lausanne, Switzerland

14:00 **Study on exothermic reactions and laser ignition of Al/Ni multilayer films** — A 3.2
Ma Tao, Li Yi, Qin Wenzhi
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

14:20 **Pulse duration dependence on direct laser ignition of Al/Pt reactive multilayers** — A 3.3
Michael J. Abere, Cole D. Yarrington, and David P. Adams
Sandia National Laboratories, Albuquerque, USA

14:40 **Sub-critical hotspots to quench reactions in Ni-Al nanofoils** — A 3.4
I. E. Gunduz, M. Beason, S. Son
School of Mechanical Engineering, Purdue University, USA

15:00 **Gas suppression via Cu interlayers in magnetron sputtered Al:Cu2O multilayers** — A 3.5
Alex H. Kinsey, Kyle Slusarski, Timothy P. Weihs
Johns Hopkins University, Baltimore, USA

15:20 **Effects of stacking sequence and ternary additions on self-propagating reactions in ternary Ru/Al-based multilayers** — A 3.6
Christoph Pauly, Karsten Woll, Frank Mücklich
Department of Materials Science and Engineering, Saarland University, Saarbrücken, Germany. Institute for Applied Materials, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany. Department of Materials Science and Engineering, Saarland University, Saarbrücken, Germany

15:40 **Coffee break**

In-situ and advanced characterization techniques : to be confirmed

16:10 **Calorimetry with Millisecond Time Resolution** — A 4.1
Christoph Schick
University of Rostock, Institute of Physics & Faculty of Interdisciplinary Research, Competence Center CALOR, Rostock, Germany

16:40 **Nano-engineering of reactive interfaces to monitor Al/CuO nanolaminate properties** — A 4.2
Lorena Marin, Alain Estève,Yuzhi Gao, Yves Chabal, Carole Rossi
Université de Toulouse, CNRS, LAAS, Toulouse, France

17:00 **Detailed Assessment of Al/Ni Reaction Kinetics using High-Rate Nanocalorimetry** — A 4.3
Michael D. Grapes, David A. LaVan, Timothy P. Weihs
Johns Hopkins University, Baltimore, USA. National Institute of Standards and Technology, Gaithersburg, USA

17:45 **Catalytic Activity of 4-Nitrophenol by Heterostructured Gold Nanoparticles-Titanium Dioxide Nanofibers Nanocatalysts** — A X 3.7
Halit Cavusoglu (1),(2), Burak Zafer Buyukbekar (1), Huseyin Sakalak (1), Sebastian Kohsakowski (3),(4)
(1) Advanced Technology Research and Application Center, Selcuk University, Konya, Turkey. (2) Department of Physics, Selcuk University, Konya, Turkey. (3) University of Duisburg-Essen, Technical Chemistry I and Center of Nanointegration Duisburg-Essen (CENIDE), Essen, Germany. (4) NanoEnergieTechnikZentrum, Duisburg, Germany

Tuesday 23 May 2017

Probing the reaction towards the un derstanding : to be confirmed

09:00 **Relating Atomic Properties of Oxidizers to Ignition Behavior** — **A 5.1**
Xizheng Wang, Michael R. Zachariah
University of Maryland, College Park, USA

09:30 **Helium Droplet Mediated Cluster Assembly as a Tool to Probe the Limits of Energy Storage in Metastable Nanomaterials** — **A 5.2**
C. J. Ridge (1), K. R. Overdeep (2), R. J. Buszek (3), J. A. Boatz (3), C. M. Lindsay (2)
(1) University of Dayton Research Institute, Energetic Materials Branch, Eglin Air Force Base, USA. (2) AFRL, Energetic Materials Branch, Ordnance Division, Eglin Air Force Base, USA. (3) AFRL, Aerospace Systems Directorate, Edwards Air Force Base, USA

09:50 **Analyzing Thermite Reactions by the Direct Observation of Reacting Particles** — **A 5.3**
Michael D. Grapes (1), Robert V. Reeves (1), John M. Densmore (1), Kamel Fezzaa (2), Tony W. Van Buuren (1), Trevor M. Willey (1), Kyle T. Sullivan (1)
(1) Lawrence Livermore National Laboratory, Livermore, USA. (2) Argonne National Laboratory, Argonne, USA

10:10 **Coffee break**

Iodine based reactive materials : to be confirmed

10:40 **Nanostructured Metal Fuels for Defeating Bio-Agents** — **A 6.1**
Timothy P. Weihs
Johns Hopkins University, Baltimore, USA

11:10 **Chemical Dynamics of nano-Aluminum and Iodine Based Oxidizers** — **A 6.2**
B. K. Little (1), C. J. Ridge (1), K. R. Overdeep (2), D. T. Slizewski (2), C. M. Lindsay (2)
(1) University of Dayton Research Institute, Energetic Materials Branch, Eglin Air Force Base, USA. (2) AFRL/RWME, Energetic Materials Branch, Ordnance Division, Eglin Air Force Base, USA

11:30 **Acid Based Synthesis of Aluminum Based Explosive Crystals: Aluminum Iodate Hexahydrate [Al(H2O)6](IO3)3(HIO3)2** — **A 6.3**
Dylan K. Smith, Michelle L. Pantoya
Department of Mechanical Engineering, Texas Tech University, Lubbock, USA

Nanoexplosives : Carole Rossi

11:50 **Design and Fabrication of Nano-CL-20 Inks for Directed Assembly of 3D Structures** — **A 7.1**
Fude Nie, Jun Wang, Baohui Zheng
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

12:15 **3D hierarchical HMX crystalline cluster prepared by supramolecular assembly-disassembly process** — **A 7.2**
Yu Liu (1),(2), Jinjiang Xu (1), Shichun Li (1), Jinshan Li (1), Zeshan Wang (2)
(1) Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China. (2) School of Chemical Engineering, Nanjing University of Science&Technology, Nanjing, China

12:35 **Shape, Size and Arrangement of Nano-scale Defects in RDX and HMX Single Crystals by Quasi-3D SAXS** — **A 7.3**
Haobin Zhang, Yu Liu, Jingjiang Xu, Jie Sun, Xiaolin Wang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

13:00 **Lunch**

Modelling of the ignition and reactions mechanisms : David Adams

14:30 **Modeling Laser Ignition of Al/Pt Nanolaminates** — **A 4.1**
Cole D. Yarrington, Michael J. Abere, David P. Adams
Sandia National Laboratories, Alburquerque, USA

14:50 **A multi-phase micro-kinetic model for simulating the combustion of aluminothermites: case of Al/CuO powder mixtures** — **A 4.2**
Vincent Baijot, Mehdi Djafari Rouhani, Carole Rossi, Alain Estève.
Université de Toulouse, CNRS, LAAS, Toulouse, France

15:10 **Fluorination of an Alumina Surface: Modeling Aluminum ? Fluorine Reaction Mechanisms** — **A 4.3**
Richa Padhye, Michelle L. Pantoya
Texas Tech University, Lubbock, USA

15:30 **Coffee break**

MD simulations : Mehdi Djafari-Rouhani

16:00 **Anisotropic frictional heat dissipation in cyclotrimethylene trinitramine (RDX)** — **A 5.1**
Pankaj Rajak, Rajiv K. Kalia, Aiichiro Nakano and Priya Vashishta
Collaboratory for Advanced Computing and Simulations, Department of Chemical Engineering & Materials Science, Department of Physics & Astronomy, and Department of Computer Science, University of Southern California, Los Angeles, USA

16:15 **Charge Injection at Metal Contact with an Atomic-Layer-Deposited Oxide Interlayer in Organic Field-Effect Transistors** — **A 5.2**
Ran Zhao, Yuanhong Gao, and Xinwei Wang
School of Advanced Materials, Shenzhen Graduate School, Peking University, Shenzhen 518055, China

16:20 **Modelling the Structrual Change of Energetic Crystals at Nano-scale: A Case of ?-RDX under Shock** — **A 5.3**
Wen Qian, Jian Liu, Chaoyang Zhang
Research Center of Energetic Materials Genome Science, Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

POSTER SESSION : Carole Rossi

17:00 **Effect of Nano-sized Oxide Particles on Thermal Decomposition of Spherical Energetic Composites** — **A P.1**
Hong-Min Shim, Jae-Kyeong Kim, Kee-Kahb Koo, Hyoun-Soo Kim
Sogang University, Agency for Defense Development

17:00 **On-chip ignition of Al/CuO reactive multilayers: influence of the heating surface area and substrate nature** — **A P.2**
Andréa Nicollet, Lorena Marin, Andrès Belisario, Carole Rossi
Université de Toulouse, CNRS, LAAS, Toulouse, France

17:00 **Synthesis of tungsten alloys for fusion** — **A P.3**
S. Dine (1), E. Bernard (2), B. Rousseau (2), G. Pieters (2) , N. Herlin-Boime (3), D. Tingaud (1), Ch. Grisolia (4), D. Vrel (1)
(1)LSPM, Université Paris 13, Villetaneuse, France. (2) CEA Saclay, Gif-sur-Yvette, France. (3) CEA, IRAMIS, Gif-sur-Yvette Cedex, France. (4) CEA, IRFM, Saint Paul-lez-Durance, France

17:00 **Modeling of Ignition and Combustion of Al/Fe2O3/HTPB Nanothermite Composites** — **A P.4**
H. Y Chan, M. Suceska, M. L. Tan, C. C. Chong
Energetics Research Institute, Nanyang Technological University, Singapore. Brodarski institut & Marine Research & Special Technologies, Zagreb, Croatia. Energetics Research Institute, Nanyang Technological University, Singapore. Energetics Research Institute, Nanyang Technological University, Singapore.

17:00 **Thermo-kinetic Studies of Aluminum/ Nickel Oxide Nanothermites** — **A P.5**
M. L. Tan, S. Pisharath, N. Sasidharan, H. H. Hng
Energetics Research Institute, Nanyang Technological University, Singapore

17:00 **Si Wire Supported MnO2/Al/Fluorocarbon 3D Core/Shell Nanoenergetic Arrays with Long-Term Storage Stability** — **A P.6**
Ying ZHU (1), Xiang ZHOU (2), Kaili ZHANG (1)
(1) Department of Mechanical and Biomedical Engineering, University of Hong Kong, Hong Kong. (2) National Special Superfine Powder Engineering Research, Nanjing University of Science and Technology, Nanjing, China

17:00 **Performance of the Short-duration Pulse Shock Initiation of Nano-TATB** — **A P.7**
Xiang-li Guo, Kai-yuan Tan, Yong Han, Lu-lu Zhao, Jun Wang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

17:00 **Propagating Exothermic Reactions in Al/Pt Multilayers of Varied Composition** — **A P.8**
D.P. Adams (1), M. Abere (1), R.V. Reeves (2), D. Farrow (1), C. Yarrington (1), C. Sobczak (1)
(1) Sandia National Laboratories, Albuquerque, USA. (2) Lawrence Livermore National Laboratory, Livermore, USA

17:00 **Preparation of Modified AFM Tip and Its Application in the Nanoscale Surface Composition Analysis of Energetic Materials** — **A P.9**
Jinjiang Xu, Jie Sun, Kemei Cheng, Yu Liu, Haobin Zhang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

17:00 **Effects of Energy Release of PTFE Based Reactive Materials Rod under Hyper-Velocity Impacting to Arrayed Plates** — **A P.10**
Lu Zhonghua, Huang Hengjian, Nie Shaoyun, Chai Chuanguo
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

17:00 **Strategy to safe and smart pyrotechnical integrating nanothermites** — **A P.11**
Jean Laurent Pouchairet (1),(2), Andres Belisario (2), Andréa Nicollet (2), Carole Rossi(2), Dominique Medus (1)
(1) LACROIX, Mazères, France. (2) Université de Toulouse, CNRS, LAAS, Toulouse, France

17:00 **Modelling the flame propagation of Al/CuO multilayered thermites** — **A P.12**
Guillaume Lahiner, Andrea Nicollet, Lorena Marin, Mehdi Djafari Rouhani, Alain Estève, Carole Rossi
Université de Toulouse, CNRS, LAAS, Toulouse, France

17:00 **Synthesis and characcterization of aligned ZnO/CuO core/shell nanorod arrays on glass substrate** — **A P.13**
Wang Liang, Tang Duo, Zhou Qing, Li Yong, Jiang Xiaohua
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

17:00 **Proficient Synthesis highly crystallized Iridium dioxide, Nanorods disposed onto Ti.** — **A P.14**
Sung sil Kim, Myung Hwa Kim
Hye Rim Oh

17:00 **Shock wave initiation of reaction in Al+CuO mechanoactivated mixture** — **A P.15**
B. DYankovsky (1), Dolgoborodov A. Yu. (1),(2), Ananev S. Yu. (1),(3)
(1) ICP RAS, Moscow, Russia. (2) JIHT RAS, Moscow, Russia. (3) NRNU MEPhI, Moscow, Russia

17:00 **High energy ball milling, an alternative technique to produce aluminum nanoflakes integrated in rocket propellants.** — **A P.16**
P.-H. Esposito (1), V. Madigou (2), C. Leroux (2), J. Hijlkema (3), G. Casalis (3), D. Blondé (4), E. Bloch (1), R. Denoyel (1), M.-V. Coulet (1)
(1) Université d'Aix Marseille, CNRS, MADIREL, Marseille, France. (2) Université de Toulon, CNRS, IM2NP, La Garde, France. (3) ONERA, DMAE, Mauzac, France. (4) ONERA, DEFA/MAE, Palaiseau, France

17:00 **Development of High-speed Reactive Processing System for carbon fiber-reinforced polyamide-6 composites** — **A P.17**
Sang-Woo Kim, Dong Gi Seong, Moon-Kwang Um, Teahoon Park, Jin-Woo Yi
Composites Research Division, Korea Institute of Materials Science (KIMS), Changwon, South Korea

17:00 **DNA nanotechnologies for investigating Al/CuO nanoenergetic biocomposite: synthesis and thermal properties** — **A P.18**
Théo Calais, Vincent Baijot, Charline Blatché, Mehdi Djafari-Rouhani, Y. Chabal, Alain Esteve, Carole Rossi
Université de Toulouse, CNRS, LAAS, Toulouse, France

17:00 **Stack/flutter Motion Driven Self-retraction Triboelectric Nanogenerator based on Nanostructured PTFE sheet** — **A P.19**
Jihoon Chung, Haksung Moon, Dongseob Kim, Yong Tae Park, and Sangmin Lee
Chung-Ang University. Korea Institute of Industrial Technology. Myongji University

17:00 **Nonlinear Laser Lithography for Graphene-Based Devices** — **A P.20**
Evgeniya Kovalska, Ihor Pavlov, Coskun Kocabas, Fatih Ömer Ilday
Bilkent University, Ankara, Turkey

17:00 **Development of Density Functional Correction Method for Diverse Types of Systems** — **A P.21**
Minho Kim, Won June Kim, Sébastien Lebègue, Hyungjun Kim
Graduate School of EEWS, Korea. Advanced Institute of Science and Technology (KAIST), Korea. Université de Lorraine, CNRS, Laboratoire de Cristallographie, Résonance Magnétique et Modélisations

17:00 **Effect of Nano-sized Oxide particles on Thermal Decomposition of Spherical Energetic Composites** — **A P.22**
Hong-Min Shim, Jae-Kyeong Kim, Kee-Kahb Koo, Hyoun-Soo Kim
Sogang University, Seoul, Korea. Agency for Defense Development, Daejeon, Korea

17:00 **MECHANOCHEMICAL PREPARATION OF CELLULOSE-METAL NANOPARTICLE COMPOSITES** — **A P.23**
Özge Bayrak, Tutku Bedük, Bilge Baytekin
Chemistry Department, Bilkent University, Ankara, TURKEY. UNAM, Bilkent University,Ankara, TURKEY

3D hiereachical assembly of reactive compounds : to be confirmed

09:00 **2D MoO3 Processing by Top Down and Bottom Up Techniques and Enhanced Combustion of 2D MoO3/Al Energetic Composites** — **A 10.1**
Naadaa Zakiyyan, Haisheng Zheng, Connor Wolenski, Angi Wang, Brandon Smith, Rajagopalan Thiruvengadathan, Keshab Gangopadhyay, Matthew Maschmann, Shubhra Gangopadhyay
University of Missouri, Columbia, USA

09:20 **3D Hierarchically Ordered Porous Carbon Based Nanocomposites for Self-Catalytical Decomposition of Ammonium Perchlorate** — **A 10.2**
Jin Chen, Peng Wu, Bing Huang, Guangcheng Yang, Hui Huang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

09:40 **NANOPARTICLE COMPOSITES BY MECHANOCHEMISTRY** — **A 10.3**
Bilge Baytekin, Özge Bayrak, Tutku Bedük
Chemistry Department, Bilkent University, Ankara, TURKEY. UNAM, Bilkent University, Ankara, TURKEY

10:00 **Coffee break**

3D printing : David Adams

10:30 **Controlling Material Reactivity using Architecture** — **A 11.1**
Kyle T. Sullivan, Cheng Zhu, Eric B. Duoss, Matt M. Durban, Alexander E. Gash, Alexandra Golobic, Michael D. Grapes, David B. Kolesky, Joshua D. Kuntz, Jennifer A. Lewis, Christopher M. Spadaccini
Lawrence Livermore National Laboratory, Livermore, USA. Harvard University, Cambridge, USA

11:00 **Ink Formulation and Direct Ink Writing of Thermites** — **A 11.2**
M. M. Durban, A. Golobic, E. B. Duoss, A. E. Gash, K. T. Sullivan
Lawrence Livermore National Laboratory, Livermore, USA

11:20 **Tailoring Reaction and Mechanical Properties of Reactive Composite Structures Made By Additive Manufacturing** — **A 11.3**
Robert V. Reeves, Christopher E. Shuck, Michael D. Grapes
Lawrence Livermore National Laboratory, Livermore, USA. University of Notre Dame, USA

12:00 **Lunch**

16:15 **Plenary Session**

E-MRS 2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

SYMPOSIUM B

Advanced materials and systems for electrochemical energy storage

Symposium Organizers :

Alexandru VLAD, Université Catholique de Louvain, Belgium

Stefano PASSERINI, Karlsruhe Institute of Technology, Ulm, Germany

Yan YAO, University of Houston, USA

Yang-Kook SUN, Hanyang University, Seoul, Korea

INTERNATIONAL SOCIETY OF ELECTROCHEMISTRY ISE

超威集团 CHILWEE

Monday 22 May 2017

Electrolyte Systems 1 : A. Vlad

09:00 **Protic ionic liquids as electrolytes for lithium batteries** **B 1.1**
Andrea Balducci
Friedrich-Schiller-University Jena Institute for Technical Chemistry and Environmental Chemistry Center for Energy and Environmental Chemistry Jena (CEEC Jena) Philosophenweg 7a, 07743 Jena, Germany

09:30 **BIREDOX IONIC LIQUIDS: NEW OPPORTUNITY FOR HIGH ENERGY SUPERCAPACITORS** **B 1.2**
Eléonore Mourad,1 Stefan A. Freunberger,2 Frédéric Favier,1 3 Olivier Fontaine1 3
1 Institut Charles Gerhardt Montpellier, UMR 5253, CC 1701, Université Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, France 2 Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria 3 Réseau sur le Stockage Electrochimique de l?énergie (RS2E), FR CNRS

09:45 **Impact of electrolyte stability on electrochemical performance of Li-ion battery** **B 1.3**
Chunsheng Wang
Department of Chemical & Biomolecular Engineering University of Maryland, College Park, USA

10:15 **Coffee Break**

Electrolyte Systems 2 : A. Balducci

10:45 **New electrode/electrolyte combination for aqueous Li-ion batteries** **B 2.1**
Laura Coustan, Daniel Bélanger
NanoQAM, Université du Québec à Montréal

11:00 **Large enhancement of ionic conductivity in composite polymer electrolyte with well-aligned ceramic nanowires** **B 2.2**
Wei Liu, Yi Cui
Stanford University

11:15 **Diffusion pathways and local chemical structures of new lithium thiophosphates** **B 2.3**
C. Dietrich, D.A. Weber, S. Culver, J. Janek, W.G. Zeier
Institute of Physical Chemistry, Justus-Liebig-University Giessen, Heinrich-Buff-Ring 17, D-35392 Giessen, Germany: C. Dietrich, D.A. Weber, S. Culver, J. Janek, W.G. Zeier. BELLA ? Batteries and Electrochemistry Laboratory, Institute of Nanotechnology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz Platz 1, D-76344 Eggenstein-Leopoldshafen, Germany: J. Janek

11:30 **Simulating the electro-thermal response of lithium-ion cell under various conditions** **B 2.4**
Ping Ping, Youngmann Chung, Qingsong Wang and Jennifer Wen
University of Warwick

11:45 **Renewing concepts in Polymer Electrolytes** **B 2.5**
Zhi-Bin Zhou(1), D. Mecerreyes(2), L. Meabe(2), S. Grugeon(3), S. Laruelle(4) & Michel Armand (1,4)
(1) CIC Energigune, Parque Tecnológico de Álava, Albert Einstein 48, 01510 Miñano, Álava, Spain (2) School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, 1037 Luoyu Road, Wuhan 430074, China. (3) POLYMAT, University of the Basque Country UPV/EHU, Joxe Mari Korta Centre, Avda. Tolosa 72, 20018 Donostia-San Sebastián, Spain (4) Laboratoire de Réactivité et Chimie des Solides CNRS UMR 7314 Université de Picardie Jules Verne, 33 rue Saint Leu, 80039 Amiens, France

12:15 **Lunch**

Li-Sulfur Batteries : R. Dominko

13:45 **A route to sustainable and high energy Li-Sulfur batteries** **B 3.1**
Marco Agostini, Du-Hyun Lim and Aleksandar Matic
Department of Applied Physics, Chalmers University of Technology, S41296 Göteborg, Sweden.

14:00 **Operando X-ray Absorption and Emission spectroscopies and operando X-ray Diffraction to understand Li2S particle size influence** **B 3.2**
Alice Robba, Renaud Bouchet, Céline Barchasz, Jean-François Colin, Erik Elkaïm, Kristina Kvashnina, Gavin Vaughan, Matjaz Kavcic, Fannie Alloin
Université Grenoble Alpes, LEPMI, F-38000 Grenoble, France & CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble, France , Université Grenoble Alpes, LEPMI, F-38000 Grenoble, France & CNRS, LEPMI, F-38000 Grenoble, France , CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble, France , CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble, France , Synchrotron SOLEIL, Saint Aubin 91190, France , Laboratory ESRF, 71 avenue des Martyrs CS 40220 FR, 38043 GRENOBLE Cedex 9 , Laboratory ESRF, 71 avenue des Martyrs CS 40220 FR, 38043 GRENOBLE Cedex 9 , Laboratory Institute Jozef Stefan Jamova 39 SI, 1000 LJUBLJANA , Université Grenoble Alpes, LEPMI, F-38000 Grenoble, France & CNRS, LEPMI, F-38000 Grenoble, France

14:15 **XAS as a powerful tool to understand materials for energy storage** **B 3.3**
Maria Alfredsson, Nanami Yokota, Matteo Hogan
School of Physical Sciences, University of Kent, Canterbury, CT2 7HN, UK

14:30 **Advanced Lithium-Sulfur Battery Configurations** **B 3.4**
Lorenzo Carbone 1, Steve G. Greenbaum 2 and Jusef Hassoun 3,*
1 Chemistry Department, Sapienza University of Rome, Piazzale Aldo Moro, 5, 00185, Rome, Italy 2 Department of Physics & Astronomy, Hunter College of the City University of New York, New York, New York 10065, United States 3 Department of Chemical and Pharmaceutical Sciences, University of Ferrara, Via Fossato di Mortara, 44121, Ferrara, Italy

15:00 **Multiscale Multimode Diagnostics of Electrode Materials for High-Energy Li-Ion Batteries by Advanced Focused Ion and E-Beam Tech** **B 3.5**
Vladimir P. Oleshko 1, Andrew A. Herzing 1, Saya Takeuchi 2,4 Kevin A. Twedt 3,5,6 William R. McGehee 3,5, Oleg Kirillov 2, David Gundlach 2, Evgheni Strelcov 3,5, Nikolai Zhitenev 3, Chris L. Soles 1 Jabez McClelland 3
1 Material Measurement Laboratory, 2 Physical Measurement Laboratory and 3 Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD 20899, USA. 4 Theiss Research, La Jolla, CA 92037, USA 5 Maryland Nanocenter, University of Maryland, College Park, MD 20742, USA 6 Science Systems and Applications Inc., Lanham, MD 20706, USA

15:15 **Coffee Break**

Alternatives to Li ion batteries : A. Balducci, Y. Yao

15:45 **The Effect of Additive on Zinc Electrodeposition Mechanism in Zinc-ion Batteries** **B 4.1**
Amir Bani Hashemi, Ghoncheh Kasiri, Fabio La Mantia
Energiespeicher- und Energiewandlersysteme, Fachbereich Produktionstechnik, Universität Bremen, Bremen, Germany

16:00 **Suppression of zinc dendrite formation in secondary flexible printed zinc-air battery using carbopol gel** **B 4.2**
Praramet Sangwanpet, Woranunt Lao-atiman, Soorathep Kheawhom
Computational Process Engineering, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok 10330, Thailand

16:15 **XPS Comparative Analysis of the Chevrel Phase Mo6S8 and the Analogous Mo6Se8 During Mg Insertion** **B 4.3**
Julien RICHARD, Jean-François COLIN, Anass BENAYAD, Sébastien MARTINET
Université Grenoble Alpes CEA/LITEN 17 avenue des Martyrs Grenoble

16:30 **Perspective of magnesium batteries** **B 4.4**
Jan Bitenc, Klemen Pirnat, Tanja Ban?i?, Anna Randon Vitanova, Robert Dominko
National institute of chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia, Honda R&D Europe (Deutschland) GmbH, Carl-Legien-Strasse 30, 63073 Offenbach, Germany

17:00 **METAL ANODES: ELECTRODEPOSITION AND RELIABILITY OF HALF CELL TESTS** **B 4.5**
D. Tchitchekova, D. Monti, P. Johansson, M. R. Palacín, A. Ponrouch
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Chalmers University of Technology, Chalmers University of Technology, ICMAB-CSIC, ICMAB-CSIC

17:15 **Lithium metal anode cycling, an effective approach to probe the interface evolution** **B 4.6**
Rolland J.(a), Lachambre J. (b), Deschamps M. (c), Maire E. (b), Bouchet R. (a)
(a) Laboratoire d'électrochimie et physicochimie des matériaux et des interfaces, Grenoble, (b) Laboratoire Mateis, INSA-Lyon, (c) Blue Solutions France, Quimper

17:30 **Efficient Electrode Design Renders Dendrite-free Li Metal Anode** **B 4.7**
Xin-Bing Cheng, Hong-Jie Peng, Rui Zhang, Jia-Qi Huang, Fei Wei, Qiang Zhang
Beijing Key Laboratory of Green Chemical Reaction Engineering and Technology, Department of Chemical Engineering, Tsinghua University, Beijing, China 100084

Conversion and Alloy Negative Electrodes : A. Vlad

08:30 **A synthesis of porous copper sulfides (CuxSy) microspheres via a thermal treatment as an Anode Material for Sodium ion battery** — Ƀ 5.1
Donghyeok Shin1, Hyunjung Park1 and Ungyu Paik1*
1Department of Energy Engineering, Hanyang University, Seoul 133-791, Korea.
E-mail: upaik@hanyang.ac.kr

08:45 **How much does size really matter? Exploring the limits of graphene as Li ion battery anode material** — Ƀ 5.2
H. Sun, A. Varzi, V. Pellegrini, R. Raccichini, D A Dinh, A.E. Del Rio-Castillo, M. Prato, M. Colombo, R. Cingolani, B. Scrosati, S. Passerini, F. Bonaccorso
1. Istituto Italiano di Tecnologia, Graphene Labs, I-16163 Genova, Italy 2. Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89081 Ulm, Germany 3. Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany 4. Istituto Italiano di Tecnologia, Nanochemistry Department, via Morego 30, 16163 Genova, Italy

09:00 **Potential synergies and remaining challenges for combined conversion/alloying materials as lithium-ion anodes** — Ƀ 5.3
Dominic BRESSER
University Grenoble Alpes, F-38000 Grenoble, France CEA, INAC, SYMMES, PCI, F-38054 Grenoble, France CNRS, INAC, F-38000 Grenoble, France

09:30 **Atom Probe Tomography Characterization of a Silicon Alloy as Anode of Li-ion Batteries** — Ƀ 5.4
Y. Zheng, A. Marshal, K.G. Pradeep, B. Moeremans, F.U. Renner
Y. Zheng, Institute for Materials Research, Hasselt University, 3590 Diepenbeek, Belgium, A. Marshal, K.G. Pradeep,Materials Chemistry, RWTH Aachen University, Kopernikusstr.10, 52074 Aachen, Germany, B. Moeremans,Institute for Materials Research, Hasselt University, 3590 Diepenbeek, Belgium, F.U. Renner,Institute for Materials Research, Hasselt University, 3590 Diepenbeek, Belgium, IMEC vzw. Division IMOMEC, Wetenschapspark 1. 3590 Diepenbeek, Belgium,

09:45 **Synthesis of carbon/Sb-nanoparticles hybrid materials as anodes for Na-ion batteries** — Ƀ 5.5
Cristina Nita 1,2, Julien Fullenwarth 3, Julien Parmentier 1, Laure Monconduit 3, Cathie Vix-Guterl 1,4, Camelia Matei Ghimbeu 1,4
1 Institut de Science des Matériaux de Mulhouse (IS2M), UMR 7361 CNRS-UHA, 15 rue Jean Starcky, BP 2488, 68057 Mulhouse Cedex, France, 2 National Institute for Lasers, Plasma and Radiation Physics, Atomistilor 409 bis, RO-77125, Magurele, Romania, 3 ICG/AIME (UMR 5253 CNRS), Université Montpellier II CC 15-02, Place E. Bataillon, 34095 Montpellier Cedex 5, France, 4 Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS FR3459, 33 Rue Saint Leu, 80039 Amiens Cedex, France,

10:00 **Coffee Break**

Metal-O2 Batteries and Electrochemistry : Y.-K. Sun

10:30 **Cathode Reactions in Rechargeable Aprotic Metal-O2 Batteries** — Ƀ 3.18
Peter G. Bruce
Departments of Materials and Chemistry, University of Oxford, Oxford, UK

11:00 **Understanding and Suppressing Parasitic Reactions in Non-aqueous Alkaline-O2 Batteries** — Ƀ 6.2
N. Mahne, B. Schafzahl, C. Leypold, S. Grumm, G. A. Strohmeier, M. Leypold, M. Wilkening, O. Fontaine, D. Kramer, C. Slugovc, S. M. Borisov, S. A. Freunberger
Graz University of Technology, Graz University of Technology, Graz University of Technology, Graz University of Technology, Graz University of Technology, Graz University of Technology, Graz University of Technology, University of Montpellier, University of Southampton, Graz University of Technology, Graz University of Technology, Graz University of Technology

11:15 **Embedded high density of atomic metal atoms into nanocarbon matrix for potential catalytic applications** — Ƀ 6.3
Daobin Liu*, Li Song
D. Liu, L. Song National Synchrotron Radiation Laboratory, CAS Center for Excellence in Nanoscience, University of Science and Technology of China, Hefei, Anhui 230029, China

11:30 **Electro-precipitation via oxygen reduction: a new technique for thin film manganese oxide deposition** — Ƀ 6.4
Gijs Vanhoutte*, Minxian Wu*, Philippe M. Vereecken^, Koen Binnemans», Jan Fransaer*
*Department of Materials Engineering, KU Leuven, Kasteelpark Arenberg 44, B-3001 Leuven, Belgium ^Imec, Kapeldreef 75, B-3001 Leuven, Belgium «Department of Chemistry, KU Leuven, Celestijnenlaan 200F, B-3001 Leuven, Belgium

11:45 **Carbon-transition metal nitrides hybrid nanostructures as bifunctional electrocatalysts for dominant OER and HER performance** — Ƀ 6.5
Zhihe Liu, Hua Tan, Hong Liu*
Shandong University, China

12:00 **Lunch**

Nanostrutured and Thin Film Batteries : Y. Yao

13:45 **Stimuli-Responsive Flexible On-Chip Micro-Supercapacitors** — Ƀ 7.1
Xiaodong Zhuang, Panpan Zhang, Oliver G. Schmidt, Xinliang Feng
Technische Universität Dresden, Mommsenstr. 4, 01069 Dresden, Germany

14:00 **Simple and Green Method for Fabricating $V_2O_5 \cdot nH_2O$ Nanosheets for Lithium Battery Application** — Ƀ 7.2
Ahmed S. Etman*, Andrew Kentaro Inge, Xu Jiaru, Reza Younesi, Kristina Edström, and Junliang Sun
Ahmed S. Etman, Dr. Andrew Kentaro Inge, and Prof. Junliang Sun: Berzelii Center EXSELENT on Porous Materials, Department of Material and Environmental Chemistry (MMK), Stockholm University, Sweden. Dr. Reza Younesi, and Prof. Kristina Edström: Ångström Advanced Battery Centre (ÅABC), Department of Chemistry, Ångström Laboratory, Uppsala University, Sweden. Xu Jiaru, and Prof. Junliang Sun: College of Chemistry and Molecular Engineering, Peking University, China .

14:15 **Evidence for a nanosize effect of V_2O_5 on structural and electrochemical properties** — Ƀ 7.3
Da Huo (1), Barbara Laïk *(1), Pierre Bonnet (2), Katia Guérin (2), Céline Cénac-Morthe (3), Rita Baddour-Hadjean (1), Jean-Pierre Pereira-Ramos (1)
(1) Institut de Chimie et des Matériaux Paris Est, GESMAT, Université Paris Est, UMR 7182, CNRS-UPEC, 2 rue Henri Dunant, F- 94320 Thiais, France , (2) Institut de Chimie de Clermont-Ferrand, UMR 6296 CNRS-Université Blaise Pascal, BP 10448, F-63000 Clermont-Ferrand, France , (3) Centre National d'Études Spatiales, 18 avenue Edouard Belin, F-31401, Toulouse cedex 9, France.

14:30 **Thin Film Processing, Structures and Architectures for Advanced Batteries** — Ƀ 7.4
Gary Rubloff
University of Maryland

15:00 **Fundamental Insights on Chemical Stability and Interface Resistance of the LiCoO2/LiPON Interface** — Ƀ 7.5
Mathias Fingerle, Roman Buchheidt, René Hausbrand
Institute of Material Science, Darmstadt University of Technology, Jovanka-Bontschits-Str. 2, 64287 Darmstadt, Germany

15:15 **An all-solid-state 3D thin-film Li-ion battery fabricated on a silicon micropillar array** — Ƀ 7.6
M. J. Mees (1), N. Labeydh (1-2), B. Put (1), S. Moitzheim (1-2), A. Sepulveda (1), M. Creatore (3), W. M. M. Kessels (3) and P. M. Vereecken (1-2)
(1) imec, Kapeldreef 75, 3001, Belgium, (2) Department of Microbial and Molecular Systems, Centre for Surface Chemistry and Catalysis, KU Leuven – University of Leuven, Celestijnenlaan 200F, B-3001 Leuven, Belgium, (3) Department of Applied Physics, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands

15:30 **Coffee Break**

Flexible Design Batteries and Supercapacitors : G. Rubloff

16:00 **Performance of textile electrodes in all-iron aqueous redox flow batteries** — Ƀ 8.1
Noemí Aguiló-Aguayo and Thomas Bechtold
Research Institute of Textile Chemistry and Textile Physics, University of Innsbruck

16:15 **Semiconductor Based Supercapacitor with High Capacitance and Intrinsic Smart Functions** — Ƀ 8.2
Minshen Zhu, Chunyi Zhi
City University of Hong Kong, Kowloon, Hong Kong SAR

16:30 **Fiber-Shaped Energy Harvesting and Storage Devices** — Ƀ 8.3
Huisheng Peng
State Key Laboratory of Molecular Engineering of Polymers, Department of Macromolecular Science, and Laboratory of Advanced Materials, Fudan University, Shanghai 200438, China

17:00 **MXene-on-Paper Co-Planar Microsupercapacitors** **B 8.4**
Narendra Kurra1 ,2, Bilal Ahmed1, Yury Gogotsi2, and H. N. Alshareef1
1 Materials Science and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal 23955&#8211,6900, Saudi Arabia 2 Department of Materials Science and Engineering, and A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104 USA

17:15 **Charge storage mechanisms of manganese oxide nanosheets and N-doped graphene aerogel for supercapacitors** **B 8.5**
Pawin Iamprasertkun, Atiweena Krittayavathananon and Montree Sawangphruk,*
Department of Chemical and Biomolecular Engineering, School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and Technology, Rayong 21210, Thailand *Corresponding author. Tel: (+66) 33014251, Fax: (+66) 33014445, E-mail: montree.s@vistec.ac.th

17:30 **Flexible and wearable energy storage fibers and textiles** **B 8.6**
Ye Zhang, Huisheng Peng
Department of Macromolecular Science and Laboratory of Advanced Materials, Fudan University

POSTER SESSION 1 : A. Vlad

18:00 **Potentiostatically electrodeposited nanostructured manganese dioxide films for electrochemical capacitors** **B 9.1**
P.P. Sahay
Department of Physics, Motilal Nehru National Institute of Technology Allahabad, Allahabad-211 004, India.

18:00 **Annealing environment reliant in depth analysis of structural, morphological and electrochemical performance of Ni-foam** **B 9.2**
Vijaykumar. V. Jadhav,? Rohan M. Kore,? Balkrishna J. Lokhande,? Rajaram S. Mane §, ? and Kwan W. Kim?
? School of Materials Science and Engineering, Pusan National University, San 30 Jangjeon-dong, Geumjeong-gu, Busan 609-735, Republic of Korea ? Supercapacitive Studies Laboratory, School of Physical Sciences, Solapur University, Solapur, 413255, India § Center for Nanomaterials & Energy Devices, School of Physical Sciences, S.R.T.M. University, Nanded,431606, India

18:00 **Effects of electrolyte additives on LiNi0.8Co0.1Mn0.1O2 as a Ni-rich cathode material of lithium-ion batteries** **B 9.3**
Jimin Oh1), Young-Gi Lee1), Yong Min Lee2), Kwang Man Kim1)
1) Electronics and Telecommunications Research Institute, 2) Hanbat National University

18:00 **Facile synthesis of nickel phosphide (Ni2P) for electrochemical capacitors** **B 9.4**
Yunjun Ruan, Jianjun Jiang*
School of Optical and Electronic Information, Huazhong University of Science and Technology, 1037 Luoyu Road, Wuhan, China

18:00 **Enhanced Li+ Conduction in Perovskite Li3xLa2/3-x□1/3-2xTiO3 Solid-electrolyte via Microstructural Engineering** **B 9.5**
Woo Ju Kwon, Kyu-Nam Jung, Jong-Won Lee, Min-Sik Park
New and Renewable Energy Research Division, Korea Institute of Energy Research, 152 Gajeong-ro, Yuseong-gu, Daejeon 34129, Republic of Korea, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin 17104, Republic of Korea.

18:00 **Bestow metal foams with nanostructured surface via a convenient electrochemical method for improved device performance** **B 9.6**
Yawen Zhan, Yang Yang Li
a Center of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong b Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong

18:00 **Nanoporous silver double-layers by convenient electrochemical method for SERS applications** **B 9.7**
Yawen Zhan, Yang Yang Li
a Center of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong b Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong

18:00 **Covalent Organic Framework (COF) on Carbon Nanotube (CNT) Hierarchical Porous Architecture for Advanced Lithium-Sulfur Batteries** **B 9.8**
JongTae Yoo, Sung-Ju Cho, Sang-Young Lee
Department of Energy Engineering, School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST)

18:00 **Poly(2,5-dihydroxyaniline): a redox polymer with electrically conductive molecular backbone for battery cathodes** **B 9.9**
L. Sieuw, B. Ernould, J.-F. Gohy and A. Vlad
Institute of Condensed Matter and Nanosciences, Molecules, Solids and Reactivity, Université catholique de Louvain

18:00 **Carbon-coated silica nanocomposites with hollow structure as anodes for lithium-ion batteries** **B 9.10**
Xuelian Liu, Yuxi Chen, Jiande Wang, Hongbo Liu
Institute of Condensed Matter and Nanoscience, Université Catholique de Louvain, Place Louis Pasteur 1, B-1348, Louvain-la-Neuve, Belgium, College of Materials Science and Engineering, Hunan University, Changsha 410082, PR China, Institute of Condensed Matter and Nanoscience, Université Catholique de Louvain, Place Louis Pasteur 1, B-1348, Louvain-la-Neuve, Belgium, College of Materials Science and Engineering, Hunan University, Changsha 410082, PR China

18:00 **Reduced Graphene-Wrapped MnO2 Nanowires Self-Inserted with Co3O4 Nanocages: Remarkable Enhanced Performances for LIB** **B 9.11**
Qi Zhu Yunhui Li Ying Gao Xiao Wang Shuyan Song
Université catholique de Louvain (Belgium) Changchun University of Science and Technology (P. R. China) Changchun University of Science and Technology (P. R. China) Changchun Institute of Applied Chemistry, Chinese Academy of Science (P. R. China) Changchun Institute of Applied Chemistry, Chinese Academy of Science (P. R. China)

18:00 **Low-temperature solid state synthesis of Li4Ti5O12 with improved electrochemical performance for Li-ion batteries** **B 9.12**
Markéta Zukalová, Mamoru Senna, Martin Fabián, Ladislav Kavan, Jaroslav Brian?in, Erika Turianicová, Patrick Bottke, Martin Wilkening, Vladimír ?epelák
J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Praha, Czech Republic, Faculty of Science and Technology, Keio University, Yokohama, Japan, Institute of Geotechnics, Slovak Academy of Sciences, Kosice, Slovak Republic, J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Praha, Czech Republic, Institute of Geotechnics, Slovak Academy of Sciences, Kosice, Slovak Republic, Institute of Geotechnics, Slovak Academy of Sciences, Kosice, Slovak Republic, Institute for Chemistry and Technology of Materials, Christian Doppler Laboratory for Lithium Batteries, Graz University of Technology, Graz, Austria, Institute for Chemistry and Technology of Materials, Christian Doppler Laboratory for Lithium Batteries, Graz University of Technology, Graz, Austria, Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany

18:00 **Tuning the Double Layer of Graphene Oxide through Phosphorus Doping for Enhanced Supercapacitance** **B 9.13**
Weixin Song,1,3 Johannes Lischner,1,2,3 Victoria Garcia Rocha,1,4 Heng Qin,1,3 Jiahui Qi,1,3 Joseph H.L. Hadden,1,3 Cecilia Mattevi,1,3 Fang Xie,1,3 D. Jason Riley1,3*
1 Department of Materials, Imperial College London, London SW7 2AZ, UK. 2 Thomas Young Centre at Imperial College London, London SW7 2AZ, UK. 3 London Centre for Nanotechnology, London SW7 2AZ, UK. 4 School of Engineering, Cardiff University, Cardiff CF243AA, UK.

18:00 **A Cross-Linked binder system with improved electrolyte permeation for a thick and dense graphite anode of Li-ion batteries** **B 9.14**
Dongsoo Lee1, Hyunjung Park1, DongHyeok Shin1, and Ungyu Paik1*
1Department of Energy Engineering, Hanyang University, Seoul 133-791, Korea.
E-mail: upaik@hanyang.ac.kr

18:00 **PVDF-HFP modified thick graphite anode with a high energy density for Li-ion batteries** **B 9.15**
Keemin Park1, Hyunjung Park1, DongHyeok Shin1, and Ungyu Paik1*
1Department of Energy Engineering, Hanyang University, Seoul 133-791, Korea E-mail: upaik@hanyang.ac.kr

18:00 **Porous graphite-SiOx composite negative electrodes via sulfur sublimation for high energy density lithium ion batteries** **B 9.16**
Jeongheon Kim1‡, Donghyeok Shin1, and Ungyu Paik1*
1Department of Energy Engineering, Hanyang University, Seoul 133-791, Korea E-mail: upaik@hanyang.ac.kr

18:00 **Fire-retardant organic electrolytes based on the ionic liquids with a pyrrolinium cation for lithium ion batteries** **B 9.17**
< u>Yoonjae Lee< /u>< sup>1)< /sup>, Namtae Kim< sup>1)< /sup>, Haemin Yang< sup>1)< /sup>, Hyung-Tae Kim< sup>1)< /sup>, Taeeun Yim< sup>1),2)< /sup> , Junyoung Mun< sup>1),3)< /sup>, Seung M. Oh< sup>1)< /sup>, Young Gyu Kim< sup>*1)< /sup>
< sup>1)< /sup> School of Chemical and Biological Engineering, College of Engineering, Seoul National University, Seoul, 08826, Korea, < sup>2)< /sup> Department of Chemistry, College of Natural Sciences, Incheon National University, Incheon, 22012, Korea, < sup>3)< /sup> Department of Energy and Chemical Engineering, College of Engineering, Incheon National University, Incheon, 22012, Korea E-mail: ygkim@snu.ac.kr

18:00 **Fabrication of ultrathin Ni-Co layered double hydroxide nanosheet arrays for hybrid supercapacitors** **B 9.18**
Teng Wang, Hongxia Wang,* John Bell
School of Chemistry, Physics and Mechanical Engineering, Science and Engineering Faculty, Queensland University of Technology, Brisbane, QLD 4001, Australia. E-mail: hx.wang@qut.edu.au.

18:00 **High performance Na-ion hybrid capacitor based on Layered sodium titanium oxide hydroxide nanostructures** **B 9.19**
Binson Babu M. M. Shaijumon
Indian Institute of Science Education and Research Thiruvananthapuram, Kerala, India

18:00 **Chemically stable IPN anion exchange membrane based on urushi for non-aqueous Redox Flow Battery** **B 9.20**
Dongyoung Kim, Jongok Won*
Sejong University, Seoul, Gwangjin-gu

18:00 **Modified Nafion membranes using urushi as a blocking material for aqueous vanadium redox flow battery application** **B 9.21**
Jiyoon Jung, Eun Hae Cho, Jongok Won*
Sejong University, Seoul, Gwangjin-gu

18:00 **Anatase TiO2 with extraordinary sodium-ion storage performance by facile Al2O3 surface modification** **B 9.22**
1 Tao Li, 2 Xue Bai, 3 Umair Gulzar, 4 Subrahmanyam Goriparti, 5 Claudio Capiglia, 6 Remo Proietti Zaccaria
1. Istituto Italiano di Tecnologia, via Morego 30, Genova 16163, Italy, University of Genova, via Balbi 5, Genova 16126, Italy 2. Key Laboratory for Liquid–Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, Jinan 250061, China, Istituto Italiano di Tecnologia, via Morego 30, Genova 16163, Italy 3. Istituto Italiano di Tecnologia, via Morego 30, Genova 16163, Italy, University of Genova, via Balbi 5, Genova 16126, Italy 4. Istituto Italiano di Tecnologia, via Morego 30, Genova 16163, Italy 5. Istituto Italiano di Tecnologia, via Morego 30, Genova 16163, Italy, Recruit R&D Co., Ltd., Recruit Ginza 8 Bldg. 8-4-17, Ginza Chuo-Ku, Tokyo, 104- 8001, Japan 6. Istituto Italiano di Tecnologia, via Morego 30, Genova 16163, Italy, Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, 219 Zhongguan West Road, Zhenhai District, Ningbo City, Zhejiang Province, 315201, China

18:00 **Crumpled graphene decorated with uniformly distributed nanoparticles for hydrogen evolution reaction** **B 9.23**
Ju Young Kim, Dong Ok Shin, Young Gi Lee, Sang Ouk Kim
Ju Young Kim, Dong Ok Shin, Young Gi Lee, Multidisciplinary Sensor Research Group, Electronics and Telecommunications Research Institute (ETRI) Sang Ouk Kim, Department of Materials and Science Engineering, KAIST

18:00 **Li1.4Al0.4Ti1.6(PO4)3–Bi2O3 composite electrolyte with enhanced conductivity for all-solid-state lithium battery** **B 9.24**
Kyu-Nam Jung, Min-Sik Park, Jong-Won Lee
Energy Efficiency and Materials Research Division, Korea Institute of Energy Research, Daejeon, Republic of Korea, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Yongin, Republic of Korea, New and Renewable Energy Research Division, Korea Institute of Energy Research, Daejeon, Republic of Korea

18:00 **On ship integration of High-performance Micropseudocapacitors based on Silicon nanotrees coated by transition metal oxides and h** **B 9.25**
A. Valero ,G. Gaboriau ,P. Gentile ,S. Sadki.
A. Valero,G. Gaboriau: Univ. Grenoble Alpes, INAC-SyMMES, F-38000 Grenoble, France CEA, INAC-SYMMES/STEP (1-309C-2-R), F-38000 Grenoble, France CEA-INAC-PHELIQS-SINAPS, F-38000 Grenoble, France P. Gentile: CEA-INAC-PHELIQS-SINAPS, F-38000 Grenoble, France S. Sadki: Univ. Grenoble Alpes, INAC-SyMMES, F-38000 Grenoble, France CEA, INAC-SYMMES/STEP (1-309C-2-R), F-38000 Grenoble, France

18:00 **Fabrication of paper-based microsupercapacitors by supersonic cluster beam deposition** **B 9.27**
Luca Bettini, Andrea Bellacicca, Paolo Piseri, Paolo Milani
CIMaINa and Dipartimento di Fisica, Università degli Studi di Milano, via Celoria 16, 20133 Milano, Italy

18:00 **Silicon nano-trees as high surface capacity anodes for lithium-ion batteries** **B 9.28**
Lucie Leveau (a), Barbara Laïk *(b), Jean-Pierre Pereira-Ramos (b), Aurélien Gohier (c), Pierre Tran-Van (c), Costel-Sorin Cojocaru (b)
(a) Laboratoire de Physique des Interfaces et des Couches Minces, École Polytechnique, Route de Saclay, 91128 Palaiseau Cedex, France, (b) Institut de Chimie et des Matériaux Paris-Est, ICMPE/GESMAT, UMR 7182 CNRS-UPEC, 2 à 8 rue Henry Dunant, 94320 Thiais, France, (c) Renault SAS, DREAM/DETA/SEE, 1, Avenue du Golf, 78288 Guyancourt, France

18:00 **Controlling Hydrogen Evolution Activity by Phase Transition in MoTe2** **B 9.29**
Jessica C. McGlynn, James P. Fraser, Alexey Ganin
University of Glasgow

18:00 **Stable Cathodic Material for Zinc-Ion Batteries Based on Prussian Blue Derivatives** **B 9.30**
Ghoncheh Kasiri [1], Amir Bani Hashemi [1], Jens Glenneberg [2], Robert Kun [2], Fabio La Mantia [1]
[1] Universität Bremen, Energiespeicher- und Energiewandlersysteme, Bibliothekstr. 1, 28359 Bremen [2] Innovative Sensor and Functional Materials Research Group, c/o Fraunhofer IFAM, Wienerstraße 12, 28359 Bremen, Germany

18:00 **Synergistic Effect of Coating Mn3O4-polypyrrole Composite with Graphene to Bring Improvement in Supercapacitor Performance** **B 9.31**
Prasenjit Haldar , Amreesh Chandra
Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India

18:00 **Polyvinyl Alcohol-Sulfosuccinic Acid- Sulfonated Carbon Nanotube (PVA-SSA-SCNT) composite membranes for PEMFC** **B 9.32**
Vani R.1*, Ramaprabhu S. 2, Prathap Haridoss 3
1, 3 Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai, India 2 Alternate Energy & Nanotechnology Laboratory, Department of Physics, Indian Institute of Technology Madras, Chennai, India

18:00 **Enhanced Synthetic Route for Li-ion Conducting Cubic Li7La3Zr2O12 Solid Electrolyte** **B 9.33**
Dong Ok Shin*, Ju Mi Kim, Ju Young Kim, Young-Gi Lee
Multidisciplinary Sensor Research Group, Electronics and Telecommunication Research Institute (ETRI), Daejeon, 305-700, South Korea

18:00 **Analysis of effective cathode systems for a rechargeable aluminum ion battery** **B 9.34**
M. Coeler (a,b), U. Wunderwald (a,b), J. Friedrich (b)
(a) Fraunhofer THM, 09599 Freiberg, Germany (b) Fraunhofer IISB, 91058 Erlangen, Germany

18:00 **Synthesis and Characterization of S-C composite cathodes for Mg-S batteries** **B 9.35**
Joachim Häcker, Norbert Wagner, K. Andreas Friedrich
J. Häcker (German Aerospace Center (DLR), Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, 70569, Stuttgart, Germany), N. Wagner (German Aerospace Center (DLR), Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, 70569, Stuttgart, Germany), K.A. Friedrich (German Aerospace Center (DLR), Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, 70569, Stuttgart, Germany AND University of Stuttgart, Institute for Thermodynamic and Thermal Engineering, Pfaffenwaldring 6, 70569, Stuttgart, Germany)

18:00 **Exploring Nitrogen Doped Single Wall Carbon Nanohorns as conductive host for a full Tin/sulfur Lithium ion battery** **B 9.36**
(1 and 2) Umair Gulzar, (1 and 2) Tao Li, (2) Xue Bai, (2) Simone Monaco, (2 and 3) Remo Poretti Zacaria, (2 and 4) Claudio Capaglia
1 University of Genova, via Balbi 5, 16126, Italy 2 Istituto Italiano di Tecnologia, via Morego 30, 16163 Genova, Italy 3 Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, 219 Zhongguan West Road, Zhenhai District, Ningbo City, Zhejiang Province, 315201, China 4 Recruit R&D Co., Ltd., Recruit Ginza 8 Bldg. 8-4-17, Ginza Chuo-Ku, Tokyo, 104- 8001, Japan

18:00 **Efficient gas-phase synthesis of substrate-free graphene compared to the liquid-phase method** **B 9.37**
Adrian Münzer 1, Lisong Xiao 1, Christof Schulz 1,2, and Hartmut Wiggers 1,2
1 Institute for Combustion and Gas Dynamics – Reactive Fluids (IVG), University of Duisburg-Essen, 47057 Duisburg, Germany, 2 Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, 47057 Duisburg, Germany

18:00 **Composites of Gas-Phase Synthesized Graphene and Gas-Phase Synthesized Silicon Nanoparticles for Lithium-Ion Battery Anodes** — Ƀ 9.38
Adrian Münzer 1, Yee Hwa Sehlleier 1, Christof Schulz 1,2, and Hartmut Wiggers 1,2
1 Institute for Combustion and Gas Dynamics – Reactive Fluids (IVG), University of Duisburg-Essen, 47057 Duisburg, Germany, 2 Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, 47057 Duisburg, Germany

18:00 **A General Method for the Synthesis of Transition Metal Sulfides as Lithium Ion Battery Anodes** — Ƀ 9.39
Xi Chen Markus Niederberger
ETH Zurich

18:00 **AB-INITIO AND DFT STUDY OF THE ISOMERISATION KINETICS OF SUBSTITUTED ICOSADECA-ENE** — Ƀ 9.40
F. MECHACHTI1, A. DJEBAILI1*, Y. BOUZAHER1 , Y. AHMANE2, ILHEM. R. KRIBA3
1 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna-Algeria 2 Faculty of Sciences- Department of Chemistry - University of Biskra- Algeria 3 Faculty of Engineering Sciences- Department of Physics - University of Batna 2-05000- Algeria

18:00 **Computer simulation of the influence of conventional and unconventional geometries in the performance of lithium-ion batteries** — Ƀ 9.41
D. Miranda1, A. M. Almeida1, C. M. Costa1,2, S. Lanceros-Méndez1,4,5
1Centro de Física, Universidade do Minho, 4710-057 Braga, Portugal 2Centro/ Departamento de Química, Universidade do Minho, 4710-057 Braga, Portugal 4BCMaterials, Parque Cientifico y Tecnológico de Bizkaia, 48160 Derio, Spain 5IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain

18:00 **Synthesis and electrochemical properties of Transition Metal Phosphides as anode material for Lithium ion batteries** — Ƀ 9.42
Gumjae Park, Jongwook Bae , and Sang-MinLee
Korea Electrotechnology Research Institute

18:00 **Si thin film on graphene coated Ni foam as anode for Li-ion batteries** — Ƀ 9.43
Aliya Mukanova1, Arailym Nurpeissova2, Asem Zharbosyn3, Anara Molkenova2, Zhumabay Bakenov1 2
1. School of Engineering, Nazarbayev University, Astana 010000, Kazakhstan, 2. National Laboratory Astana, Nazarbayev University, Astana 010000, Kazakhstan, 3. L.N.Gumilyov Eurasian National University, Astana 010000, Kazakhstan

18:00 **A method for controlled oxide and carbon yolk-shell coating for silicon in Li-ion batteries** — Ƀ 9.44
Marte Orderud Skare (1,2), Trygve Mongstad (1), Jan Petter Mæhlen (1), Hanne Flåten Andersen (1), Samson Y. Lai (1), Ann Mari Svensson (2)
(1) Institute for Energy Technology, Instituttveien 18, 2007 Kjeller, Norway, (2) Department of Material Science and Engineering, Norwegian University of Science and Technology (NTNU), 7491 Trondheim, Norway

18:00 **Electrochemical property of carbon black coated Li3-xNaxV2(PO4)3** — Ƀ 9.45
Bongsoo Jin, Hyunsoo Kim
Korea Electrotechnology Research Institute

18:00 **Morphologically tailored Cu2O nanospheres fabricated by Ostwald ripeneing as high capacity Li-ion battery anodes** — Ƀ 9.46
Shilpa, P.Rai, A.Sharma
Indian Institute of Technology Kanpur, India

18:00 **Fabrication of graphitic carbon nanorods from ZIF-8 for the supercapacitor** — Ƀ 9.47
Yang Xueqing
Department of Physics and materials science, City University of Hong Kong, Hong Kong SAR, P. R. China

18:00 **Si-based aerogel materials for lithium-ion battery anodes** — Ƀ 9.48
G. Sandu(1), S. Xu(1), A. Vlad(2), and S. Melinte(1)
(1)Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium, (2) Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium.

18:00 **Progress on research regarding electrolyte additive for alkaline Zinc-air battery** — Ƀ 9.49
Dr. Camilla Evangeliti, Dr. Ludwig Jörissen
Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg

18:00 **Kraft Lignin as Electrode Material for Sustainable Electrochemical Energy Storage** — Ƀ 9.50
Saowaluk Chaleawlert-umpon, Thomas Berthold, Xuewan Wang, Markus Antonietti, Clemens Liedel
Max Planck Institute of Colloids and Interfaces, Department Colloid Chemistry, Am Mühlenberg 1, 14476 Potsdam, Germany

18:00 **Polymer-ionic liquid hybrid electrolytes based on a PVA/PAA blend and pyrrolidinium ionic liquid for Lithium ion batteries** — Ƀ 9.51
Savitha Thayumanasundaram*, Vijay shankar Rangasamy, Jean-Pierre Locquet
Department of Physics and Astronomy, Katholieke Univerisiteit Leuven, Celestijnenlaan 200D, B-3001, Leuven, Belgium

18:00 **Electroactive polymer/carbon nanotubes hybrid materials for energy storage synthesized via a "grafting to" approach** — Ƀ 9.52
Bruno Ernould,† Olivier Bertrand,† Alexandru Vlad‡ and Jean-François Gohy†
† Institute of Condensed Matter and Nanosciences (IMCN), Bio- and Soft Matter (BSMA), Université catholique de Louvain, Place L. Pasteur 1, B-1348, Louvain-la-Neuve, Belgium. ‡ Institute of Condensed Matter and Nanosciences (IMCN), Division of Molecules, Solids and Reactivity (MOST), Université catholique de Louvain, Place L. Pasteur 1/6, B-1348 Louvain-la-Neuve, Belgium.

18:00 **Lithium battery research in Romania: infrastructure and first year of results** — Ƀ 9.53
Mihaela BUGA, Mihai BALAN, Stanica ENACHE, Constantin BUBULINCA, Alin CHITU, Mihai VARLAM
National R&D Institute for Cryogenic and Isotopic Technologies ICSI Rm. Valcea

18:00 **Fabrication of LaCoO3–SSZ composite cathode by electrochemically assisted deposition for solid oxide fuel cells** — Ƀ 9.54
Seung-Bok Lee, Saeed Rehman, Jong-Won Lee, Tak-Hyoung Lim, Seok-Joo Park, Jong-Eun Hong, Rak-Hyun Song
Korea Institute of Energy Research

18:00 **Prussian Blue derived GeO2/C shell with catalyst (Fe2O3) core for High energy density Lithium-ion Battery anode** — Ƀ 9.55
Zhi Xiang Huang1,2, Hui Ying Yang2
1. Airbus Group Innovations Singapore, 2. Singapore University of Technology and Design

18:00 **Fe-Fe2O3 yolk-shell incorporated porous CNFs electrodes for ultra-high charge-discharge supercapacitors** — Ƀ 9.56
Hemesh Avireddy [a,b], Cristina Flox [a], PengYi Tang [a,c] Jordi Arbiol [c,d], Joan Ramon Morante [a, b]
[a] IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain. [b] Faculty of Physics, University of Barcelona, Barcelona, Spain. [c] Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain [d] ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Catalonia, Spain Corresponding author email - ahemesh@irec.cat Address – IREC, Jardins de les dones de Negre 1, 08930 Sant Adrià del Besos, Barcelona, Spain

18:00 **Acetonitrile-based electrolytes for LiFePO4/Li4Ti5O12 lithium-ion** — Ƀ 9.57
Y.R. Dougassa, D. Lepage, D. Rochefort
Université de Montréal, Département de Chimie,(Canada)

18:00 **Structural Characterization and Impedance Spectroscopy Analysis of a Novel Solid Solution : 6H-BaTiO3 Double Perovskite-Type.** — Ƀ 9.58
Fayçal Bourguiba, Jemai Dhahri
Laboratoire de la Matiere Condens/ee et des Nanosciences, D/epartement de Physique, Facult/e des Sciences de Monastir, Monastir, 5019, Tunisia

18:00 **Fracture-Resistant Sn micropillars as Anode for Lithium Ion Batteries** — Ƀ 9.59
Chung Su Hong, Nadeem Qaiser, Seung Min J. Han*
Chung Su Hong and Nadeem Qasier: Co- author Seung Min J. Han: Corresponding author

18:00 **Electrodeposited chrome-doped α-Fe2O3 thin film intended to be used in solar water splitting** — Ƀ 9.60
F. Bouhjar, B. Marí and B. Bessaïs
Keywords: thin film, hematite, chrome, XRD analysis, FESEM analysis, Optical properties,photoelectrochemical properties.

18:00 **Various doped (P, S and N) Nanoporous Carbons derived from Lignocellosic Biomass for Energy and sustainability** — Ƀ 9.61
Sul Ki Park and Ho Seok Park
SUNGKYUNKWAN University

18:00 **Simple fabrication of high energy and high power performance flexible hybrid supercapacitor using an intense pulsed white light** — Ƀ 9.62
Jeonguk Hwang, Changyong Park, Yoen-Taek Hwang, Hak-Sung Kim and Heejoon Ahn
Department of Organic and Nano Engineering, Hanyang University, Seoul 04763, South Korea, Department of Mechanical Engineering, Hanyang University, Seoul 04763, South Korea

18:00 **Deep eutectic solvent assisted one step synthesis of metal /metal oxide-carbon composite for energy storage applications** **Ƀ 9.63**
Gaurav M. Thorat, Harsharaj S. Jadhav, Jeong Gil Seo*
Department of Energy Science and Technology, Energy and Environment Fusion Technology Center, Myongji University, Nam-dong, Cheoin-gu, Yongin-si, Gyeonggi-do 449-728, Republic of Korea

18:00 **MoS2-Coated Three-Dimensional CuO Branched Nanowires for Efficient Photoelectrochemical Water Splitting** **Ƀ 9.64**
Juyoung Ham, Kwan Woo Lim, and Jong-Lam Lee
Department of Materials Science and Engineering, Pohang University of Science and Engineering Pohang, Gyungbuk, 790-784, Korea

18:00 **One-Pot Synthesis of Electro-Active Polymer Gels via Cu(0)-Mediated Radical Polymerization and Click Chemistry** **Ƀ 9.65**
F. Boujioui, O. Bertrand, A. Vlad and J.-F. Gohy
Université catholique de Louvain, Institute of Condensed Matter and Nanosciences, Bio & Soft Matter. Place L. Pasteur 1, 1348 Louvain-la-Neuve, Belgium

Wednesday 24 May 2017

Organic Battery Materials : Y. Yao

08:30 **Tunable polyimides: The future of organic Li/Na ion batteries** **Ƀ 10.1**
Dijo Damien, Harish Banda, Kalaivanan Nagarajan, Mahesh Hariharan and Manikoth M. Shaijumon
Indian Institute of Science Education and Research Thiruvananthapuram, CET Campus, Sreekaryam, Thiruvananthapuram, Kerala, 695016, India

08:45 **Vat Dyes as Low-Cost Organic Electrode Materials for Li/Na-Ion Batteries** **Ƀ 10.2**
Ji Eon Kwon, Soo Young Park
Center for Supramolecular Optoelectronic Materials, Department of Materials Science and Engineering, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826 Korea

09:00 **Design and electrochemical properties of organic host materials for rechargeable batteries** **Ƀ 10.3**
P. Poizot, E. Deunf, E. Quarez, P. Jiménez, D. Guyomard, F. Dolhem
P. Poizot, Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, Université de Nantes, Nantes, France & Institut Universitaire de France (IUF), Paris, France E. Deunf, E. Quarez, D. Guyomard, Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, Université de Nantes, Nantes, France P. Jiménez, Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, Université de Nantes, Nantes, France & Laboratoire de Glycochimie, des Antimicrobiens et des Agroressources (LG2A), UMR CNRS 7378, Université de Picardie Jules Verne, Amiens, France F. Dolhem, Laboratoire de Glycochimie, des Antimicrobiens et des Agroressources (LG2A), UMR CNRS 7378, Université de Picardie Jules Verne, Amiens, France & Réseau sur le Stockage Electrochimique de l?Energie (RS2E), FR CNRS 3459, France

09:30 **P AND N TYPE ORGANIC COMPOUNDS FOR SODIUM AND MAGNESIUM AQUEOUS ION-BATTERIES** **Ƀ 10.4**
Sofia Perticarari, Yann Pellegrin, Errol Blart, Dominique Guyomard, Michel Armand, Fabrice Odobel, Philippe Poizot and Joel Gaubicher
Sofia Perticarari, Dominique Guyomard, Philippe Poizot, Joel Gaubicher: Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssiniere, 44322 Nantes Cedex 3, France. Yann Pellegrin, Errol Blart, Fabrice Odobel: CEISAM, Chimie et Interdisciplinarité, Synthèse, Analyse, Modélisation, Université de Nantes, 2, rue de la Houssinière, 44322 Nantes Cedex 3, France. Michel Armand :CIC energigune, Alava Technology Park, Albert Einstein 48,01510 Miñano Álava, Spain.

09:45 **Guar gum and its derivatives as binders for lithium-ion battery electrodes** **Ƀ 10.5**
Diogo Vieira Carvalho, Nicholas Loeffler, Guk-Tae Kim, Arianna Moretti, Stefano Passerini*
Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89081 Ulm, Germany Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany

10:00 **Coffee Break**

Electrolyte Systems 3 : Polymer : P. Poizot

10:30 **Towards Better Single-Ion Block Copolymer Electrolytes** **Ƀ 11.1**
D. Devaux ?, L. Liénafa ?, E. Beaudoin ?, T. N. T. Phan ?, E. Giroud ?, T. V. Huynh °, M. Deschamps °, P. Davidson ?, Renaud Bouchet ?
? Universités Grenoble Alpes, CNRS, LEPMI 5279, 38000 Grenoble, France ?Aix-Marseille Université, CNRS, ICR 7273, 13397 Marseille, France ?Laboratoire de Physique des Solides, CNRS, Université Paris-Sud, Université Paris-Saclay, 91405 Orsay Cedex, France ° CEMHTI, CNRS UPR 3079, Universite d?Orleans, F-45071 Orleans, France?

11:00 **Solid Polymer Electrolytes based on Innovative Polycarbonates** **Ƀ 11.2**
Leire Meabe 1, Nerea Lago 1, Laurent Rubatat 2, Chunmei Li 3, Lide M. Rodríguez-Martinez 3, Haritz Sardon 1, Michel Armand 3, David Mecerreyes 1
1 POLYMAT, University of the Basque Country UPV/EHU, Joxe Mari Korta Centre, Avda. Tolosa 72, 20018 Donostia-San Sebastián, Spain 2 Université de Pau et des Pays de l'Adour, He´lioparc, IPREM Equipe de Physique et Chimie des Polyme`res, UMR 5254 CNRS, 2 Avenue du Pre´sident Angot, 64053 Pau, France 3 CIC Energigune, Alava Technology Park, Albert Einstein 4801510, MIÑANO Álava, Spain

11:15 **Degradation of polyethylene separator with PVdF-HFP coating after ageing in a Li-ion battery: impact on performances** **Ƀ 11.3**
X. Fleury, S. Geniès, P. X. Thivel
CEA/LITEN, F-38054 Grenoble, France and Univ. Grenoble Alpes, LEPMI, F-38000 Grenoble, France , CEA/LITEN, F-38054 Grenoble, France , Univ. Grenoble Alpes, LEPMI, F-38000 Grenoble, France

11:30 **Design of ion-exchange membranes for all-vanadium redox flow batteries (VRBs)** **B 11.4**
Olga Nibel, Thomas J. Schmidt, Lorenz Gubler
Electrochemistry Laboratory, Paul Scherrer Institut, 5232 Villigen, Switzerland, Electrochemistry Laboratory, Paul Scherrer Institut, 5232 Villigen, Switzerland + Laboratory of Physical Chemistry, ETH Zürich, 8093 Zürich, Switzerland, Electrochemistry Laboratory, Paul Scherrer Institut, 5232 Villigen, Switzerland

11:45 **Redox supercapacitors based on sulfonated PEEK and iodide species in the electrolyte** **B 11.5**
Francesco Lufrano, Alessandra Carbone, Irene Gatto, Antonino Brigandì, Pietro Staiti, CNR-ITAE, Istituto di Tecnologie Avanzate per l?Energia ?Nicola Giordano? Via salita S. Lucia sopra Contesse 5, 98126, Messina, Italy

12:00 **Lunch**

Nanomaterials Enabled Energy Storage : B. Dunn

13:45 **Novel Hybrid Flexible Supercapacitor Devices based on N-Doped Carbon Nanotubes and CoFe2O4 Nanoparticles** **B 12.1**
Clara Pereira,1,* Rui S. Costa,1,2 Laury Lopes,1 Cristina Freire,1 Belén Bachiller-Baeza,3 Inmaculada Rodríguez-Ramos,3 Antonio Guerrero-Ruiz,3 Pedro B. Tavares,4 André M. Pereira2
1 REQUIMTE/LAQV, Departamento de Química e Bioquímica, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal 2 IFIMUP and IN ? Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal 3 Instituto de Catálisis y Petroleoquímica, CSIC, C/Marie Curie 2, Cantoblanco, 28049 Madrid, Spain 4 Departamento de Química and CQ-VR, Universidade de Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal * clara.pereira@fc.up.pt

14:00 **Nanoparticle-Based Hybrid Electrode Materials: Structure Design and Lithium/Sodium Storage** **B 12.2**
Chao Wu,* Joachim Maier, and Yan Yu*
Max Planck Institute for Solid State Research, Heisenbergstr.1, Stuttgart 70569, Germany E-mail: C.Wu@fkf.mpg.de and Y.Yu@fkf.mpg.de

14:15 **An Air-Stable Densely Packed Phosphorene–Graphene Composite Toward Advanced Lithium Storage Properties** **B 12.3**
Yu Zhang , Huanwen Wang , Zhongzhen Luo , Hui Teng Tan , Bing Li , Shengnan Sun , Zhong Li , Yun Zong , Zhichuan J. Xu , Yanhui Yang , Khiam Aik Khor , and Qingyu Yan *
School of Materials Science and Engineering Nanyang Technological University 50 Nanyang Avenue , Singapore 639798 , Singapore

14:30 **ENERGY STORAGE APPLICATIONS OF TWO-DIMENSIONAL CARBIDES (MXenes)** **B 12.4**
Yury Gogotsi
Department of Materials Science and Engineering, and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA

15:00 **Simple and versatile fabrication of 3D micro-supercapacitors using pneumatic printing combined with intense pulsed white light** **B 12.5**
Chiho Song, Hak-Sung Kim and Heejoon Ahn
Department of Organic and Nano Engineering, Hanyang University, Seoul 04763, South Korea, Department of Mechanical Engineering, Hanyang University, Seoul 04763, South Korea

15:15 **Free-standing 2D Ti3C2Tx-V2O5 Films for Energy Storage Devices** **B 12.6**
Aniu Qian, Chan-Hwa Chung*
School of Chemical Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea

15:30 **Coffee Break**

16:15 **Plenary Session**

Hybrid and Pseudocapacitive Storage : Y. Gogotsi, Y. Yao

08:30 **2D Porous NiCoMnO4-Graphene Nanocomposites for High Performance Hybrid Energy Storage Device** **B 13.1**
Jaime Sanchez(a),Afshin Pendashteh(a), Jesus Palma(a), Marc Anderson(a,b), Rebeca Marcilla(a)
a Electrochemical Processes Unit, IMDEA Energy Institute, Avda. Ramon de la Sagra 3, Parque Tecnológico de Móstoles, 28935 Móstoles, Spain. b Department of Civil and Environmental Engineering, University of Wisconsin, Madison, USA * E-mail: afshin.pendashteh@imdea.org, rebeca.marcilla@imdea.org

08:45 **All GRAPHENE BASED LITHIUM ION CAPACITOR** **B 13.2**
Jon Ajuria, Maria Arnaiz, Cristina Botas, Daniel Carriazo, Roman Mysyk, Teofilo Rojo, Alexandr V. Talyzin, Eider Goikolea
Jon Ajuria, Maria Arnaiz, Cristina Botas, Daniel Carriazo, Roman Mysyk, Teofilo Rojo, Eider Goikolea: CIC Energigune, Albert Einstein 48, Alava Technology Park, 01510 Miñano, Vitoria-Gasteiz, Spain Teofilo Rojo, Inorganic Chemistry Department, University of the Basque Country UPV/EHU, P.O. Box 644, 48080, Bilbao, Spain. Alexandr V. Talyzin: Department of Physics, Umeå University, S-90187 Umeå, Sweden.

09:00 **Pseudocapacitive Energy Storage in Oxide Materials** **B 13.3**
Bruce Dunn
Materials Science & Engineering Department, UCLA

09:30 **Nano-engineered electrodes for ultra-high charge-discharge supercapacitors (>8 V/s)** **B 13.4**
Hemesh Avireddy [a,b], Cristina Flox [a], PengYi Tang [a,c] Jordi Arbiol [c,d], Joan Ramon Morante [a, b]
[a] IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain. [b] Faculty of Physics, University of Barcelona, Barcelona, Spain. [c] Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain [d] ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Catalonia, Spain Corresponding author email - ahemesh@irec.cat Address – IREC, Jardins de les dones de Negre 1, 08930 Sant Adrià del Besos, Barcelona, Spain

09:45 **Coffee Break**

Electrolyte Systems 4: Hybrid : R. Bouchet, A. Vlad

10:15 **Ion conducting coordination polymer crystals for energy devices working at intermediate temperature** **B 14.1**
Satoshi Horike
Kyoto University

10:45 **Ionic Properties of the Li(BH4)0.75I0.25 – 0.75Li2S·0.25P2S5 Mixed System for Near Room-Temperature All-Solid Li-Ion Batteries** **B 14.2**
A. El-Kharbachi (a), Y. Hu (b), K. Yoshida (c), MH. Sørby (a), H. Fjellvåg (b), S. Orimo (c,d), BC. Hauback (a)
(a) Institute for Energy Technology, P.O. Box 40, NO-2027 Kjeller, Norway , (b) Centre for Materials Science and Nanotechnology, University of Oslo, Blindern, Norway , (c) Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan , (d) WPI-Advanced Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan.

11:00 **Intermediate Temperature Proton Conductivity in Nanocrystalline Ceramics** **B 14.3**
Gary Ong, Evan Runnerstrom, Delia J. Milliron
University of California, Berkeley, University of Texas, Austin

11:15 **Complex hydrides for near-room temperature all-solid-state Na-ion batteries** **B 14.4**
Matteo Brighi [1], Pedro López-Aranguren [2], Fabrizio Murgia [1] and Radovan Černý [1]
[1] DQMP - Université de Genève, 24 quai Ernest Ansermet, 1211 Geneva, Switzerland
[2] Saft, 111 boulevard Alfred Daney, 33074 Bordeaux Cedex, France

11:30 **The impact of interfaces on oxide ion diffusion in doped ceria** **B 14.6**
Aoife K. Lucid, Graeme W. Watson
School of Chemistry and CRANN, Trinity College Dublin, College Green, Dublin 2, Ireland

11:45 **Novel complex hydrides as stable, room temperature solid-state electrolytes** **B 14.7**
Arndt Remhof (1), Yigang Yan (1), Ruben-Simon Kühnel (1), Léo Duchêne (1), Elsa Roedern (1), Daniel Rentsch (1), Zbigniew Łodziana (2), Hans Hagemann(3), Corsin Battaglia (1)
(1) Empa, Swiss Federal Laboratories for Materials Science and Technology, CH-8600 Dübendorf, Switzerland, (2) Institute of Nuclear Physics, Polish Academy of Sciences, Pl-31-342 Kraków, Poland, (3) Département de Chimie-Physique, Université de Genève, CH-1211 Geneva 4, Switzerland

12:00 **Lunch**

Li-Ion Positive Electrodes and Devices : B. Dunn

13:45 **Job-sharing Storage in Composite Materials** **B 15.1**
Chia-Chin Chen, Lijun Fu, Joachim Maier
Max Planck Institute for Solid State Research, Stuttgart, Germany

14:00 **Structural changes and microstrain in LixNi0.8Co0.15Al0.05O2 (0 ≤ x ≤ 2) electrode under overcharge and overdischarge** **B 15.2**
Rosa Robert, Petr Novák
Paul Scherrer Institut, Electrochemistry Laboratory CH-5232 Villigen PSI, Switzerland

14:15 **Synergy of AFM and SIMS for advanced characterization of Li-ion battery cathodes** **B 15.3**
Jonathan Op de Beeck(a b), Umberto Celano(a), Nouha Labyedh(a d), Alfonso S. Marquez(a), Valentina Spampinato(a), Alexis Franquet(a), Philippe Vereecken(a d), Paul M. Koenraad(b), Wilfried Vandervorst(a c)
a) IMEC, Kapeldreef 75, 3001 Leuven, Belgium, b) Department of Applied Physics, Eindhoven University of Technology, Eindhoven 5612 AZ, The Netherlands, c) KU Leuven, Department of Physics and Astronomy, Celestijnenlaan 200D, B-3001 Leuven, Belgium, d) KU Leuven, Department of Microbial and Molecular Systems , Celestijnenlaan 200D, B-3001 Leuven, Belgium

14:30 **IMPROVEMENT OF LI-S BATTERIES** **B 15.4**
Mathieu Morcrette, Rezan Demir-Cakan, Alice Cassel, Benoit Fleutot, Virginie Viallet a Laboratoire de Réactivité et Chimie des Solides, Université de Picardie Jules Verne, CNRS UMR 7314, 33 rue Saint Leu 80039 Amiens, France. b Réseau sur le Stockage Electrochimique de l&#8217,Energie (RS2E), FR CNRS 3459, France c Gebze Institute of Technology, Department of Chemical Engineering, 41400 Gebze/Turkey

15:00 **Improvement of Nickel-Rich Lithium Transition-Metal Oxide by Surface Modifications** **B 15.5**
You-Hwan Son, Jun-Ho Park, Byong Yong Yu, Kwangjin Park, Suk-Gi Hong, Jae Ha Shim, Byong Jin Choi, Jin-Hwan Park
Energy Lab, Samsung Advanced Institute of Technology, 130 Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea, Automotive & ESS Business, Development Team, Samsung SDI, 130 Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea

15:15 **Increasing the energy of prototype Li-ion batteries through utilization of Ni-rich NMC cathodes and Si-alloy based anodes** **B 15.6**
Mario Marinaro 1, Yoon Dong-hwan 1, Giulio Gabrielli 1, Petra Stegmaier 2, Paul C. Spurk 3, Daniël Nelis 3, Gregory Schmidt 4, Jerome Chauveau 4, Peter Axmann 1, Margret Wohlfahrt-Mehrens 1
1 ZSW, 2 3M, 3 Umicore, 4 ARKEMA

Interfaces and Reactivity : S. Horike & A. Vlad

16:00 **Antisite Disorder and Bond Valence Compensation in Li2FePO4F Cathode for Li-Ion Batteries** **B 16.1**
Olesia M. Karakulina 1, Nellie R. Khasanova 2, Oleg A. Drozhzhin 2,3, Alexander A. Tsirlin 4,5, Joke Hadermann 1, Evgeny V. Antipov 2, Artem M. Abakumov 3,1
1 EMAT, University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium, 2 Department of Chemistry, Lomonosov Moscow State University, 119991 Moscow, Russia, 3 Skoltech Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Nobel str. 3, 143026 Moscow, Russia, 4 Experimental Physics VI, Center for Electronic Correlations and Magnetism, University of Augsburg, 86159 Augsburg, Germany, 5 National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, 12618 Tallinn, Estonia,

16:15 **First-Principles Calculations on Structure and Interfacial Reactivity of Amorphous LiPON** **B 16.2**
Sabrina Sicolo, Karsten Albe
Technische Universität Darmstadt

16:30 **The formation of LiF film in LP57 electrolyte on metal single crystals** **B 16.3**
Ivano E. Castelli, Thomas Østergaard, Konstantinos Antonopoulos, Filippo Maglia, Jan Rossmeisl
Department of Chemistry, University of Copenhagen, Department of Chemistry, University of Copenhagen, BMW Group, BMW Group, Department of Chemistry, University of Copenhagen

16:45 **Studying reaction interface of half discharged LiFePO4/FePO4 nanoparticles by TEM automated crystal orientation mapping** **B 16.4**
X. Mu1,2, A. Kobler1, D. Wang1,3, V.S.K. Chakravadhanula1,2, S. Schlabach3,4, D.V. Szabó3,4, P. Norby5, C. Kübel1,2,3
1. Institute of Nanotechnology, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany 2. Helmholtz-Institute Ulm for Electrochemical Energy Storage (HIU), Karlsruhe Institute of Technology (KIT), 89081 Ulm, Germany 3. Karlsruhe Nano Micro Facility (KNMF), Karlsruhe Institute of Technology (KIT), 76344 Eggenstein-Leopoldshafen, Germany 4. Institute for Applied Materials, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany 5. Danmarks Tekniske Universitet (DTU), 4000 Roskilde, Denmark

17:00 **Bornite Cu5FeS4 : a natural material for positive electrode** **B 16.5**
C. Mir [1][2], X. Vendrell [1][2], D. Giaume [1][2], J.M. Tarascon [2][3], P. Barboux [1][2]
[1] Chimie ParisTech, PSL Research University, Institut de Recherche de Chimie Paris (IRCP), F-75005 Paris, France, [2] Réseau sur le Stockage Electrochimique de l'Energie (RS2E), FR CNRS 3459, France, [3] FRE 3677 « Chimie du Solide et Energie », Collège de France 11 Place Marcelin Berthelot, F-75005 Paris, France

17:15 **Interface Stability of Argyrodite Li6PS5Cl in Bulk "All-solid-state" batteries** **B 16.6**
Jérémie Auvergniot a,b, Alice Cassel b, Dominique Foix a,c, Virginie Viallet b,c, Vincent Seznec b,c, Rémi Dedryvère a,c
a – IPREM, CNRS – Université de Pau et des Pays de l'Adour Hélioparc, 2 Avenue Pierre Angot, 64053 Pau Cedex 9 b – LRCS, CNRS – Université de Picardie Jules Verne, 33 Rue Saint Leu, 80039 Amiens Cedex c – Réseau sur le Stockage Electrochimique de l'Energie (RS2E) FR CNRS 3459

17:30 **Discovering a First-Order Phase Transition in the Li-CeO2 System** **B 16.7**
Kaikai Li, Xiaoye Zhou, Anmin Nie, Sheng Sun, Yan-Bing He, Wei Ren, Baohua Li, Feiyu Kang, Jang-Kyo Kim, Tong-Yi Zhang
Kaikai Li, Department of Mechanical and Aerospace Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China Xiaoye Zhou, Department of Mechanical and Aerospace Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China Anmin Nie, Shanghai University Materials Genome Institute and Shanghai Materials Genome Institute, Shanghai University, 99 Shangda Road, Shanghai 200444, China Sheng Sun, Shanghai University Materials Genome Institute and Shanghai Materials Genome Institute, Shanghai University, 99 Shangda Road, Shanghai 200444, China Yan-Bing He, National Local Joint Engineering Laboratory of Carbon Functional Materials, Graduate School at Shenzhen, Tsinghua University, Shenzhen 518055, China Wei Ren, Shanghai University Materials Genome Institute and Shanghai Materials Genome Institute, Shanghai University, 99 Shangda Road, Shanghai 200444, China Baohua Li, National Local Joint Engineering Laboratory of Carbon Functional Materials, Graduate School at Shenzhen, Tsinghua University, Shenzhen 518055, China Feiyu Kang, National Local Joint Engineering Laboratory of Carbon Functional Materials, Graduate School at Shenzhen, Tsinghua University, Shenzhen 518055, China Jang-Kyo Kim, Department of Mechanical and Aerospace Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China Tong-Yi Zhang, Shanghai University Materials Genome Institute and Shanghai Materials Genome Institute, Shanghai University, 99 Shangda Road, Shanghai 200444, China

POSTER SESSION 2 : A. Vlad

18:00 **Redox polymer mediated discharge of Li-ion cathodes** **B 17.1**
G. Dolphijn, S. Isikli, F. Gauthy, A. Vlad, J.-F. Gohy
Université Catholique de Louvain, Solvay , Solvay , Université Catholique de Louvain, Université Catholique de Louvain

18:00 **Capacity-increasing robust porous SiO2/Si/graphene/C microspheres as an anode for Li-ion batteries** **B 17.2**
Jiande Wang12, Xiaohua Chen2,* Xuelian Liu2, Aiping Hu2, Qunli Tang2, Zheng Liu2, Binbin Fan2, Huaiyuan Chen2 and Yuxi Chen2
1.Institute of Condensed Matter and Nanosciences (IMCN), Bio- and Soft Matter (BSMA), Universite catholique de Louvain, Place L. Pasteur 1, B-1348, Louvain-la-Neuve, Belgium. 2.College of Materials Science and Engineering, Hunan University, Hunan Province Key Laboratory for Spray Deposition Technology and Application, Changsha 410082, China.

18:00 **Low-cost, high-performance flexible supercapacitors based on Mn oxide paper electrode in novel quasi-ionic liquid electrolyte** **B 17.3**
Ming-Jay Deng, Kai-Wen Chen, I-Ju Wang, Kueih-Tzu Lu, Yen-Fa Liao, Hirofumi Ishii, Jin-Ming Chen
National Synchrotron Radiation Research Center, Hsinchu 30076, Taiwan

18:00 **Electrode Materials for Calcium Based Batteries** **B 17.4**
D. S. Tchitchekova (1), A. Ponrouch (1), C. Frontera (1), F. Bardé (2), M. E. Arroyo-de Dompablo (3), R. Palacín (1)
(1) Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) Campus UAB, E-08193 Bellaterra, Catalonia, (Spain), (2) Toyota Motor Europe, Research & Development 3, Advanced Technology 1, Technical Centre, Hoge Wei 33 B, B-1930 Zaventem, (Belgium), (3) Malta Consolider Team, Departamento de Química Inorgánica, Universidad Complutense de Madrid, 28040 Madrid, (Spain)

18:00 **Printed electronics integrated with flexible supercapacitors: new methodologies for low-cost energy storage** **B 17.5**
Yang Wang, Yi-Zhou Zhang, Gareth Jenkins, Wen-Yong Lai, Huan Pang, Wei Huang, Johan E. ten Elshof
Inorganic Materials Science Group, MESA+ Institute for Nanotechnology, University of Twente, 7500 AE Enschede, The Netherlands Yang Wang, Johan E. ten Elshof Institute of Advanced Materials (IAM), Nanjing University of Posts & Telecommunications, 9 Wenyuan Road, Nanjing 210023, China Yi-Zhou Zhang, Gareth Jenkins, Wen-Yong Lai, Huan Pang, Wei Huang

18:00 **Mechanochemical synthesis of conducting polymer aerogel electrodes for electrochemical capacitors** **B 17.6**
Luhua Cheng 1,2, Xiaosong Du 2, Yadong Jiang 2 and Alexandru Vlad 1,*
1 - Institute of Condensed Matter and Nanosciences, Molecules, Solids and Reactivity, Universite catholique de Louvain, Place Louis Pasteur 1, 1348 Louvain-la-Neuve, Belgium, 2 - State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054, P. R. China.

18:00 **Optical fingerprints of solid-liquid interfaces: a joint ATR-IR and first principles investigation** **B 17.7**
Lei Yang, Fang Niu, Stefanie Tecklenburg, Marc Pander, Simantini Nayak, Andreas Erbe, Stefan Wippermann, Francois Gygi, Giulia Galli
Max-Planck-Institut für Eisenforschung GmbH

18:00 **Optimization of nanoporous water oxidation electrodes based on a novel atomic layer deposition of iridium** **B 17.8**
Stefanie Schlicht [a], Sandra Haschke [a], Vladimir Mikhailovskii [b], Alina Manshina [b], Julien Bachmann [a]
[a] Departement of Chemistry and Pharmacy, Friedrich-Alexander University Erlangen-Nürnberg, Egerlandstrasse 1, D-91058 Erlangen [b] Saint-Petersburg State University, Interdisciplinary Resource Center for Nanotechnology, Uljanovskaya 1, 198504 St. Petersburg, Russia

18:00 **Synthesis of the bis-quaternary ammonium levelers with different alkyl chains and their structure-property relationships on Cu e** **B 17.9**
< u>Yoonjae Lee< /u>, Jung Hwan Oh, Myung Hyun Lee, Youngran Seo, Myung Jun Kim, Hoe Chul Kim, Jae Jeong Kim, Young Gyu Kim*
School of Chemical and Biological Engineering, College of Engineering, Seoul National University, Seoul, 08826, Korea E-mail: ygkim@snu.ac.kr

18:00 **Identity of a nanoporous iron oxide electrode surface with water oxidation activity improved thousand-fold** **B 17.10**
Sandra Haschke (1), Dimitrii Pankin (2), Yuri Petrov (3), Alina Manshina (4), Julien Bachmann (1)
(1) Department of Chemistry and Pharmacy, Friedrich Alexander University of Erlangen-Nürnberg, Germany, (2) Center for Optical and Laser Materials Research, Saint-Petersburg State University, Russia, (3) Interdisciplinary Resource Center for Nanotechnology, Saint-Petersburg State University, Russia, (4) Institute of Chemistry, Saint-Petersburg State University, Russia,

18:00 **Investigation of perovskite-based anodes for solid oxide electrolysis cells** **B 17.11**
Ailbhe L. Gavin, Graeme W. Watson
School of Chemistry and CRANN, Trinity College Dublin, Dublin 2, Ireland

18:00 **Self-charging lithium-ion battery using thin-film silicon solar cell** **B 17.12**
T. Merdzhanova 1, S. N. Agbo 1, O. Astakhov 1, S. Yu 2, H. Tempel 2, H. Kungl 2, R.-A. Eichel 2, U. Rau 1
1) IEK 5-Photovoltaics, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany
2) IEK 9-Fundamental Electrochemistry, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany

18:00 **Ferroelectric nanocrystal mediated micro pseudo-electrochemical cells with ultrasound enhancement for polymerization** **B 17.13**
Lili Zhao, Fulei Wang, Zhiyuan Yang, Xiaoning Wang, Daidong Guo, Baojin Ma, Hong Liu,* Yuanhua Sang,*
State Key Laboratory of Crystal Materials, Shandong University, Jinan, Shandong 250100, China

18:00 **An Advanced Asymmetric Supercapacitor Device with Polypyrrole Wrapped CoV2O6 as positive and GNPs as negative electrode** **B 17.14**
Anirban Maitra and B. B. Khatua
Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India.

18:00 **Hollow Nanostructures of Metal Oxides ? Possible Candidates For Next Generation Supercapacitors** **B 17.15**
Vikas Sharma, Amreesh Chandra
School of Nanoscience and Technology, Department of Physics, Indian Institute of Technology, Kharagpur, West Bengal, India

18:00 **Self-supported Nickel-Cobalt-Nitride nanomaterials on different substrate for high performance and Flexible Supercapacitors** **B 17.16**
Hua Tan, Zhihe Liu, Xiaoning Wang, Yuanhua Sang, Hong Liu*
Shandong University, Jinan, China

18:00 **Modelling of the Electrochemical Impedance of Oxygen Ion Conductors** **B 17.17**
Dries Van Laethem, Lucia Fernandez Macia, Johan Deconinck, Annick Hubin
SURF Research Group, Department of Materials and Chemistry, Vrije Universiteit Brussel

18:00 **High-capacity, long-life Si/TiSi2/C nanocomposites as anodes for Li-ion batteries** **B 17.18**
Fermín Cuevas, Tahar Azib, Michel Latroche
CNRS/UPEC, ICMPE, UMR7182, Thiais, France

18:00 **Environmentally friendlier strategies for the preparation of lithium-ion battery separators based on poly(vinylidene fluoride)** **B 17.19**
C. M. Costa1,2,*, H. M. Rodrigues1, A. Gören1,2, A. V. Machado3, M. M. Silva2, S. Lanceros-Méndez4,5
1Centro de Física, Universidade do Minho, 4710-057 Braga, Portugal 2Centro/Departamento de Química, Universidade do Minho, 4710-057 Braga, Portugal 3IPC ? Institute for Polymers and Composites, Universidade do Minho, Campus de Azurém, 4800-058 Guimarães, Portugal 4BCMaterials, Parque Cientifico y Tecnológico de Bizkaia, 48160-Derio, Spain 5IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain

18:00 **Nanoengineering carbon cathodes for Lithium Sulphur batteries** **B 17.20**
Jordi Jacas Biendicho1*, Cristina Flox1, Avireddy Hemesh1 and Joan Ramon Morante1,2
1Catalonia Institute for Energy Research, Jardins de les Dones de Negre, 1, 08930 Sant Adrià del Besos (Spain) 2Departament d?Electronica, Universitat de Barcelona, C. de Martí I Franquès, 1, 08028 Barcelona (Spain)

18:00 **Comparisons of multifunctional Metal Phosphides Catalysts for Fuel Cell** **B 17.21**
Jun Wu, Anthony Kucernak, Parra Puerto Andres
Imperial College London, Department of Chemistry

18:00 **Combining the advantages of both liquid and solid electrolytes with magneto-rheology** **B 17.22**
Jie Ding, Gangrou Peng, Weihua Li
Land Division, Defence Science and Technology Group, 506 Lorimer Street, Fishermans Bend, VIC 3207, Australia Schools of Mechanical, Material and Mechatronic Engineering, University of Wollongong, Wollongong, NSW 2522, Australia

18:00 **Light-Sensitive Solid State Supercapacitor: Direct Utilization of Illumination Signal for Storage** **B 17.23**
Buddha Deka Boruah and Abha Misra
Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, Karnataka, India 560012

18:00 **rGo-SnO2 Efficient Electrode Material for CDI Desalination.** **B 17.24**
Syed Kamran Sami , Jung Yong Seo, Kim Tae-il and Chan-Hwa Chung*
School of Chemical Engineering , Sungkyunkwan University Suwon, Republic of Korea.

18:00 **Carbon dots as liquid and gel-type electrolytes for high-performance electrochromic devices** **B 17.25**
Hong Chul Lim(a), Kwang-Myeong Kim(a), Jaegyu Jang(a), Eunji Park(b), Ik-Soo Shin*(b), Jong-In Hong*(a)
a) Department of Chemistry, Seoul National University, Seoul 151-747, Republic of Korea b) Department of Chemistry, Soongsil University, Seoul 156-743, Republic of Korea

18:00 **3C-SiC thin film as negative electrode for Li-ion batteries** **B 17.26**
Aliya Mukanova1, Gerard Colston3, Dauren Batyrbekuly2, Anara Molkenova2, Arailym Nurpeissova2, Maksym Myronov3, Zhumabay Bakenov1,2
1. School of Engineering, Nazarbayev University, Astana 010000, Kazakhstan, 2. National Laboratory Astana, Nazarbayev University, Astana 010000, Kazakhstan, 3. Physics Department, University of Warwick, Coventry CV4 7AL, United Kingdom.

18:00 **Relations Between A Free Space Silane Reactor, Size Distribution, and Electrochemical Performance of Silicon Nanoparticles** **B 17.27**
Samson Y. Lai, Thomas J. Preston, Hallgeir Klette, Hanne F. Andersen, Marte O. Skare, Jan Petter Maehlen, Kenneth D. Knudsen, Trygve T. Mongstad
Physics Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway, Solar Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway, Solar Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway, Energy Systems Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway, Solar Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway, Department of Material Science and Engineering, Norwegian University of Science and Technology, Trondheim NO-7491, Norway, Energy Systems Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway, Physics Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway, Solar Department, Institute for Energy Technology, Instituttveien 18, Kjeller NO-2007, Norway

18:00 **Waste heat energy recovery and waste elimination process using thermal decomposition by arc plasma** **B 17.28**
Mohammadreza Heydariazad, Omid Ghamiloo, Reza Khatibinasab, Mohammadreza Heydariazad a masters student Omid Ghamiloo a masters student

18:00 **Kinked silicon nanowires-based electrode configuration for lithium-ion batteries** **B 17.29**
G. Sandu(1), M. Coulombier(2), V. Kumar(3), H. Kassa(4), I. Avram(1), R. Ye(1), A. Stopin(5), D. Bonifazi(5), J.-F. Gohy(3), P. Leclère(4), X. Gonze(3), T. Pardoen(2), A. Vlad(3) and S. Melinte(1)
(1)Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium, (2) Institute of Mechanics, Materials, and Civil Engineering, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium, (3)Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium, (4)Laboratory for Chemistry of Novel Materials, Center for Innovation and Research in Materials and Polymers, University of Mons, 7000 Mons, Belgium, (5)School of Chemistry, Cardiff University, CF10 3AT Cardiff, United Kingdom.

18:00 **Facilitated charge transport in PANI/?-Ni(OH)2/Fe-Oxide doped RGO hybrid electrode for high-performance Supercapacitor** **B 17.30**
Amit Kumar Das, Dr. Bhanu Bhusan Khatua
Materials Science Centre, IIT Kharagpur, Kharagpur-721302, India

18:00 **Morphology vs. performance ? LiFePO4/C nanoparticle composites for the use as cathode material in lithium-ion batteries** **B 17.31**
Julia Ziegler, Michael Fröba
Institute of Inorganic and Applied Chemistry, University of Hamburg, Martin-Luther-King-Platz 6, 20146 Hamburg, Germany

18:00 **Preparation of thin layers of Li7-xLa3Zr2-xMxO12 solid electrolyte (M = Nb, Ta)** **B 17.32**
E.A. Dobretsov, Yu.G. Mateyshina, N.F. Uvarov
Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia

18:00 **Jeffamine®-based polymer electrolytes for battery application** **B 17.33**
Itziar Aldalur1*, Michal Piszcz2, Heng Zhang1, Lide M. Rodriguez-Martinez1, Teofilo Rojo1, Michel Armand1
1CIC Energigune. Parque Tecnológico de Álava, Albert Einstein, 48, ED.CIC, 01510 Miñano, Álava, (Spain). 2University of Technology, Faculty of Chemistry, Polymer Ionics Research Group, Noakowskiego 3, PL-00664 Warszawa, Poland

18:00 **Graphene-modified graphite felts as effective electrodes for vanadium redox flow batteries** **B 17.34**
Zoraida González, Cristina Flox, Clara Blanco, Marcos Granda, Juan R. Morante, Rosa Menéndez, Ricardo Santamaría
Instituto Nacional del Carbón, INCAR-CSIC, P.O Box. 73, 33080- Oviedo, Spain: Zoraida González, Clara Blanco,Marcos Granda,Rosa Menéndez,Ricardo Santamaría Catalonia Institute for Energy Research, IREC, Jardins de les Dones de Negre 1, 08930 Sant Adriá de Besós, Barcelona, Spain: Cristina Flox, Juan R. Morante

18:00 **Atomic Layer Deposition and Characterization of Titanium- and Cobalt-based Films for Lithium-Ion Batteries** **B 17.35**
Christoph Hossbach1, Volker Neumann1, Keerthi D.S. Reddy1, Sascha Boenhardt2, Andrea Stoeck3, Dustin Fischer1, Johanna Reif1, Sashank Shukla1, Sabine Zybell2, Matthias Albert1, Lars Giebeler3, Johann W. Bartha1
1 TU Dresden, Institute of Semiconductors and Microsystems, 01187 Dresden, Germany 2 Fraunhofer Institute for Photonic Microsystems - Center Nanoelectronic Technologies (IPMS-CNT) Koenigsbruecker Str. 178, 01099 Dresden, Germany 3 Leibnitz Institute for Solid State and Material Research Dresden, Helmholtzstraße 20, 01069 Dresden

18:00 **A Highly Safe, Flexible and Rechargeable Solid-State Zinc-ion Battery with High Performance** **B 17.36**
Hongfei Li, Baohua Li,Chunyi Zhi
Hongfei Li and Dr. Chunyi ZHI: Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong 999077, China, Prof.Baohua Li: Engineering Laboratory for Next Generation Power and Energy Storage Batteries, Engineering Laboratory for Functionalized Carbon Materials, Graduate School at Shenzhen, Tsinghua University, Shenzhen 518055, China

18:00 **Task-Specific Imidazolium Ionics - Synthesis and Application in Electrolytes** **B 17.37**
Steffen Tröger-Müller, Jessica Brandt, Markus Antonietti, Clemens Liedel
Max Planck Institute of Colloids and Interfaces, Department Colloid Chemistry, Am Mühlenberg 1, 14476 Potsdam, Germany

18:00 **Study of the interface between imidazolium-based ionic liquids electrolytes and lithium metal electrode** **B 17.38**
Jorge Morales ??§, Anass Benayad ??, Catherine Santini *, Renaud Bouchet § ?Université Grenoble Alpes, 38400 Saint-Martin-d'Hères, France, ? CEA, LITEN, Department of Nanomaterials, MINATEC, 17 rue des Martyrs, 38054 Grenoble Cedex 09, France, *CNRS-UMR 5265, 43 Bd du 11 Novembre 1918, 69616 Villeurbanne Cedex, France, § LEPMI-INP Grenoble UMR 5279, 1130 rue de La Piscine, 38402 St. Martin d?Hères, France

18:00 **Cathode, Anode, Binder and Separator Imaged at Very Low Accelerating Voltages** **B 17.39**
Stefanie Freitag, Dr. Christina Berger, Jeff Gelb, (1) Christian Weisenberger, Dr. Timo Bernthaler (2)
(1) Carl Zeiss Microscopy GmbH, Germany (2) Materials Research Institute, Aalen University, Germany

18:00 **Large-area, all-solid and flexible electric double layer capacitors based on CNT fiber electrodes and polymer electrolytes** **B 17.40**
Evgeny Senokos, Víctor Reguero, Laura Cabana, Jesus Palma, Rebeca Marcilla, Juan Jose Vilatela
IMDEA Materials Institute, C/ Eric Kandel, 2, Getafe, 28906 Madrid, Spain, IMDEA Energy Institute Avda. Ramón de la Sagra 3, Móstoles, 28935 Madrid, Spain

18:00 **Examination of the Degradation of Graphite/Carbon Black Composite Electrodes in Li-ion Batteries by Lock-in Thermography** **B 17.41**
Peter Michalowski (a), Alexander Gräfenstein (b), Martin Knipper (a), Thorsten Plaggenborg (a), Julian Schwenzel (b), and Jürgen Parisi (a)
a Energy and Semiconductor Research Laboratory, Institute of Physics, Carl-von-Ossietzky Universität, Carl-von-Ossietzky-Str. 9-11, 26129 Oldenburg, Germany, b Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Wiener Straße 12, D-28359 Bremen, Germany

18:00 **Model-Based Development of Advanced Aqueous Electrolytes for Zinc-Air Batteries** **B 17.42**
Simon Clark, Birger Horstmann, Arnulf Latz
German Aerospace Center (DLR), Institute of Engineering Thermodynamics, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany. Helmholtz Institute Ulm (HIU), Electrochemical Energy Storage, Helmholtzstr. 11, 89081 Ulm, Germany.

18:00 **SYNTHESIS AND CHARACTERISTICS OF CuCo2S4 BALL-IN-BALL HOLLOW NANOSTRUCTURES AS HIGH PERFORMANCE ELECTRODE FOR SUPERCAPACITORS** **B 17.43**
Young Hun Lee, Bong Kyun Kang and Dae Ho Yoon
School of Advanced Materials Science & Engineering, Sungkyunkwan University (SKKU), 2066 Seobu-ro, Jangan-gu, Suwon, Gyeonggi-do 440-746, Korea, SKKU Advanced Institute of Nanotechnology(SAINT), Sungkyunkwan University, 2066 Seobu-ro, Jangan-gu, Suwon, Gyeonggi-do 440-746, Korea

18:00 **Upscalable and flexible PEDOT:cellulose based supercapacitors** **B 17.44**
Andrea Grimoldi, Anurak Sawatdee, Dagmawi Belaineh Yilma, Sapiens Malti, Xavier Crispin, David Nilsson, Isak Engqvist, Magnus Berggren
Dept. of Science and Technology, Linköping University (LiU): Andrea Grimoldi, Dagmawi Belaineh Yilma, Xavier Crispin, Isak Engqvist, Magnus Berggren Acreo AB, Research Institutes of Sweden (RISE): Anurak Sawatdee, David Nilsson Kungliga Tekniska Högskolan (KTH): Sapiens Malti

18:00 **On the electrochemistry of some redox active coordination compounds: from fundamentals towards high voltage cells** **B 17.45**
Bruno Ernould,† Jean-François Gohy† and Alexandru Vlad‡
† Institute of Condensed Matter and Nanosciences (IMCN), Bio- and Soft Matter (BSMA), Université catholique de Louvain, Place L. Pasteur 1, B-1348, Louvain-la-Neuve, Belgium. ‡ Institute of Condensed Matter and Nanosciences (IMCN), Division of Molecules, Solids and Reactivity (MOST), Université catholique de Louvain, Place L. Pasteur 1/6, B-1348 Louvain-la-Neuve, Belgium.

18:00 **Carbon-molybdenum Disulfide (carbon/MoS2) Composite as Anode Material Candidate for Lithium Ion Batteries** **B 17.46**
Joong-Hee Han, Jürgen Kahr, Raad Hamid, Hyungil Jang, Do-Young Ahn, Sung-Hwan Han, Atanaska Trifonova
Electric Drive Technologies, Mobility, AIT Austrian Institute of Technology, Vienna, Austria (J. H. Han, J. Kahr, R. Hamid, A. Trifonova) Department of Chemistry, Hanyang University, Seoul, Republic of Korea (Sunghwan Han, Do-Young, Ahn, Hyungil Jang)

18:00 **Novel Thin-Film Solid-Composite Electrolyte for 3D Lithium-Ion Microbatteries by Combining Molecular and Atomic Layer Deposition** **B 17.47**
Knut Bjarne Gandrud 1 2, Simon Hollevoet 1 2, Kevin Van de Kerckhove 3, Brecht Put 1 4, Maarten Mees 1, M. Creatore 4, W.M.M. Kessels 4, Christophe Detavernier 3, Philippe Vereecken 1 2
1 imec, Kapeldreef 75, B-3001 Leuven, Belgium, 2 KU Leuven - University of Leuven, Centre for Surface Chemistry and Catalysis, Celestijnenlaan 200F, B-3001 Leuven, Belgium, 3 Department of Solid State Sciences, Ghent University, Krijgslaan 281 S1, 9000 Gent, Belgium, 4 Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands

18:00 **A transparent electrolyte based on a solid-state ion gel for supercapacitor device applications** **B 17.48**
Elena Navarrete-Astorga (1), Jorge Rodríguez-Moreno (1), Daniel Solís-Cortés (1), Dietmar Leinen (1), Enrique A. Dalchiele (2), José R. Ramos-Barrado (1), Francisco Martin (1).
(1) Laboratorio de Materiales y Superficies (Unidad Asociada al CSIC). Departamentos de Física Aplicada & Ing. Química. Universidad de Málaga, Málaga, Spain. (2) Instituto de Física, Facultad de Ingeniería, Montevideo, Uruguay.

18:00 **Ultrafast Li diffusion in Li3V2(PO4)3-based electrode material** **B 17.49**
Aleksandr V. Ivanishchev1,2, Irina A. Ivanishcheva2, Artem M. Abakumov1, Stanislav S. Fedotov1,3, Evgeny V. Antipov3
1Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, 3 Nobel str., Moscow, 143026, Russian Federation, 2Institute of Chemistry, Saratov State University named after N.G. Chernyshevsky, 83 Astrakhanskaya Str., Saratov 410012, Russian Federation, 3Chemistry Department, Lomonosov Moscow State University, 1 Leninskie gori, Moscow 119991, Russian Federation

18:00 **Complex wet-environments in electronic-structure calculations** **B 17.50**
G. Fisicaro [1], L. Genovese [2], O. Andreussi [3,4], N. Marzari [4], and S. Goedecker [1]
[1] Department of Physics, University of Basel, Klingelbergstrasse 82, 4056 Basel, Switzerland [2] Laboratoire de simulation atomistique (L_Sim), SP2M, INAC, CEA-UJF, Grenoble, F-38054, France [3] Institute of Computational Science, Universita' della Svizzera Italiana,Via Giuseppe Buffi 13, CH-6904 Lugano [4] Theory and Simulations of Materials (THEOS) and National Center for Computational Design and Discovery of Novel Materials (MARVEL), École Polytechnique Fédérale de Lausanne, Station 12, CH-1015 Lausanne

18:00 **All solid state thin film batteries towards flexibility, extended cycling and higher energy density** **B 17.51**
Alfonso Sepúlveda(a)(d), Francesca Criscuolo(a)(c), Jan Speulmanns(a), Louis de Taeye(a), Philippe. M. Vereecken(a)(b)
a) Imec, Kapeldreef 75, 3001 Leuven, Belgium b) KU Leuven, Department of Microbial and Molecular Systems , Celestijnenlaan 200D, B-3001 Leuven, Belgium c) Current address: EPFL IC IINFCOM LSI1 INF 336,CH-1015, Lausanne, Switzerland d) Corresponding author: alfonso.sepulvedamarquez@imec.be

18:00 **Interfaces in doped LaGaO3 and their impact on solid oxide electrolytes** **B 17.52**
Aoife K. Lucid, Graeme W. Watson
School of Chemistry and CRANN, Trinity College Dublin, Dublin 2, Ireland.

18:00 **Environmental friendly one-pot synthesis of carbon/Si-based materials for Li- and Na-ion batteries** **B 17.53**
Cristina Nita 1,2, Julien Fullenwarth 3, Julien Parmentier 1, Laure Monconduit 3, Cathie Vix-Guterl 1,4, Camelia Matei Ghimbeu 1,4
1 Institut de Science des Matériaux de Mulhouse (IS2M), UMR 7361 CNRS-UHA, 15 rue Jean Starcky, BP 2488, 68057 Mulhouse Cedex, France, 2 National Institute for Lasers, Plasma and Radiation Physics, Atomistilor 409 bis, RO-77125, Magurele, Romania, 3 ICG/AIME (UMR 5253 CNRS), Université Montpellier II CC 15-02, Place E. Bataillon, 34095 Montpellier Cedex 5, France, 4 Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS FR3459, 33 Rue Saint Leu, 80039 Amiens Cedex, France,

18:00 **Effect of annealing temperature on crystal structure and lithium ion battery performance of TiO2 surface modified LiNi0.5Mn1.5O4** **B 17.54**
F. Ulu (1), J. D?Haen (2), B. Ruttens (2), D. De Sloovere (1), T. Vranken (1), M. Verheijen (1), M. K. Van Bael (1), A. Hardy (1)
(1) UHasselt, Institute for Materials Research (IMO-IMOMEC), Inorganic and Physical Chemistry, Agoralaan, 3590 Diepenbeek, Belgium, (2) UHasselt, Institute for Materials Research (IMO-IMOMEC), Materials Physics, Wetenschapspark 1, 3590 Diepenbeek, Belgium

18:00 **A Polymer Electrolyte Alcohol Electrosynthesis Cell (PEAEC) Continuously Producing Alcohols from Carboxylic Acids** **B 17.55**
Masaaki Sadakiyo, Xuedong Cui, Shinichi Hata, Miho Yamauchi
International Institute for Carbon-Neutral Energy Research, Kyushu University

18:00 **Simultaneous Mass Change and Electrochemical Analysis of Electrodeposited MnO2** **B 17.56**
Hayden Cameron (1), Jessica Allen (2), Scott Donne (1)
(1) University of Newcastle, Australia, Department of Chemistry, (2) University of Newcastle, Australia, Department of Chemical Engineering

18:00 **Influence of conducting polymer binder on electrochemical properties of LiFe0.4Mn0.6PO4-based cathode materials** **B 17.57**
R.V. Apraksin, S.N. Eliseeva, E.G. Tolstopjatova, V.V. Kondratiev
Department of Electrochemistry, Institute of Chemistry, Saint Petersburg State University 7/9 Universitetskaya nab., St. Petersburg, 199034, Russia

18:00 **Evaluation of bismuth ferrite based perovskite for electrochemical energy storage and photocatalytic activity** **B 17.58**
Moumita Dewan and Subhasish Basu Majumder
Materials Science Centre, Indian Institute of Technology Kharagpur, Kharagpur, India

18:00 **Electrodeposited Co-Fe catalysts: Influence of Co/Fe ratio on OER activity and rechargeable zinc-air battery performance** **B 17.59**
Ming Xiong, Douglas G. Ivey
Department of Chemical and Materials Engineering University of Alberta Edmonton, Alberta, Canada T6G 1H9

18:00 **Potential of Electroactive Nickel Oxides Grown on Nickel Foam and Self-Standing Nickel Nano Wires Produced by Molten Salt Anodization for Supercapacitor Applications** **B 17.60**
Nazli Irem Tokmak1, Burcak Avci1, Mustafa Urgen1
1. Istanbul Technical University, Istanbul, Turkey.

18:00 **KVPO4F as Cathode for K-ion Rechargeable Batteries** **B 17.61**
Sokolova E.,1 Abakumov A.,1 Stevenson K.,1 Fedotov S.,2 Swamy T.,3 Delattre B., 3 Chiang Y.-M.3
1 Skoltech Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, 143026 Moscow, Russian Federation&#8232,2 Department of Chemistry, Lomonosov Moscow State University, 119991 Moscow, Russian Federation&#8232,3 Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139-4307, USA

18:00 **Exfoliation of WS2 by a new Lithium Intercalation Method and its Energy Storage Device Application** **B 17.62**
Arup Ghorai,1 Anupam Midya,*1 Samit K Ray2
1School of Nanoscience and Technology, Indian Institute of Technology Kharagpur, Kharagpur 721302 2Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302

Anionic Redox Processes : D. Bresser

08:30 **Halogenid conduction in polymer electrolytes for chloride and fluoride ion batteries** — Ƀ 18.1
Franziska Klein
Helmholtz Institute Ulm

08:45 **Atomic structure of metal-ion battery cathodes with advanced transmission electron microscopy** — Ƀ 18.2
Artem Abakumov
Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Nobelya str. 3, 143026 Moscow, Russia

09:00 **Oxygen Redox in Battery Chemistries** — Ƀ 18.3
Kun Luo, Niccolo Guerrini, Matthew M Roberts and Peter G Bruce
Departments of Materials and Chemistry, University of Oxford, Parks Road, Oxford OX1 3PH, UK

09:15 **Anion charge storage through oxygen intercalation in peroskite pseudocapacitor electrodes** — Ƀ 18.4
Keith J. Stevenson (1),* Caleb Alexander (2), Tyler Mefford (3), Keith P. Johnston (2)
(1) Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, Nobel st. 3, Moscow, 143026, Russian Federation (2) Department of Chemical Engineering,The University of Texas at Austin, 1 University Station, Austin, Texas 78712 (3) Department of Chemistry, The University of Texas at Austin, 1 University Station, Austin, Texas 78712

09:30 **Anionic redox processes for electrochemical devices: from theory to application** — Ƀ 18.5
Alexis Grimaud
1. Chimie du Solide et de l?Energie, FRE 3677, Collège de France, 75231 Paris Cedex 05, France 2. Réseau sur le Stockage Electrochimique de l?Energie (RS2E), FR CNRS 3459, 80039 Amiens Cedex, France

10:00 **Coffee Break**

Na-Ion Batteries : A. Grimaud, A. Vlad

10:30 **Interfaces studies of hard carbon and transition metal-tin-hard carbon nanocomposites for sodium ion batteries** — Ƀ 19.1
Jesus Santos-Peñaa,b, , Barthèlemy Aspea, Thomas Defforgec, Cécile Autretc, Gaël Gautierc, Christine Damasa,b, Bénédicte Claude-Montignya,b
a Laboratoire de Physico-Chimie des Matériaux et des Electrolytes pour l'Energie (EA 6299) Université François Rabelais, Parc de Grandmont, 37200 Tours, France b Laboratoire de Recherche Correspondante CEA/DAM, Le Ripault, F-37260, Monts, France c Université François Rabelais de Tours, CNRS, CEA, INSA-CVL, GREMAN UMR 7347, Tours, France jesus.santos-pena@univ-tours.fr

10:45 **Manganese based sodium layered oxides as high performance positive electrode materials for Na ion batteries.** — Ƀ 19.2
Elena Gonzalo,a Man H. Han,a Begoña Acebedo,a Neeraj Sharma,b Teofilo Rojo.a,c
a CICenergigune, Parque Tecnológico de Álava, Albert Einstein 48, Edificio CIC, 01510 Miñano, Spain, b School of Chemistry, UNSW Australia, Sydney New South Wales 2052, Australia, c Departamento de Química Inorgánica, Universidad del País Vasco UPV/EHU, P. O. Box. 644, 48080 Bilbao, Spain

11:00 **Sb/Sb2O3 based nanocomposite anodes for sodium-ion batteries** — Ƀ 19.3
K. P. Lakshmi, D. Ramasubramonian ‡ and M. M. Shaijumon
School of Physics, Indian Institute of Science Education and Research Thiruvananthapuram, Thiruvananthapuram, Kerala, 695016, India. ‡Present Address: University of Illinois at Chicago, Chicago, Illinois 60607, United States

11:15 **Development of High Capacity Cathode Materials for Sodium-Ion Batteries** — Ƀ 19.4
Jang-Yeon Hwang, and Yang-Kook Sun
Department of Energy Engineering, Hanyang University, Seoul 133-791, South Korea

11:30 **The interface between NaCoO2 and solid electrolytes: reaction layer formation and interface resistance** — Ƀ 19.5
Conrad Guhl (A), Philipp Kehne (B), Philipp Komissinsiy (B), Qianli Ma (C), Frank Tietz (C), René Hausbrand (A)
A= TU-Darmstadt, surface science devision B= TU-Darmstadt, advanced thinfilm technology C= FZ Jülich, Institute of Energy and Climate Research

Electrolyte Systems 4: Ceramic : A. Grimaud, A. Vlad

11:45 **Li+ and Al3+ site occupancies impact on ionic conductivity in Li(7–3x) AlxLa3Zr2O12 garnets** — Ƀ 20.1
Adriana Castillo 1, Thibault Charpentier 1, Saïd Yagoubi 1, Eddy Foy 1, Mélanie Moskura 1, Olivier Rapaud 2, Nicolas Pradeilles 2, Pierre-Marie Geffroy 2, Hicham Khodja 1
1 NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91191 Gif sur Yvette Cedex, France. 2 SPCTS, UMR CNRS 7315, 12 rue Altantis, 87068 Limoges Cedex, France.

12:00 **Solid Electrolytes based on Li7La3Zr2O12 Garnets: Crystal Chemistry, Ion Transport and Implementation into Li Metal Batteries** — Ƀ 20.2
Anna Llordés (1,2), Lucienne Buannic (1), Frederic Aguesse (1), Jakub Zagorski (1), Brahim Orayech (1), Juan Miguel Lopez del Amo (1), William Manalastas (1), Nebil A. Katcho (1), Javier Carrasco (1), John A. Kilner (1,3).
(1) CIC EnergiGUNE, Solid Electrolyte Group. Parque Tecnológico de Álava, Albert Einstein 48, 01510, Miñano, Spain, (2) IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain., (3) Imperial College London, Department of Materials, Exhibition Road, SW7 2AZ, London, UK

12:15 **Systematic Search for Lithium Ion Conducting Compounds by Screening of Compositions Combined with Atomistic Simulation** — Ƀ 20.3
Daniel Mutter, Daniel Urban, Christian Elsässer
Freiburger Materials Research Center (FMF), University of Freiburg, Stefan-Meier-Strasse 21, 79104 Freiburg, Germany, Fraunhofer IWM, Woehlerstrasse 11, 79108 Freiburg, Germany

12:30 **Synthesis and Implementation of Ceramic Li7La3Zr2O12 Electrolyte for All-Solid-State Batteries** — Ƀ 20.4
Ognjen Hajndl,Vasily TARNOPOLSKIY,Philippe AZAIS,Mohamed CHAKIR
Technocentre Renault 1 Avenue du Golf 78280 Guyancourt FRANCE and CEA/LITEN 17 rue des Martyrs 38054 GRENOBLE FRANCE,CEA/LITEN 17 rue des Martyrs 38054 GRENOBLE FRANCE,CEA/LITEN 17 rue des Martyrs 38054 GRENOBLE FRANCE,Technocentre Renault 1 Avenue du Golf 78280 Guyancourt FRANCE

12:45 **Lunch**

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM C

Organic photovoltaics: material synthesis and characterization, device engineering, device physics and upscaling

Symposium Organizers :

Feng GAO, Linköping University, Sweden

L. Jan Anton KOSTER, University of Groningen, The Netherlands

Natalie STINGELIN, Imperial College London, U.K.

Thuc-Quyen NGUYEN, University of California, Santa Barbara, USA

Tuesday 23 May 2017

New Materials : Alberto SALLEO

08:15 **Development of Electron Acceptors for Organic Solar Cells** **C 1.1**
Iain McCulloch
King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), and, Physical Science and Engineering Division (PSE). Thuwal, 23955-6900, Saudi Arabia

08:45 **Materials Synthesis and Device Engineering for All-Polymer Solar Cells** **C 1.2**
Ergang Wang
Chalmers University of Technology

09:00 **Fullerene-free Polymer Solar Cells with Efficiencies over 12%** **C 1.3**
Sunsun Li, Huifeng Yao, and Jianhui Hou
Beijing National Laboratory for Molecular Sciences, State Key Laboratory of Polymer Physics and Chemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

09:30 **The transport physics of small molecular acceptor - donor bulk heterojunction composites and solar cells** **C 1.4**
Nicola Gasparini, Derya Baran, Iain McCulloch and Christoph Brabec

10:00 **Coffee Break**

Ternary Blends : Iain MCCULLOCH

10:30 **Controlling over the open-circuit voltage of bulk heterojunction cells using ternary blends and doping** **C 2.1**
Alberto Salleo, Sonya Mollinger, Koen Vandewal, Zhengrong Shang
Department of Materials Science and Engineering Stanford University, Department of Applied Physics Stanford University, IAPP Dresden, Department of Materials Science and Engineering Stanford University

11:00 **Composition-dependent disorder and open circuit voltage in ternary organic solar cells** **C 2.2**
Nikolaos Felekidis , Martijn Kemerink
Complex Materials and Devices, Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden.

11:15 **Controlling the Nano-scale Morphology of Organic Bulk Heterojunctions for Highly Efficient Ternary Solar Cells** **C 2.3**
Derya Baran, Andrew Wadsworth, Shahid R. Ashraf, David A. Hanifi, Sarah Holliday, Marios Neophytou, Thomas Kirchartz, Aram Amassian, Alberto Salleo, Iain McCulloch
Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, UK King Abdullah University of Science and Technology (KAUST), KSC, Thuwal 23955-6900, Saudi Arabia IEK5-Photovoltaics, Forschungszentrum Jülich, 52425 Jülich, Germany Department of Materials Science and Engineering, Stanford University, 476 Lomita Mall, Stanford, California 94305, USA

11:30 **Glass Forming Fullerene Mixtures for Polymer Solar Cells** **C 2.4**
Christian Müller
Chalmers University of Technology

12:00 **Lunch**

Photophysics and Device Physics (I) : Barry RAND

14:00 **On the Competition Between Free Charge Recombination and Extraction in Low Mobility Photoactive Materials** **C 3.1**
Dieter Neher, Martin Stolterfoht, Jack Love, Steffen Roland, Jona Kurpiers
Institute of Physics and Astronomy, University of Potsdam Karl-Liebknecht-Str 24-25, 14476 Potsdam, Germany, neher@uni-potsdam.de

14:45 **Origin of Dark Current in Small Molecule Organic Photodiodes** **C 3.2**
Himanshu Shekhar, Dan Liraz, Lior Tzabari, Nir Tessler
Technion- Israel Institute of Technology, Department of Electrical Engineering, Israel

15:00 **Charge separation dynamics in organic photovoltaic materials with low band offsets** **C 3.3**
Artem A. Bakulin
Imperial College London

15:30 **Coffee Break**

Photophysics and Device Physics (II) : Artem BAKULIN

16:00 **Very delocalized charge transfer (CT) states and exciton engineered organic solar cells** **C 4.1**
Michael Fusella, YunHui L. Lin, and Barry P. Rand
Department of Electrical Engineering & Andlinger Center for Energy and the Environment Princeton University, Princeton, NJ 08544 USA

16:30 **Imaging the Multi-Temporal Photo-Carrier Dynamics at the Nanometer Scale in Organic Solar Cells** **C 4.2**
Pablo A. Fernández Garrillo†‡§, Łukasz Borowik*†‡, Florent Caffy§, Renaud Demadrille§, Benjamin Grévin*§
† Université Grenoble Alpes, F-38000 Grenoble, France, ‡ CEA, LETI, MINATEC Campus, F-38054 Grenoble, France, § INAC-SPrAM, CEA, CNRS, Université Grenoble Alpes, F-38000 Grenoble, France,

16:45 **Charge carrier dynamics in organic solar cells** **C 4.3**
James R Durrant
Centre for Plastic Electronics, Imperial College London and SPECIFIC IKC, University of Swansea

17:30 **High efficiency organic solar cells based on crosslinked polymer donor networks** **C 4.4**
Peter HO, Hao-Yu PHUA
National University of Singapore

17:45 **Understanding the transient behavior of OPV devices: a kinetic Monte Carlo approach** **C 4.5**
Feilong Liu[1,2], John Love[3]3, Charley Schaefer[2], Harm van Eersel[2], Reinder Coehoorn[1], Martijn Kemerink[4], Dieter Neher[3], Peter A. Bobbert[1]
[1] Eindhoven University of Technology, the Netherlands [2] Simbeyond B.V., the Netherlands [3] University of Potsdam, Germany [4] Linköping University, Sweden

18:00 **Dynamic characterization of perovskite solar cells and organic semiconductor devices** **C 4.6**
S. Altazin[1], M. Neukom[1], S. Züfle[2], E. Knapp[2], C. Kirsch[2], B. Ruhstaller[1,2]
[1] Fluxim AG, Technoparkstrasse 2, 8406 Winterthur (Switzerland) [2]Zürich University of Applied Sciences, Technikumstrasse 9, 8401 Winterthur (Switzerland)

18:15 **Break**

Poster (I) : Feng GAO, Jan Anton KOSTER, Natalie STINGELIN, and Thuc-Quyen NGUYEN

18:30 **Green Solvent Alternatives for Efficient Molecular Photovoltaics Processing** **C 5.1**
Mahmoud E. Farahat, Chih-Hao Lee, Chih-Wei Chu
Central Metallurgical Research and Development Institute (CMRDI), P.O. Box: 87, Helwan, Cairo 11421, Egypt, Department of Engineering and System Science, National Tsing-Hua University, Hsinchu 30013, Taiwan, Research Center for Applied Sciences, Academia Sinica, Taipei 115, Taiwan

18:30 **High-Performance, Robust, Stretchable Organic Photovoltaics Using Transparent hybrid electrode** **C 5.2**
Chih-Ping Chen*, Chun-Ying Chiang
Department of Materials Engineering, Ming Chi University of Technology, New Taipei City 243, Taiwan

18:30 **Low-cost nanostructured stamps for improving light absorption in polymer solar cells via soft lithography** **C 5.3**
Chao Wang, Eliot Gann, Christopher R. McNeill
Department of Materials Science and Engineering, Monash University, Wellington Road, Clayton, VIC 3800, Australia, Australian Synchrotron, 800 Blackburn Road, Clayton, VIC 3168, Australia,Department of Materials Science and Engineering, Monash University, Wellington Road, Clayton, VIC 3800, Australia

18:30 **EDOT-diketopyrrolopyrrole copolymers for polymer solar cells** **C 5.4**
Chao Wang, Christian J. Mueller, Eliot Gann, Amelia C. Y. Liu,d Mukundan Thelakkat, and Christopher R. McNeill
Department of Materials Science and Engineering, Monash University, Wellington Road, Clayton, VIC 3800, Australia, Applied Functional Polymers, Macromolecular Chemistry I, University of Bayreuth, 95440 Bayreuth, Germany, Australian Synchrotron, 800 Blackburn Road, Clayton, VIC 3168, Australia, Monash Centre for Electron Microscopy and School of Physics, Monash University, Clayton,Victoria 3800, Australia, Applied Functional Polymers, Macromolecular Chemistry I, University of Bayreuth, 95440 Bayreuth, Germany, Department of Materials Science and Engineering, Monash University, Wellington Road, Clayton, VIC 3800, Australia

18:30 **Syntheses of pyrimidine-based polymers with 2-{4-[4,6-bis-(4-hexyl-thiophen-2-yl)-pyrimidin-2-yl]-phenyl}-thiazolo[5,4-b]pyridin** **C 5.5**
Juae Kim, Sangmin Chae, Ahra Yi, Jung Hyeong Cho Hyo Jung Kim, Hongsuk Suh*
Department of Chemistry and Chemistry Institute for Functional Materials, Pusan National University, Busan 609-735, Republic of Korea, Department of Organic Material Science and Engineering, Pusan National University, Busan 609-735, South Korea, Department of Organic Material Science and Engineering, Pusan National University, Busan 609-735, South Korea, Department of Organic Material Science and Engineering, Pusan National University, Busan 609-735, South Korea, Department of Chemistry and Chemistry Institute for Functional Materials, Pusan National University, Busan 609-735, Republic of Korea

18:30 **Comparison of sputtered and solution processed ZnO buffer layer for inverted polymer solar cells** **C 5.6**
Han-Ki Kim1 and Yoon-Young Choi2
1Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, 1 Seocheon-dong, Yongin, Gyeonggi-do 446-701, Republic of Korea 2Future Technology Research Group, Kolon Central Research Park, 154 Mabukro, Giheung-ku, Yongin-si, Gyeonggi-do, 16910, Republic of Korea

18:30 **Charge carrier extraction in organic solar cells governed by steady-state mobilities** **C 5.7**
Vincent M. Le Corre, Azadeh Rahimi Chatri, Nutifafa Y. Doumon, L. Jan Anton Koster
Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG, Groningen, The Netherlands

18:30 **High-Efficiency Extremely Stable Polymer Solar Cells via Hydrogen Doping of ZnO Interlayers** **C 5.8**
Ermioni Polydorou, Anastasia Soultati, Theodoros Papadopoulos, Joe Briscoe, Leonidas C. Palilis, Panagiotis Argitis, Dimitris Davazoglou, Maria Vasilopoulou
Institute of Nanoscience and Nanotechnology, National Center for Scientific Research Demokritos, 15310, Aghia Paraskevi, Attiki, Greece, Department of Physics, University of Patras, 26504 Patras, Greece, Department of Natural Sciences, University of Chester,Thornton Science Park, CH2 4NU, Chester, U. K., Materials Research Institute, School of Engineering and Materials, Queen Mary University of London, U. K.

18:30 **Enhanced upconversion efficiency via emitter structural modification** **C 5.9**
Steponas Raisys, Greta Bucyte, Karolis Kazlauskas, Saulius Jursenas
Institute of Applied Research, Vilnius University

18:30 **Large area uniform Perovskite film fabrication: morphology optimization and photophysics study** **C 5.10**
Soumitra Satapathi, Shailendra Sharma
Department of Physics, Indian Institute of Technology Roorkee, Roorkee, Haridwar, Uttarakhand, 247667, India

18:30 **Effect of molecular orientation induced by patterned substrate on optical properties of pentacene thin films** **C 5.11**
Anu Babusenan, Sanjoy Jena, Debdutta Ray, Jayeeta Bhattacharyya
Department of Physics,Indian Institute of Technology Madras, India, Department of Electrical Engineering,Indian Institute of Technology Madras, India

18:30 **Overcoming Efficiency Challenges in Organic Solar Cells: Rational Design and Development of Conjugated Polymers** **C 5.12**
Hae Jung Son, Injeong Shin, Jea Woong Jo
Photo-electronic research center, Korea Institute of Science and Technology (KIST), Republic of Korea

18:30 **Micro-structural and morphological interface characterization in multilayer inverted polymer solar cells** **C 5.13**
A. Jouane (a), R. Moubah (a), Y. Odarchenko (b), G. Schmerber (e), D. A. Ivanov (b), Y. –A. Chapuis (c), R. Lardé (d), H. Lassri (a) and Y. Jouane (e)
(a) LPMMAT, Faculté des Sciences Ain Chock, Université Hassan II, BP 5366 Mâarif, Casablanca, Morocco, (b) IS2M, Institut de Sciences des Matériaux de Mulhouse, UMR 7361 CNRS-UHA, 15 Rue Jean Starcky, BP 2488, 68057 Mulhouse Cedex, France, (c) Université de Strasbourg, CNRS, ICube, UMR 7357, F-67000 Strasbourg, France, (d) Groupe de Physique des Matériaux, UMR 6634 CNRS, Université et INSA de Rouen, Avenue de l'Université, BP 12, 76801 Saint Etienne du Rouvray Cedex, France, (e) Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France.

18:30 **Reduction of Burn-in Loss in Polymer Solar Cells by Controling the Chemical Structure of Photoactive Materials** **C 5.14**
Vu Van Doan1,2, Rasool Shafket1,2, Chang Eun Song1,2, Won Suk Shin1,2
1 Energy Materials Research Center, Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 305-600, Korea 2 Department of Advanced Materials and Chemical Engineering, University of Science and Technology (UST), Daejeon, 34113, Korea

18:30 **Effect of graphene induced molecular orientation on the optical properties of pentacene thin films** **C 5.15**
ANU BABUSENAN, SANJOY JENA, LIJIN GEORGE, MANU JAISWAL, DEBDUTTA RAY, JAYEETA BHATTACHARYYA
Department of Physics, Indian Institute of Technology Madras, India, Department of Electrical Engineering, Indian Institute of Technology Madras, India

18:30 **Charge carriers' transfer dynamics in the thin PBDTTPD polymer layers** **C 5.16**
Andrius AUKŠTUOLIS, Nerijus NEKRAŠAS, Mihaela GIRTAN
Andrius AUKŠTUOLIS, Nerijus NEKRAŠAS - Department of Solid State Electronics, Faculty of Physics, Vilnius University, Vilnius, Lithuania, Mihaela GIRTAN - Photonics Laboratory, Angers University, Angers, France

18:30 **All-Rhodanine Based Conjugated Small Molecules for Use in Fullerene-Free Organic Solar Cells** **C 5.17**
Sora Oh, Won Suk Shin, Jong-Cheol Lee, Chang Eun Song, Sang Kyu Lee
Korea Research Institute of Chemical Technology (KRICT)

18:30 **Single Crystal Organic Photovoltaic Cells Using Lateral Electron Transport** **C 5.18**
Mitsuru Kikuchi, Kenichiro Takagi, Hiroyoshi Naito, Masahiro Hiramoto
Institute for Molecular Science, Osaka Pref. Univ., NEDO

18:30 **Enhancement of macroporisity by sol-gel moulding of self-assembled polymer beads for perovskite solar cell** **C 5.19**
Kübra Yasaroglu1,2, Katarzyna Gawlińska3, Jean-Luc Rehspringer1, Simone Mastroianni2, Thomas Fix4, Stéphane Roques4, Guy Schmerber1, Abdelilah Slaoui4, Andreas Hinsch2, Aziz Dinia1
1Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France 2Fraunhofer Institute for Solar Energy Systems ISE, Heidenhofstr. 2, 79110 Freiburg, Germany 3Institute of Metallurgy and Materials Science Polish Academy of Sciences, 30-059 Krakow, Poland 4Université de Strasbourg, CNRS, ICube, UMR 7357, F-67000 Strasbourg, France

18:30 **Fulleroly derivatives for organic fotovoltaics** **C 5.20**
V. Blashuk, O. Ivanyuta, S. Kratko
Taras Shevchenko National University of Kyiv 64/13, Volodymyrska Str., Kyiv, 01601, Ukraine

18:30 **Role of colloidal plasmonic nanostructures in organic solar cells** **C 5.21**
C. R. Singh, T. Honold, M. Karg and M. Thelakkat
C. R. Singh, M. Thelakkat, Applied Functional Polymers, Macromolecular Chemistry I, University of Bayreuth, 95447 Bayreuth, Germany T. Honold, M. Karg, Department of Physical Chemistry 1, University of Bayreuth, 95447 Bayreuth, Germany

18:30 **Simulation-assisted research on organic electronic materials and devices using a kinetic Monte Carlo approach** **C 5.22**
Siebe van Mensfoort[1], Charley Schaefer[1], Stefano Gottardi[1], Alice Furlan[1], Harm van Eersel[1], Peter Bobbert[2], Reinder Coehoorn[2]
[1]Simbeyond B.V. &#8211, Eindhoven, The Netherlands [2] Eindhoven University of Technology, The Netherlands

Small molecule solar cells : Harald ADE

08:15 **Small molecule organic solar cells: From lab to applications** **C 6.1**
Karl Leo
Dresden Integrated Center for Applied Physics and Photonic Materials (IAPP) TU Dresden 01062 Dresden

09:00 **Why Is Open-Circuit Voltage So High in Organic Solar Cells Based on Small Molecules?** **C 6.2**
Oleg V. Kozlov [1], Yuriy N. Luponosov [2], Alexander N. Solodukhin [2], Bruno Flament [3], Yoann Olivier [2], Roberto Lazzaroni [2], Jérôme Cornil [2], Sergei A. Ponomarenko [2,4], Maxim S. Pshenichnikov [1]
[1] Zernike Institute for Advanced Materials, University of Groningen, The Netherlands, [2] Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences, Moscow, Russia, [3] Service de Chimie des Materiaux Nouveaux, Université de Mons, Belgium, [4] Chemistry Department, Moscow State University, Moscow, Russia

09:15 **Molecular strategies towards high-efficiency photovoltaic cells** **C 6.3**
ZHAN, Chuanlang
Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Photochemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100190, P.R. China

09:30 **BHJ Solar Cells with Solution-Processable Molecular Donors & Acceptors: Morphologies & Carrier Transport** **C 6.4**
Pierre M. Beaujuge
Physical Sciences and Engineering Division, KAUST Solar Center (KSC), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

10:00 **Coffee Break**

Photophysics and Device Physics (III) : Dieter NEHER

10:30 **Quantitative Structure-Function Relations in PSCs from Soft X-ray Scattering** **C 7.1**
Harald Ade
Dept. of Physics, North Carolina State University, Raleigh, NC 27695, USA

11:00 **Photo-oxidation of Fullerenes: quantitative analysis of device losses** **C 7.2**
Andrew M. Telford, Beth M. Rice, Jason A. Rohr, Alexandre De Castro Maciel, Harrison K. H. Lee, James R. Durrant, Wing C. Tsoi, Jenny Nelson, Z. Li
AMT, BR, JAR, JN: Department of Physics and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, UK ADCM: Departamento de Física, Centro de Ciências da Natureza, Universidade Federal do Piauí, Teresina-PI, 64049-550, Brazil HKHL, JRD, WCT, ZL: SPECIFIC, College of Engineering, Swansea University, Swansea SA1 8EN, UK JRD: Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, UK

11:15 **Initial stage degradation in organic photovoltaics: fullerene dimerization or generation of free radicals?** **C 7.3**
L. N. Inasaridze,(a) A. I. Shames,(b) I. V. Martynov,(a) B. Li,(c) A. V. Mumyatov,(a) D. K. Susarova,(a) E. A. Katz,(c,d) and P. A. Troshin*(e),(a)
(a) The Institute for Problems of Chemical Physics of the Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, 141432, Russia E-mail: troshin2003@inbox.ru. (b) Department of Physics, Ben-Gurion University of the Negev, P. O. Box 653, Be'er Sheva 84105, Israel. (c) Department of Solar Energy and Environmental Physics, J. Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sede Boqer Campus, 84990 Midershet Ben-Gurion, Israel. (d) Ilse Katz Institute of Nano-Science and Technology, Ben-Gurion University of the Negev, Be'er Sheva 84105, Israel. (e) Skolkovo Institute of Science and Technology, Nobel St. 3, Moscow, 143026, Russia.

11:30 **Figures of Merit Guiding Research on Organic Solar Cells** **C 7.4**
Thomas Kirchartz
IEK5-Photovoltaik, Forschungszentrum Jülich, 52425 Jülich, Germany, Faculty of Engineering and CENIDE, University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany

12:00 **Lunch**

Perovskite solar cells and others : Thomas KIRCHARTZ

14:00 **Interplay of electronic and dynamical processes in organohalide perovskites** **C 8.1**
Edoardo Mosconi, Daniele Meggiolaro, Filippo De Angelis
Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), CNR-ISTM, Perugia, Italy, CompuNet, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy

14:45 **Confocal Laser Fluorescence and Photocurrent Microscopy on bulk heterojunction polymer:fullerene and on perovskite solar cells** **C 8.2**
Margherita Bolognesi a, Clara Aranda b, Mario Prosa a, Marta Tessarolo c, Stefano Toffanin a, Mirko Seri d, Michele Muccini a, Tanja Ivanovska a, Giampiero Ruani a, Germà Garcia-Belmonte b, Antonio Guerrero b
a Consiglio Nazionale delle Ricerche (CNR), Istituto per lo Studio dei Materiali Nanostrutturati (ISMN), Via P. Gobetti 101, 40129, Bologna (Italy), b Institute of Advanced Materials, Universitat Jaume I, Avda. Sos Baynat s/n, 12071 Castelló de la Plana (Spain), c Centro interdipartimentale per la ricerca industriale-meccanica avanzata e materiali, Dipartimento di fisica e astronomia, Università di Bologna, Bologna (Italia), d Consiglio Nazionale delle Ricerche (CNR, Istituto per la Sintesi Organica e la Fotoreattività (ISOF), Via P. Gobetti 101, 40129, Bologna (Italy),

15:00 **The collective vibrational modes driving ultralow thermal conductivity of perovskite solar cells** **C 8.3**
Sheng-Ying Yue, Ming Hu
Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany Institute of Mineral Engineering, Division of Materials Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany

15:15 **Photoconductivity in ionic cyanine films** **C 8.4**
Lei Wang (1,3,4), Sandra Jenatsch (1,4), Beat Ruhstaller (2), Christian Hinderling (3), Roland Hany (1), Frank Nüesch (1,4)
(1) Empa, Swiss Federal Institute for Materials Science and Technology, Laboratory for Functional Polymers, Überlandstrasse 129, CH-8600 Dübendorf, Switzerland. (2) Zurich University of Applied Sciences, Institute of Computational Physics, Technikumstrasse 9, CH-8401 Winterthur, Switzerland (3) Zurich University of Applied Sciences, Institute of Chemistry and Biotechnology, Einsiedlerstrasse 31, CH-8820 Wädenswil, Switzerland. (4) Institut des Matériaux, Ecole Polytechnique Fédérale de Lausanne, EPFL, Station 12, CH-1015 Lausanne, Switzerland.

15:30 **Coffee Break**

16:15 **Plenary Session**

Joint session with Symposium M (I) : Natalie BANERJI

08:30 **Molecular semiconductors for LEDs and solar cells: designing around the Coulomb interaction** — C 9.1
Richard Friend
University of Cambridge

09:00 **Unravelling the crystal structure of PTB7 polymer using oriented crystallization induced by high temperature rubbing** — C 9.2
L. Biniek,1 A. Hamidi-Sakr,1 Y. J. Dappe,3 L. Grodd,2 S. Grigorian,2 M. Brinkmann1 (1) Université de Strasbourg, CNRS, ICS UPR 22, F-67000 Strasbourg, France. (2) Solid State Physics, University of Siegen, Walter Flex Strasse-3, D-57068 Siegen, Germany. (3) SPEC, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91191 Gif sur Yvette Cedex, France.

09:15 **Thermoelectric properties of highly conductive printed organic thin films** — C 9.3
Mario Caironi1, Davide Beretta1,2, Matteo Massetti1,2,Alex Barker1, Isis Maqueira-Albo1,2, Alberto Calloni2, Gianlorenzo Bussetti2, Giorgio Dell&#8217,Erba1,3, Lamberto Duò2, Annamaria Petrozza1, Guglielmo Lanzani1,2
Italy

09:30 **Monomolecular and Bimolecular Recombination of Electron– Hole Pairs at the Interface of a Bilayer Organic Solar Cell** — C 9.4
Anna Köhler
University of Bayreuth

10:00 **Coffee Break**

Joint session with Symposium M (II) : Alek DEDIU

10:30 **Charge transport and spin mixing in organic photovoltaic devices** — C 10.1
Jianpu Wang1,2, Girish Lakhwani2,3, Feng Gao2,4, Alexei Chepelianskii2,5, and Neil C. Greenham2
1Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing Tech University (NanjingTech), Nanjing 211816, P.R. China 2Cavendish Laboratory, J.J. Thomson Avenue, Cambridge CB3 0HE, United Kingdom 3School of Chemistry, University of Sydney, NSW 2006, Australia 4Biomolecular and Organic Electronics, IFM, Linköping University, Linköping 58183, Sweden 5LPS, Universite Paris-Sud, CNRS, UMR 8502, F-91405, Orsay, France

11:00 **Effect of electron-phonon interaction on electronic structure and optical absorption of halide perovskites** — C 10.2
Jia-Yue Yang, Ming Hu
Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany

11:15 **Modulating the ferromagnet/molecule spin hybridization using an artificial magnetoelectric** — C 10.3
Michał Studniarek, Salia Cherifi-Hertel, Etienne Urbain, Ufuk Halisdemir, Rémi Arras, Beata Taudul, Filip Schleicher,Marie Hervé, Charles-Henri Lambert, Abbass Hamadeh, Loïc Joly, Fabrice Scheurer, Guy Schmerber, Victor Da Costa, Olivia Mauguin, Ludovic Largeau, Florian Leduc, Fadi Choueikani, Edwige Otero, Wulf Wulfhekel, Jacek Arabski, Philippe Ohresser, Wolfgang Weber, Eric Beaurepaire, Samy Boukari,Martin Bowen Dr. M. Studniarek, D. S. Cherifi-Hertel, E. Urbain, Dr. U. Halisdemir, B. Taudul, Dr. F. Schleicher, Dr. L. Joly, Dr. F. Scheurer, Guy Schmerber, Dr. V. Da Costa, J. Arabski, Prof. W. Weber, Dr. E. Beaurepaire, Dr. S. Boukari, Dr. M. Bowen Institut de Physique et Chimie des Matériaux de Strasbourg UMR 7504 CNRS, Université de Strasbourg, 23 Rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France E-mail: bowen@unistra.fr Dr. M. Studniarek, F. Leduc, Dr. F. Choueikani, Dr. E. Otero, Dr. P. Ohresser Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France Dr. Rémi Arras CEMES, Université de Toulouse, CNRS-UPR 8011, UPS, 29 rue Jeanne-Marvig, F-31055 Toulouse, France, Dr. M. Hervé, Prof. W. Wulfhekel Physikalisches Institut, Karlsruhe Institute of Technology, Wolfgang-Gaede-Str. 1, 76131 Karlsruhe, Germany Dr. C-H. Lambert, Dr. A. Hamadeh Institut Jean Lamour UMR 7198 CNRS, Université de Lorraine, BP 70239, 54506 Vandoeuvre les Nancy Cedex, France Dr. Olivia Mauguin, Dr. Ludovic Largeau CNRS - C2N / Site de Marcoussis, Route de Nozay, 91460 Marcoussis, France.

11:30 **First-principles modeling of organic thermoeletric materials** — C 10.4
Zhigang Shuai, Dong Wang, Wen Shi, Yajing Sun
MOE Key Laboratory of Organic Opto-Electronics and Molecular Engineering, Department of Chemistry, Tsinghua University, 100084 Beijing, China

12:00 **Lunch**

Interlayers and Electrodes : Jianpu WANG

14:00 **Non-conjugated organic small molecule buffer materials for high performance organic solar cells** — C 11.1
Junfeng Fang*, Xiaodong Li
Ningbo Institute of Materials and Technology and Engineering, Chinese Academy of Sciences, Ningbo, 315201, China

14:30 **Solution Processed Reduced Graphene Oxide Micro-mesh Electrode decorated with metal nano-particles for OPVs** — C 11.2
K. Petridis, D. Konios, M. Sygletou, K. Savva, G. Kakavelakis, E. Stratakis and E. Kymakis
K.Petridis (1,2), D. Konios (1), M. Sygletou (3), K. Savva (3), G. Kakavelakis (1,4), E.Stratakis (3) and E. Kymakis (1,5) 1. Center of Materials Technology and Photonics of Technological Educational Institute of Crete, 71104, Crete, Greece 2. Department of Electronic Engineering Technological Educational Institute of Crete, 73132, Crete, Greece 3. Institute of Electronic Structure and Laser Foundation for Research and Technology - Hellas, Heraklion, 71110, Crete, Greece 4. Department of Materials Science and Technology, University of Crete, Vassilika Voutes GR-700 13 Heraklion, Greece 5. Department of Electrical Engineering, Technological Educational Institute of Crete, Heraklion, 71104, Greece

14:45 **The impact of electrodes on recombination in organic solar cells** — C 11.3
Azadeh Rahimi Chatri, Vincent M. Le Corre, L. Jan Anton Koster
Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG, Groningen, The Netherlands

15:00 **Selectivity of Electrodes in Organic Solar Cells probed by Temperature and Intensity Dependence of the Open-Circuit Voltage** — C 11.4
Uli WÜRFEL1,2, Mathias LIST1, Patrick REISER1, Annika SPIES1
1) Fraunhofer Institute for Solar Energy Systems ISE Heidenhofstr. 2, 79110 Freiburg, Germany, 2) Freiburg Materials Research Center FMF, Albert-Ludwigs-University Freiburg, Germany

15:15 **Toward High-efficient Bulk Heterojunction Solar Cells using new Hybrid Materials as Interfacial Layer** — C 11.5
Donia Fredj (1), Sadok Ben Dkhil (2), Christine Videlot-Ackermann (2) , Olivier Margeat (2) , Jörg Ackermann (2) Tahar Mhiri (1), Mohamed Boujelbene (1)
(1) Laboratoire Physico-Chimie de l'Etat Solide, LR11 ES51, Faculté des Sciences de Sfax, Université de Sfax, BP 3071 Sfax, Tunisie, (2) Aix-Marseille University, Centre Interdisciplinaire de Nanosciences de Marseille CINaM, UMR CNRS 7325, Marseille

15:30 **Coffee Break**

Photophysics and Device Physics (IV) : Anna KOEHLER

16:00 **Molecular and microstructural factors influencing the open-circuit voltage of organic photovoltaics** — C 12.1
Koen Vandewal
Dresden Integrated Center for Applied Physics and Photonic Materials (IAPP), Technische Universität Dresden, Nöthnitzer Str. 61, 01187 Dresden, Germany

16:30 **Understanding Mott-Schottky Measurements under Illumination in Organic Bulk Heterojunction Solar Cells** — C 12.2
Irene Zonno, Alberto Martinez-Otero, Jan-Christoph Hebig, Thomas Kirchartz
IEK5-Photovoltaik, Forschungszentrum Jülich, 52425 Jülich, Germany, Faculty of Engineering and CENIDE, University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany

16:45 **Luminescence Spectroscopy and Thin-Film Interference Effects in Organic Solar Cells** — C 12.3
Mathias List, Yvonne Jeneke Reinhardt, Uli Würfel
Fraunhofer Institute for Solar Energy Research, Heidenhofstr. 2, 79110 Freiburg, Germany. Freiburg Material Research Center FMF, Stefan-Meier-Str. 21, 79104 Freiburg, Germany.

17:00 **Charge Generation in OPV Blends Investigated by Ultrafast Spectroscopy** — C 12.4
Natalie Banerji
Department of Chemistry, University of Fribourg, Chemin du Musée 9, CH-1700 Fribourg, Switzerland.

17:30 **Break**

Poster (II) : Feng GAO, Jan Anton KOSTER, Natalie STINGELIN, and Thuc-Quyen NGUYEN

18:00 **Study of charge carriers' transport in organic solar cells by illumination area shifting** — C 13.1
Mihaela GIRTAN
LPHIA, UBL - Angers University, 2.Bd. Lavoisier, 49045, France, mihaela.girtan@univ-angers.fr

18:00 **Characterization of highly conjugated meso-thiophenylethynyl porphyrins for organic photovolatic materials** — C 13.2
Youngho Park, Sangdeok Shim*
Department of Chemistry, Sunchon National University, Sunchon, Korea

18:00 **Synthesis of Highly Conductive PEDOT:PSS Colloidal Gels and Application to Hybrid Solar Cells** — C 13.3
Naoya Katsuyama,Hidenori Okuzaki
Graduate Faculty of Interdisciplinary, University of Yamanashi

18:00 **Mapping the density of states of pentacene using field effect studies** — C 13.4
Sanjoy Jena, Debdutta Ray
Department of Electrical Engineering, Indian Institute of Technology Madras, Chennai 600036, India

18:00 **Large-area imaging of film thickness and composition in OPV blends by Raman scattering** — C 13.5
Xabier Rodríguez-Martínez, Michelle S. Vezie, Jenny Nelson, Alejandro R. Goñi, Mariano Campoy-Quiles
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Esfera UAB, Bellaterra, 08193, Spain, Department of Physics and Centre for Plastic Electronics, Imperial College London, Prince Consort Road, London, SW7 2BW, U.K., Department of Physics and Centre for Plastic Electronics, Imperial College London, Prince Consort Road, London, SW7 2BW, U.K., Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Esfera UAB, Bellaterra, 08193, Spain, Institució Catalana de Recerca I Estudis Avançats (ICREA), Passeig Lluis Companys 23, Barcelona, 08010, Spain, Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Esfera UAB, Bellaterra, 08193, Spain

18:00 **Efficient and Versatile Interconnection Layer by Solvent Treatment of PEDOT:PSS for Air-Processed Organic Tandem Solar Cells** — C 13.6
Mario Prosa, Marta Tessarolo, Margherita Bolognesi, Tobias Cramer, Zhihua Chen, Antonio Facchetti, Beatrice Fraboni, Mirko Seri, Giampiero Ruani, Michele Muccini
M. Prosa, M. Bolognesi, G. Ruani, M. Muccini: Consiglio Nazionale delle Ricerche (CNR) - Istituto per lo Studio dei Materiali Nanostrutturati (ISMN), Via P. Gobetti 101, 40129 Bologna, Italy, M. Tessarolo: Interdepartmental Centre for Industrial Research - Advanced Mechanics and Materials (CIRI-MAM), University of Bologna, Viale Risorgimento 2, 40136 Bologna, Italy, T. Cramer, B. Fraboni: Department of Physics and Astronomy, University of Bologna, Viale Berti Pichat 6/2, 40127 Bologna, Italy, Z. Chen, A. Facchetti: Polyera Corporation, 8045 Lamon Avenue, Skokie, IL 60077, USA, M. Seri: Consiglio Nazionale delle Ricerche (CNR) - Istituto per la Sintesi Organica e la Fotoreattività (ISOF), Via P. Gobetti 101, 40129 Bologna, Italy,

18:00 **Efficient Organic Photovoltaics with Improved Charge Extraction Using Zinc Oxide as Buffer Layer** — C 13.7
Minu Mohan, Vikas Nandal, P Sanish, Kasala Prabhakar Reddy, S Ramkumar, Sumanshu Agarwal, Chinnakonda S Gopinath, Pradeep R Nair, and Manoj A G Namboothiry
Minu Mohan, P Sanish, S Ramkumar, Manoj A G Namboothiry - School of Physics, Indian Institute of Science Education and Research Thiruvananthapuram (IISER TVM) CET campus, Engineering College P. O., Thiruvananthapuram, Kerala 695016, India. Vikas Nandal, Sumanshu Agarwal, Pradeep R Nair - Department of Electrical Engineering, Indian Institute of Technology, Bombay Powai, Mumbai 400076, India Kasala Prabhakar Reddy, Chinnakonda S Gopinath - Catalysis Division, National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411 008, India

18:00 **Porous Polymeric Networks for Organic Photovoltaics** — C 13.8
Hakan Bildirir, Vasilis G. Gregoriou, Christos L. Chochos
Hakan Bildirir (bildirir@advent-energy.com), Vasilis G. Gregoriou (vgregoriou@advent-energy.com), Christos L. Chochos (cchochos@advent-energy.com) Advent Technologies SA, Patras Science Park, Stadiou Street, Platani-Rio, 26504, Patra, Greece Vasilis G. Gregoriou National Hellenic Research Foundation (NHRF), 48 Vassileos Constantinou Avenue, Athens 11635, Greece Christos L. Chochos Department of Materials Science Engineering, University of Ioannina, Ioannina 45110, Greece

18:00 **The Influence of Contact Selectivity and Transport Properties on the Performance of Organic Solar Cells** — C 13.9
Annika Spies1,2, Mathias List1,2, Tanmoy Sarkar1, Uli Würfel1,2
1) Fraunhofer Institute for Solar Energy Systems ISE, Heidenhofstr. 2, 79110 Freiburg, Germany. 2) Freiburg Materials Research Center FMF, Stefan-Meier-Str. 21, 79104 Freiburg, Germany.

18:00 **AZO/ZnO nanorods electrode in perovskite solar cells** — C 13.10
V. La Ferrara, A. De Maria, G. Rametta, L.V. Mercaldo, A. Bruno and P. Delli Veneri
ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development– Portici Research Center, P. E. Fermi, 1- 80055 Portici (Italy)

18:00 **Stepwise evolution of layer stacking within host crystals upon internal pressure of vapor guests and anchoring effect of side-ch** — C 13.11
Bei-Kai Young, Chen-An Wang, Wen-Yan Zhang, Jrjeng Ruan*
Department of Materials Science and Engineering, National Cheng Kung University, Tainan 701, Taiwan.

18:00 **Series Resistance in Polymer Bulk Heterojunction Solar Cells Studied by Impedance Spectroscopy** — C 13.12
M. Sendova-Vassileva, G. Popkirov, R. Gergova, G. Grancharov, V. Gancheva
Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee, 1784 Sofia, Bulgaria, Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee, 1784 Sofia, Bulgaria, Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee, 1784 Sofia, Bulgaria, Laboratory of Structure and Properties of Polymers, Institute of Polymers, Bulgarian Academy of Sciences, Acad. G. Bonchev St., Block 103-A, 1113 Sofia, Bulgaria, Laboratory of Structure and Properties of Polymers, Institute of Polymers, Bulgarian Academy of Sciences, Acad. G. Bonchev St., Block 103-A, 1113 Sofia, Bulgaria

18:00 **Design of novel triphenylamine-based donor-acceptor oligomers for stable organic photovoltaics** — C 13.13
S.A. Ponomarenko, Y.N. Luponosov, A.N. Solodukhin, A.L. Mannanov, O.V. Kozlov, D.Y. Paraschuk, M.S. Pschenichnikov, C.J. Brabec
Enikolopov Institute of Synthetic Polymer Materials of Russian Academy of Sciences (ISPM RAS), Moscow, Russia, Moscow State University, Chemistry Department, Moscow Russia, Faculty of Physics & International Laser Center, Lomonosov Moscow State University, Moscow, Russia, Zernike Institute for Advanced Materials, University of Groningen, The Netherlands, Institute of Materials for Electronics and Energy Technology (I-MEET), Friedrich-Alexander-University Erlangen-Nuremberg, Germany

18:00 **Influence of fluorine atoms and alkyl side-chains on the orientation of highly efficient photovoltaic fluorinated polymers** — C 13.14
O. Ibraikulov [1], S. Fall [1], P. Chávez [2], C. Ngov [2], O. Boyron [3], B. Heinrich [4], S. Méry [4], T. Heiser [1], N. Leclerc [2], P. Lévêque [1]
[1] Université de Strasbourg, CNRS, ENGEES, INSA, ICube UMR 7357, F-67000 Strasbourg, France, [2] Université de Strasbourg, CNRS, ICPEES UMR 7515, F-67000 Strasbourg, France, [3] Université de Lyon, CNRS, C2P2 UMR 5265, F-69616 Villeurbanne, France, [4] Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France

18:00 **In situ spectroscopic ellipsometry for examining thin film growth in organic solar cells** — C 13.15
Sameer Vajjala Kesava, Moritz Riede
Department of Physics, University of Oxford

18:00 **Spectroscopic ellipsometry - An insight in the optical properties of pristine/doped polymers** — C 13.16
Jacek Gasiorowski (1,2), Christoph Cobet (1), Josef Humlicek (3,4), Kurt Hingerl (1)
(1) Center for Surface and Nanoanalytics, Johnnes Kepler University in Linz, Altenbergerstrasse 69, 4040 Linz, Austria (2) EV Group E.Thallner GmbH, DI Erich Thallner Str. 1, 4782 St. Florian am Inn, Austria (3) Central European Institute of Technology, Brno, Czech Republic (4) Physics Department, Solid State Physics, Masaryk University Brno, Czech Republic

18:00 **Photovoltaic characterization of PBDTTPD synthesized via direct arylation polymerization: comparison to PBDTTPD prepared via Sti** — C 13.17
F. Carulli, G. Marzano, F. Babudri, A. Pellegrino, R. Po, G.M. Farinola and Silvia Luzzati
F. Carulli, Silvia Luzzati - Consiglio Nazionale delle Ricerche, CNR, Istituto per lo Studio delle Macromolecole, ISMAC, via Corti 12, 20133 Milan, Italy, G. Marzano, F. Babudri, G.M. Farinola - Dipartimento di Chimica, Universita degli Studi di Bari Aldo Moro, Via Orabona 4, 70125 Bari, Italy, A. Pellegrino, R. Po - Centro Ricerche per le Energie Rinnovabili e l'Ambiente, Istituto Eni Donegani, Eni SpA, Via Fauser 4, 28100 Novara, Italy.

18:00 **Efficient Solar Cells Incorporating DNA and Metal Oxide-DNA Composite Electron Extraction Layers** **C 13.18**
Janardan Dagar 1,* Guido Scavia3, Manuela Scarselli2, Silvia Destri3, Maurizio De Crescenzi2, and Thomas M. Brown1
1 CHOSE (Centre for Hybrid and Organic Solar Energy), Department of Electronic Engineering, University of Rome Tor Vergata, Via del Politecnico 1, 00133 Rome, Italy, 2 Department of Physics, University of Rome Tor Vergata, Via della Ricerca Scientifica 1, 00133 Rome, Italy, 3 CNR – ISMAC (Istituto per lo Studio delle Macromolecole) via Corti 12, 20133 Milan Italy

18:00 **Improvement of organic solar cells through Au nanoparticles implanted into PEDOT:PSS layer** **C 13.19**
D. Brenes-Badilla(2), D. J. Coutinho(3), D. R. B. Amorim(1), M. C. Salvadori(2), and R. M. Faria(1)
(1) São Carlos Institute of Physics, University of São Paulo (2) Institute of Physics, University of São Paulo (3) Federal Technological University of Parana

18:00 **Accelerated lifetime test on Organic Solar Cells using ISOS-D-2 protocol (high temperature storage)** **C 13.20**
Julio Cesar Madureira Silva, Augusto Cesar da Silva Bezerra, Claudinei Rezende Calado
Instituto Federal do Espírito Santo - IFES, Centro Federal de Educação Tecnológica de Minas Gerais - CEFET MG, Centro Federal de Educação Tecnológica de Minas Gerais - CEFET MG

18:00 **Oxide catalysts for electrocatalytic reduction of oxalic acid toward efficient power storage** **C 13.21**
Miho Yamauchi, Rhota Watanabe, Shinichi Hata, Sho Kitano, Masaaki Sadakiyo
International Institute for Carbon-Neutral Energy Research (WPI-2CNER), Kyushu University

18:00 **Surface Plasmonic effects of gold nanoparticles on organic solar cell performance: synthesis and characterization** **C 13.22**
Nada Benhaddou 1,2, Ikram Anefnaf 1,2, Safae Aazou 1, M. Abd-lefdil 2, Zouheir Sekkat 1,2
1 Optics & Photonics Center, MAScIR-Rabat, Morocco, 2 Department of chemistry, Faculty of sciences,University Mohammed V-Rabat, Morocco,

18:00 **Ultra-fast excited-state isomerization of a small-molecule oligothiophene for organic solar cells** **C 13.23**
A. Guarnaccio (a), A. Santagata (a), D. Catone (b), P. O'Keeffe (c), G. Mattioli (c), M. D'Auria (d), P. Loukakos (e)
(a) CNR-ISM, FLASH-IT Unit of Tito Scalo - C/da S. Loja, 85050 Tito Scalo (PZ), ITALY (b) CNR-ISM, FLASH-IT Via del Fosso del Cavaliere, 100 - 00133 Roma. (c) CNR-ISM, FLASH-IT Unit of Monterotondo - via Salaria Km 29,300 - C.P. 10 I 00015 - Monterotondo Stazione (RM), ITALY (d) Dipartimento di Scienze, Università della Basilicata, Viale dell'Ateneo Lucano 10, 85100 Potenza, ITALY (e) Institute of Electronic Structure and Laser-IESL, Foundation for Research and Technology Hellas – FORTH, 71110 Heraklion, Greece

18:00 **Al dopant concentrations effects in AZO buffer layer on the efficiency of P3HT:PCBM based inverted solar cell** **C 13.24**
W. Qandar 1,2, Z. Laghfour 1,2, S. Aazou 1, M. Abd-Lefdil 2, M. Regragui 2, Z. Sekkat 1,2,
1 Optics & Photonics Centre, MAScIR, Rabat, Morocco, 2 Faculty of Sciences - University Mohammed V, Rabat, Morocco,

18:00 **Effect of Interchain Ordering on Electronic States and Photovoltaic Performance in Conjugated Polymer Blend based Organic Solar** **C 13.25**
Naresh CHANDRASEKARAN, Elliot GANN, Nakul JAIN, Aditya SADHANALA, Anil KUMAR, Richard H.FRIEND, Chris MCNEILL, Dinesh KABRA.
IITB-Monash Research Academy, IIT Bombay, Mumbai, India. Dept. of Materials Science and Engineering, Monash University, Australia. Dept. of Physics, IIT Bombay, Mumbai, India., Australian Synchrotron, Melbourne, Australia, Dept. of Physics, IIT Bombay, Mumbai, India., Cavendish Laboratory, University of Cambridge, Cambridge CB3 0HE, U.K., Dept. of Chemistry, IIT Bombay, Mumbai, India, Cavendish Laboratory, University of Cambridge, Cambridge CB3 0HE, U.K., Dept. of Materials Science and Engineering, Monash University, Australia., Dept. of Physics, IIT Bombay, Mumbai, India.

18:00 **Adhesion optimization within organic photovoltaic devices and its influence along encapsulation and ageing** **C 13.26**
Sacha Juillard a,b,c,d, Emilie Planès a,b,c, Muriel Matheron b,d, Solenn Berson b,d, Lionel Flandin a,b,c
a Université Savoie Mont Blanc, LEPMI, F-73000 Chambéry Cedex b Univ. Grenoble Alpes, INES, F-73375 Le Bourget du Lac, France c CNRS, LEPMI, F-38000 Grenoble Cedex d CEA, LITEN, Department of Solar Technologies, F-73375 Le Bourget du Lac, France

18:00 **Unique Photophysical Properties of Some Organic Dyes Deposited on the Gilded Substrate** **C 13.27**
V.M. Yashchuk1*, A.P. Naumenko1, N.A. Davidenko1, V.Yu. Kudrya1, K.P. Grytsenko2, Yu.L. Slominskii3
1Taras Shevchenko National University of Kyiv, 64/13, Volodymyrska Street, Kyiv, 01601,Ukraine 2V. Lashkaryov Institute of Semiconductors Physics NASU, 41, Nauky avn., Kyiv, 03028, Ukraine 3Institute of Organic Chemistry NASU, 5, Murmanska Street, Kyiv, 02660, Ukraine

18:00 **A Microscopic View on the Properties of Organic Electronics by Means of Spectroscopic Imaging Ellipsometry** **C 13.28**
Peter H. Thiesen, Christian Röling, Matthias Duwe
Accurion GmbH, Stresemannstr. 30, D-37079, Göttingen

18:00 **Performance enhancement of organic solar cell by incorporating ZnO nanoparticles** **C 13.29**
I. Anefnaf 1,2, N. Benhaddou1,2, S. Aazou1, M. Abd-Lefdil 3, Z. Sekkat 1,2
1Optics & Photonics Center, Moroccan Foundation for Advanced Science, Innovation and Research, Rabat, Morocco, 2 Laboratory of Materials, Nanotechnology and Environment, Department of Chemistry, Faculty of Sciences, University Mohamed V, Rabat, Morocco, 3 Laboratory of material physics, Faculty of Sciences, University Mohammed V, Rabat,Morocco,

18:00 **On the photovoltaic response of new biologic/polymeric thin films based structures** **C 13.30**
B. Bita1, Sorina Iftimie1, A. Radu1, Doina Gazdaru1, Diana Coman1, L. Ion1, S. Antohe1,2
1University of Bucharest, Faculty of Physics, Bucharest, Romania, 2Academy of Romanian Scientists, Bucharest, Romania

18:00 **Organic luminescent transformer for silicon solar cells** **C 13.31**
Volodymyr Azovskyi, Valeriy Yashchuk, Vitaliy Kosach, Volodymyr Lytovchenko, Vitaliy Kostyliev, Pavlo Stakhira
Volodymyr Azovskyi - PhD student at Taras Shevchenko National University of Kyiv, Verkhovna Rada of Ukraine's Committee on Fuel and Energy Complex, Nuclear Policy and Nuclear Safety / Valeriy Yashchuk - prof. at Taras Shevchenko National University of Kyiv / Vitaliy Kosach - Taras Shevchenko National University of Kyiv / Volodymyr Lytovchenko - V.E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine / Vitaliy Kostyliev - V.E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine / Pavlo Stakhira - Lviv Polytechnic National University

18:00 **Interfacial degradation in organic solar cells** **C 13.32**
A. Tournebize, G. Mattana, T. Gorisse, G. Wantz, L. Hirsh, S. Chambon
A. Tournebize, T. Gorisse, G. Wantz, L. Hirsh, S. Chambon University of Bordeaux, CNRS, Bordeaux INP, IMS, UMR 5218, F-33405 Talence, France G. Mattana Univ. Paris Diderot, Sorbonne Paris Cité, ITODYS, UMR 7086 CNRS, 15 rue J-A de Baïf, 75205 Paris Cedex 13, France

18:00 **Inverted All-polymer Solar Cells Based on a Quinoxaline-thiophene/Naphtalene-imide Polymer Blend Improved by Annealing** **C 13.33**
Yuxin Xia, Chiara Musumeci, Jonas Bergqvist, Wei Ma, Feng Gao, Zheng Tang, Sai Bai, Yizheng Jin, Chenhui Zhu, Renee Kroon, Cheng Wang, Mats R. Andersson, Lintao Hou, Olle Inganäs* and Ergang Wang*
Y. Xia, Dr. C. Musumeci, J. Bergqvist, Dr. F. Gao, Dr. Z. Tang, Dr. S. Bai, Prof. O. Inganäs Biomolecular and Organic Electronics, IFM, Linköping University, SE-581 83, Linköping, Sweden. E-mail: oling@ifm.liu.se Prof. M. R. Andersson, Dr. E. Wang Department of Chemistry and Chemical Engineering, Chalmers University of Technology, SE-412 96 Göteborg, Sweden E-mail: ergang@chalmers.se Dr. L. Hou Siyuan Laboratory, Department of Physics, Jinan University, Guangzhou 510632, China E-mail: thlt@jnu.edu.cn W. Ma, State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China E-Mail: msewma@mail.xjtu.edu.cn C. Zhu, Dr. C. Wang, Advanced Light Source Laurence Berkeley National Laboratory Berkeley, California 94720, USA E-mail: ChenhuiZhu@lbl.gov, cwang2@lbl.gov Prof. Y. Jin State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, P. R. China E-mail: yizhengjin@zju.edu.cn Dr. R. Kroon, Prof. M. R. Andersson Ian Wark Research Institute, University of South Australia, Mawson Lakes, South Australia 5095, Australia E-mail: renee.kroon@unisa.edu.au, mats.andersson@chalmers.se

18:00 **NEW APPROACH FOR THE STABILIZATION OF OPTOELECTRONIC DEVICES USING SOL-GEL PROCESS** **C 13.34**
T. Tjoutis(a), O. J. Dautel (a), G. Wantz (b), J. J. E. Moreau (a)
(a) Architectures Moléculaires et Matériaux Nanostructurés, Institut Charles Gerhardt, UMR 5253, Ecole Nationale Supérieure de Chimie de Montpellier, 8 rue de l'Ecole Normale, 34296 Montpellier Cedex 05, France (b) Laboratoire d'Intégration du Matériau au Système (IMS), UMR 5218, Université de Bordeaux, Ecole Nationale Supérieure de Chimie et de Physique de Bordeaux, 16 Av. Pey Berland 33607 Pessac Cedex, France

18:00 **Novel method for extraction of built-in potential from dark current density-voltage characteristics of organic solar cells** **C 13.35**
Prashanth Kumar M, Saranya R, Soumya Dutta
Department of Electrical Engineering, Indian Institute of Technology Madras, Chennai 600036, India

18:00 **Rational Engineering of BODIPY-bridged-Trisindole derivatives for Solar Cell Applications** **C 13.36**
I. Bulut [1], Q. Huaulmé [1], A. Mirloup [1], P. Chavez [1], S. Fall [2], A. Hébraud [1], S. Méry [3], B. Heinrich [3], T. Heiser [2], P. Lévêque [2], N. Leclerc [1]
[1] Université de Strasbourg, CNRS, ICPEES UMR 7515, F-67000 Strasbourg, France, [2] Université de Strasbourg, CNRS, ENGEES, INSA, ICube UMR 7357, F-67000 Strasbourg, France, [3] Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France

18:00 **Dumbbell-shaped donor molecules based on zinc phthalocyanine platforms for BHJ solar cell** **C 13.37**
S. Marzouk(1,3), B. Heinrich(1), N. Leclerc(2), J. Khiari(3), S. Méry(1)
(1) Institut de Physique et de Chimie des Matériaux de Strasbourg (IPCMS), CNRS, Université de Strasbourg, 23 rue du Loess, 67034 Strasbourg, France (2) Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé (ICPEES), CNRS, Université de Strasbourg, ECPM, 25 rue Becquerel, 67087 Strasbourg, France (3) Laboratoire de Chimie organique et Analytique, Institut Supérieur de l'Education et de la Formation Continue (ISEFC), 2000 Bardo, Université de Tunis El Manar, Tunisie

18:00 **Microscopic pathways to photo-carrier generation in pentacene field effect transistors** **C 13.38**
Haripriya.V.K, Sanjoy Jena, Debdutta Ray
Department of Electrical Engineering, Indian Institute of Technology Madras, Chennai 600036, INDIA

18:00 **Project TranspEnergy: towards organic solar modules with pre-designed colour and transparency** **C 13.39**
Marco Stella
Eurecat

18:00 **Light-induced degradation of polymer-fullerene based organic solar cells** **C 13.40**
Yuming Wang, Feng Gao, Jianpu Wang
Key Laboratory of Flexible Electronics (KLOFE) and Institute of Advanced Materials (IAM), National Synergistic Innovation Centre for Advanced Materials (SICAM), Nanjing Tech University, 30 South Puzhu Road, Nanjing 211816, China, Biomolecular and Organic Electronics, IFM, Linköping University, Linköping 58183, Sweden

18:00 **Novel 5,6-bis(octyloxy)-2,1,3 benzooxadiazole based donor–acceptor random copolymer for efficient organic photovoltaic devices** **C 13.41**
Seza Goker, Gonul Hizalan, Yasemin Arslan Udum, Levent Toppare
Department of Chemistry, Middle East Technical University, 06800 Ankara, Turkey Department of Polymer Science and Technology, Middle East Technical University, 06800 Ankara, Turkey Graduate School of Natural and Applied Sciences, Gazi University Department of Biotechnology, Middle East Technical University, 06800 Ankara, Turkey The Center for Solar Energy Research and Application (GUNAM), Middle East Technical University, 06800 Ankara, Turkey

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM D

Next generation of earth-abundant materials for solar energy

Symposium Organizers :

Adele TAMBOLI, National Renewable Energy Lab, Golden, USA

David SCANLON, University College London, U.K.

Geoffroy HAUTIER, Université Catholique de Louvain, Belgium

Patrice MISKA, University of Lorraine, Vandoeuvre-les-Nancy, France

Monday 22 May 2017

Emerging materials in photovoltaics (1) : Susanne Siebentritt

09:30 **Emerging materials for solar energy: matlockite, kesterite, perovskite and beyond…** **D 1.1**
Aron Walsh
Department of Materials, Imperial College London, UK

10:00 **Polarons in CH3NH3.PBI3: formation, transport and recombination** **D 1.2**
Jarvist Moore Frost [1], Lucy Whalley [1], Jonathan Skelton [2], Pooya Azarhoosh [3], Scott McKechnie [3], Mark van Schilfgaarde [3], Aron Walsh [1]
[1] Imperial College London, UK. [2] University of Bath, UK. [3] King's College London, UK.

10:15 **Theoretical Investigation of the PbS-Bi2S3 series for optoelectronic applications** **D 1.3**
Christopher N. Savory(1), David O. Scanlon(1,2)
(1) University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK, (2) Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK

10:30 **Non-toxic and earth-abundant V-VI-VII semiconductors for solar cells** **D 1.4**
Alex M. Ganose (1,2), Keith T. Butler (3), Scott McKechnie (4), Pooya Azarhoosh (4), Jarvist Moore Frost (5), Mark van Schilfgaarde (3), Aron Walsh (5,6), and David O. Scanlon (1,2)
(1) University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK, (2) Diamond Light Source Ltd., Harwell Science and Innovation Campus, Didcot OX11 0DE, UK, (3) Centre for Sustainable Chemical Technologies and Department of Chemistry, University of Bath, Claverton Down, Bath BA2 7AY, UK, (4) Department of Physics, Kings College London, London WC2R 2LS, UK, (5) Department of Materials, Imperial College London, Exhibition Road, London SW7 2AZ, UK, (6) Global E3 Institute and Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, South Korea

10:45 **Coffee Break**

Kesterites for photovoltaics : Igor Shvets

11:15 **Tails in kesterite** **D 2.1**
Suzanne Siebentritt
University of Luxembourg, Laboratory for photovoltaics - 41, rue du Brill, L-4422 Belvaux

11:45 **Why Cu2ZnSnS4 solar cells are still limited by interface recombination even with a buffer layer with optimal band alignment** **D 2.2**
Andrea Crovetto [1], Mattias Palsgaard [1,2], Tue Gunst [1], Troels Markussen [2], Kurt Stokbro [2], Mads Brandbyge [1], Ole Hansen [1]
[1] DTU Nanotech, Technical University of Denmark, [2] QuantumWise A/S, Copenhagen, Denmark,

12:00 **The effect of Ag alloying on the material properties of the kesterite ACZTSSe solar cells** **D 2.3**
Wei-Chih Huang, Shih-Yuan Wei, Chung-Hao Cai, Chih-Huang Lai
Department of Materials Science and Engineering, National Tsing Hua University

12:15 **First principles investigation of the structural,dynamical, dielectric properties of kesterite, stannite and PMCA phases of CZTS** **D 2.4**
Sriram Poyyapakkam Ramkumar, Yannick Gillet, Anna Miglio, Michiel J. van Setten, Xavier Gonze, and Gian-Marco Rignanese
IMCN-NAPS, Université catholique de Louvain, Chemin des Étoiles 8, B-1348 Louvain-la-Neuve, Belgium and European Theoretical Spectroscopy Facility (ETSF)

12:30 **Lunch**

Emerging materials in photovoltaics (2) : Aron Walsh

14:00 **Thermochromic vanadium dioxide thin film as a smart absorbent layer for solar collectors** **D 3.1**
A. Didelot1, 2, F. Capon1, J.F. Pierson1, P. Miska1, S. Bruyère1, D. Mercs2, N. Portha2
1 Institut Jean Lamour, Université de Lorraine, CNRS, Nancy, France 2 Viessmann, Faulquemont, France

14:30 **Nanoscale KPFM Chacaterization of CZTSe Thin Films and its Related Binary Secondary phases** **D 3.2**
Manoj Vishwakarma, Deepak Varandani, and Bodh R. Mehta*
Thin Film Lab, Department of Physics, IIT Delhi New Delhi, Delhi, India-110016

14:45 **Investigation of growth and electrical properties of Copper Bismuth Sulfide thin films as a novel photovoltaic material** **D 3.3**
Yunong Liu#, Zhitao Yang#, Longfei Li, Yanbo Yang, Yuan He, Xiaolu Xiong, Dongyun Chen, Junfeng Han*
School of Physics, Beijing Institute of Technology, Beijing, 100081, China

15:00 **Electronic properties of large grain MAPbI3 perovskite films fabricated via methylamine gas healing** **D 3.4**
Carola Ebenhoch, Tobias Seewald, Eugen Zimmermann, Kevin Wong, Philipp Ehrenreich, Lukas Schmidt-Mende
University of Konstanz Department of Physics 78457 Konstanz Germany

15:15 **Coffee Break**

Transparent conducting oxides : Patrice Miska

15:45 **Chromium oxide based p-type transparent conducting oxides** **D 4.1**
Leo Farrell, Emma Norton, Daragh Mullarkey, David Caffrey, Elisabetta Arca, Karsten Fleischer, and Igor V. Shvets*
School of Physics and CRANN, Trinity College Dublin, University of Dublin, Ireland

16:15 **Structural design principles for low hole effective mass s-based p-type Transparent Conducting Oxides** **D 4.2**
Viet-Anh Ha, Francesco Ricci, Gian-Marco Rignanese, Geoffroy Hautier
Institute of Condensed Matter and Nanoscience (IMCN), Université catholique de Louvain, Chemin Etoiles 8, bte L7.03.01, Louvain-la-Neuve 1348, Belgium

16:30 **Defect Engineering Through Thermal Treatment in Non-Stoichiometric CuCrO2 Delafossite Thin Films Grown by Chemical Vapor Deposit** **D 4.3**
Petru LUNCA POPA, Renaud LETURCQ, Jonathan Crêpellière and Damien LENOBLE
Luxembourg Institute of Science and Technology (LIST) Materials Research and Technology (MRT) Department 41 rue du Brill,L-4422 Belvaux LUXEMBOURG

16:45 **Developing a p-type semiconducting oxide: defect engineering in LaCrO3** **D 4.4**
Ailbhe L. Gavin, Graeme W. Watson
School of Chemistry and CRANN, Trinity College Dublin, The University of Dublin, College Green, Dublin 2, Ireland

Tuesday 23 May 2017

Nitrides and phosphides for photovoltaics : Lee Burton

09:30 **Growth and Characterization of Orthorhombic and Wurtzite ZnSnN2** **D 5.1**
Steven M. Durbin
Electrical and Computer Engineering, Western Michigan University, Kalamazoo, MI 49008 USA

10:00 **Zinc tin nitride (ZnSnN2): a new semiconductor material for photovoltaics applications** **D 5.2**
F. Alnjiman, S. Diliberto, J. Ghanbaja, P. Miska, J.F. Pierson
Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Nancy, France

10:15 **Development of ZnSiP2 as a Top-cell Material for Integration with Silicon Photovoltaics** **D 5.3**
Aaron D. Martinez, Elisa M. Miller, Andrew G. Norman, Paul Stradins, Eric S. Toberer, and Adele C. Tamboli
Colorado School of Mines, Golden CO, 80401, USA, National Renewable Energy Laboratory, Golden CO, 80401, USA

10:30 **Active materials and interfaces for stable perovskite solar cells** **D 5.4**
Antonio Abate
Helmholtz-Zentrum Berlin für Materialien und Energie GmbH

10:45 **Coffee Break**

Chalcogenides for photovoltaics (1) : Vladan Stevanovic

11:15 **DFT Analysis of 2-Dimensional Impurities in Sulfide Photovoltaics** **D 6.1**
Lee A. Burton, Yu Kumagai, Aron Walsh, Fumiyasu Oba
Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Chemin des Étoiles 8 bte L7.03.01 à 1348 Louvain-la-Neuve, Belgium, Materials Research Center for Element Strategy, Tokyo Institute of Technology, Yokohama 226-8503, Japan, Department of Materials, Imperial College London, Royal School of Mines, Exhibition Road, London SW7 2AZ, Laboratory for Materials and Structures, Tokyo Institute of Technology, 4259 R3-7 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan.

11:45 **The effect of dopants on grain growth and PL in CZTS nanoparticle thin films for solar cell applications** **D 6.2**
Sara Engberg, Andrea Crovetto, Ole Hansen, Jørgen Schou
DTU Fotonik, DTU Nanotech, DTU Nanotech, DTU Fotonik

12:00 **Chemical bath deposition of ZnMgO films as buffer layers for thin film photovoltaics** **D 6.3**
Nina Winkler [1,2] , Stefan Edinger [1], Wolfgang Kautek [2], Theodoros Dimopoulos [1]
[1] AIT Austrian Institute of Technology, Center for Energy, Photovoltaic Systems, Vienna, Austria, [2] University of Vienna, Faculty of Chemistry, Department of Physical Chemistry, Vienna, Austria

12:15 **New hybrid and all-inorganic metal halides for emerging «perovskite-inspired» solar cells** **D 6.4**
Sergey A. Adonin (1), Lyubov A. Frolova (2), Maxim Sokolov (1), Keith J. Stevenson (3), and Pavel A. Troshin (3),(2)*
(1) Nikolaev Institute of Inorganic Chemistry Siberian Branch of Russian Academy of Sciences, 3, Acad. Lavrentiev Ave., Novosibirsk, 630090, Russia (2) Institute for Problems of Chemical Physics of RAS, Semenov ave. 1, Chernogolovka, Moscow region, 142432, Russia. (3) Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, Nobel st. 3, Moscow, 143026, Russian Federation * troshin2003@inbox.ru

12:30 **Lunch**

Chalcogenides for photovoltaics (2) : Geoffroy Hautier

14:00 **11.5% CZTSSe devices spray coated from a water-ethanol ink: Current limitations and ways forward** **D 7.1**
Gilles Dennler
IMRA Europe, BP.213, 06904 Sophia Antipolis, France

14:30 **Doping of Cu2ZnSn(S, Se)4 Alloys with Si and Ge: First-Principles Analysis** **D 7.2**
Sergiy Zamulko1, Rongzhen Chen1,2, Clas Persson1-3,
1. Centre for Materials Science and Nanotechnology, University of Oslo, P. O. Box 1048 Blindern, NO-0316 Oslo, Norway 2. Department of Physics, University of Oslo, P.Box 1048 Blindern, NO–0316 Oslo, Norway. 3. Department of Materials Science and Engineering, Royal Institute of Technology, Stockholm, SE–100 44, Sweden

14:45 **Antimony selenide solar cells deposited by close space sublimation** **D 7.3**
L.J. Phillips and J.D Major
Stephenson Institute for Renewable Energy/Physics Department University of Liverpool Liverpool UK

15:00 **Formation mechanism of copper antimony sulfide nanoparticles in the hot injection synthesis** **D 7.4**
Fábio Baum, Tatiane Pretto, Marcos José Leite Santos
Postgraduate Program in Materials Science, UFRGS, Brazil, Institute of Chemistry, UFRGS, Brazil, Postgraduate Program in Materials Science, UFRGS, Brazil and Institute of Chemistry, UFRGS, Brazil

15:15 **Coffee Break**

Emerging materials in photovoltaics (3) : Steven Durbin

15:45 **Searching for defect-tolerant semiconductors** **D 8.1**
Vladan Stevanovic
Colorado School of Mines and National Renewable Energy Laboratory, Golden, CO, USA

16:15 **Sb2Se3 thin films and PV devices** **D 8.2**
P J Yates, J D Major, K Durose
Department of Physics / Stephenson Institute of Renewable Energy, University of Liverpool

16:30 **Can Pb-Free Halide Double Perovskites Support High-Efficiency Solar Cells?** **D 8.3**
Christopher N. Savory(1), Aron Walsh(2,3), David O. Scanlon(1,4)
(1) University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK, (2) Department of Materials, Imperial College London, Royal School of Mines, Exhibition Road, London SW7 2AZ, UK, (3) Global E3 Institute and Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea, (4) Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK

16:45 **Modelling New Absorbers Materials for More Efficient Solar Energy Use** **D 8.4**
P. Wahnon(a,b), P. Palacios(a, c), G. Garcia(a,b), A. Montero-Alejo(d), E. Menéndez-Proupin(d), JC Conesa(e)
(a) Instituto de Energía Solar, Universidad Politécnica de Madrid, 28040 Madrid, Spain (b) Dpt. TFB, Universidad Politécnica de Madrid, ETSI Telecomunicación,280240 Madrid, Spain (c) Dpt. FAIAN, Universidad Politécnica de Madrid, ETSI Aeronáutica y del Espacio, 28040 Madrid, Spain (d) Dpt.de Física,Universidad de Chile, 780-0003 Ñuñoa, Santiago, Chile (e) Instituto de Catálisis y Petroleoquímica, CSIC, Marie Curie 2, Cantoblanco, 28049 Madrid, Spain

Poster session : N/A

17:00 **Photonic Sintering of ZnO Nanosheet Photoanode using Flash White Light combined with Deep-UV Irradiation for Dye-Sensitized Sola** **D 8.5**
Supriya A. Patil, Hak-Sung Kim,*
Department of Mechanical Engineering, Hanyang University, Haengdang-dong, Seongdong-gu, Seoul 133-791, South Korea. Institute of Nano Science and Technology, Hanyang University, Seoul, 133-79, Korea .

17:00 **Highly flexible ITO anode on CPI substrate for high-performance flexible perovskite solar cells** **D 8.6**
Jeong-Il Park and Han-Ki Kim
Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, 1 Seocheon-dong, Yongin-si, Gyeonggi-do 446-701, Republic of Korea

17:00 **Morphology-directed selective production of ethylene or ethane from Cu mesopore electrode** **D 8.7**
Ki Dong Yang, Ki Tae Nam
Department of Materials Science and Engineering, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul, 08826, Korea

17:00 **Effect of Si doping on electrical and optical properties of Cu2ZnSnS4 thin films grown via sputtering** **D 8.8**
Huafei Guo, Changhao Ma, Yan Li, Zhihui Chen, Ningyi Yuan, Jianning Ding
Huafei Guo(Changzhou University, Changzhou, Jiangsu, China), Changhao Ma((Changzhou University, Changzhou, Jiangsu, China), Yan Li, Zhihui Chen((Changzhou University, Changzhou, Jiangsu, China)), Ningyi Yuan((Changzhou University, Changzhou, Jiangsu, China)), Jianning Ding((Changzhou University, Changzhou, Jiangsu, China)

17:00 **The influences of surface sulfurization and H2S concentration on Cu2ZnSn(S,Se)4 solar cells by sulfurization after selenization** **D 8.9**
Chung-Hao Cai, Shih-Yuan Wei, Wei-Chih Huang, Chih-Huang Lai
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan

17:00 **Controlled Growth of Cu2O Thin Films by Electrodeposition Approach.** **D 8.10**
Md. Anower Hossain, Rashad Al-Gaashani, Hicham Hamoudi, Mohammed J.F Al Marri, Ibnelwaleed A. Hussein, Abdelhak Belaidi, Belabbes A Merzougui, Fahhad H Alharbi, and Nouar Tabet
Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar Foundation, PO Box 5825, Doha, Qatar Md. Anower Hossain, Rashad Al-Gaashani, Hicham Hamoudi, Abdelhak Belaidi, Belabbes A Merzougui, Fahhad H Alharbi, Nouar Tabet Gas Processing Center, Qatar University, PO Box 2713, Doha, Qatar Mohammed J.F Al Marri, Ibnelwaleed A. Hussein

17:00 **Comparison of Processing Windows and Electronic Properties between CH3NH3PbI3 Perovskite Fabricated by One-step and Two-step Sol** **D 8.11**
Yue-Min Xie, Yuan-Hang Cheng, Xiu-Wen Xu, Ho-Wa Li, Sai-Wing Tsang*
Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, P. R. China

17:00 **Characterization of lead halide perovskites by modulated surface photovoltage** **D 8.12**
Celline Awino Omondi1, Thomas Dittrich1, Eva Unger1, Lukas Kegelmann1, Steve Albrecht2, Bernd Rech1
1 Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium-Photovoltaik, Kekuléstr. 5, D-12489 Berlin, Germany, 2 Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Young Investigator Group Perovskite Tandem Solar Cells, Kekuléstr. 5, D-12489 Berlin, Germany

17:00 **Solvent-Assisted Gel Printing for Micropatterning Thin Organic-Inorganic Hybrid Perovskite Films** **D 8.13**
Beomjin Jeong, Ihn Hwang, Eui Hyuk Kim, Han Sol Kang, Cheolmin Park
Department of Materials Science and Engineering, Yonsei University (Korea)

17:00 **BaTiO3/TiO2 mesoporous double layer for the electron transport layer of organic/inorganic hybrid solar cells** **D 8.14**
Yuji OKAMOTO, Yoshikazu SUZUKI
Graduate School of Pure and Applied Sciences, University of Tsukuba, Japan, Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

17:00 **The Detrimental Effect of Excess Mobile Ions in planar CH3NH3PbI3 Perovskite Solar Cells** **D 8.15**
Yuanhang Cheng, Ho-Wa Li, Xiuwen Xu, Yuemin Xie, Sai-Wing Tsang
Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, P. R. China

17:00 **Measurement of charge carrier mobility in perovskite films by photo-celiv method** **D 8.16**
1, 2. Andrius AUKSTUOLIS, 3. George A. MOUSDIS, 1. Mihaela GIRTAN, mihaela.girtan@univ-angers.fr
1. Photonics Laboratory (LPHIA), Angers University, France, 2. Department of Solid State Electronics, Faculty of Physics, Vilnius University, Lithuania, 3. National Hellenic Foundation, Athens, Greece,

17:00 **TRENDS ON THE NEW SOLAR CELLS GENERATION RESEARCH** **D 8.17**
Mihaela GIRTAN
LPHIA, UBL - Angers University, 2.Bd. Lavoisier, 49045, France, mihaela.girtan@univ-angers.fr

17:00 **The Effects of Small Polar Molecules (MA+ and H2O) on Degradation Processes of Perovskite Solar Cells** **D 8.18**
Chunqing Ma, Dong Shen, Jian Qing, Ming-Fai Lo, * and Chun-Sing Lee*
Center of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, Hong Kong SAR, P.R. China

17:00 **Cu2ZnSnS4 as a Promising Earth-Abundant Photovoltaic Absorber Material: A Combined Theoretical and Experimental Study** **D 8.19**
Sarah Kahlaoui (A), Mohammed Regragui (A),Bouchera Belhorma (B), Hicham Labrim(B)
(A) Materials Physics Laboratory, Mohamed V University, Rabat, Morocco (B) The National Centre for Nuclear Energy and Technology,Rabat , Morocco

17:00 **Structural Electronic and Optical properties of undoped and Fe-doped CuO : experimental and théorique study.** **D 8.20**
Mr. Hamid EZ-ZAHRAOUY, Mr. Hicham LABRIM, Mme. Bouchra BELHORMA.
University of mohammed v - Faculty of Sciences of Rabat. National Center of Energy, Sciences and Nuclear Techniques CNESTEN Rabat Morocco.

17:00 **Properties relation for CNT-cysteine/CdS clusters as photoactive nanosystems** **D 8.21**
V. Blashuk, O. Ivanyuta, S. Kratko
Taras Shevchenko National University of Kyiv 64/13, Volodymyrska Str., Kyiv, 01601, Ukraine

17:00 **Mechanistic Study of Water Oxidation Reaction on Metal Oxides Photoanodes** **D 8.22**
Yi Wen, Laia Francàs Forcada, Camilo A. Mesa
Durrant Group, Department of Chemistry, Imperial College London

17:00 **Efficiency Potential of Future Generation Solar Cells** **D 8.23**
Masafumi Yamaguchi, Kan-Hua Lee, Kenji Araki, Nobuaki Kojima
Toyota Technological Institute

17:00 **Optical properties and band structures of Cu2(GexSn1-x)S3 photovoltaic materials** **D 8.24**
Qing Chen, Tsuyoshi Maeda, and Takahiro Wada
Department of Materials Chemistry, Ryukoku University

17:00 **Photoelectrodes based on oxide semiconductor-nanocellulose composites for efficient photoelectrochemical water splitting** **D 8.25**
Heejin Lee, Chulmin Yoon, Taekjib Choi*
Hybrid Materials Research Center and Department of Nanotechnology and Advanced Materials Engineering, Sejong University, 143-747

17:00 **Electron spectroscopy for chemical analysis of hybrid perovskite films** **D 8.26**
M. Kot1,*, J. Lobaza1, Z. Wang2, H. Snaith2 and D. Schmeißer1
1BTU Cottbus–Senftenberg, Konrad-Wachsmann-Allee 17, 03046 Cottbus, Germany
2Clarendon Laboratory, University of Oxford, Parks Road, Oxford, OX13PU, UK
*Corresponding author e-mail address: malgorzata.sowinska@b-tu.de.

17:00 **Toward bandgap widening of BaSi2 by carbon substitution using 3C-SiC-on-Si heteroepitaxial wafer** **D 8.27**
Yoshihiko Nakagawa, Yasuyoshi Kurokawa, Noritaka Usami
Nagoya University

17:00 **Tailoring the electronic properties of semiconducting nanocrystal-solids: InAs embedded in SnS_x matrices** **D 8.28**
Emilio Scalise, Stefan Wippermann, Giulia Galli, Dmitri Talapin
Max Planck Institut fuer Eisenforschung GmbH Dusseldorf Max Planck Inst fuer Eisenforschung GmbH Dusseldorf The University of Chicago The University of Chicago

17:00 **Interface engineering of perovskite solar cells by atomic layer deposition** **D 8.29**
Dirk Döhler, Yanlin Wu, Julien Bachmann
Department of Chemistry and Pharmacy, Friedrich-Alexander University Erlangen-Nürnberg, Germany

17:00 **The Synthesis of Novel Oxychalcogenide P-type Transparent Semiconductors** **D 8.30**
G. J. Limburn, D. Salazar-Marcano, G. Hyett
D. Scanlon

17:00 **Effect of target power and O2 flow on DC magnetron sputter deposited CuxO thin films** **D 8.31**
M. Nyborg, P. F. Lindberg, A. Galeckas, E. V. Monakhov, B. G. Svensson
University of Oslo, Department of Physics/Centre for Materials Science and Nanotechnology, P.O. Box 1048 Blindern, N-0316 Oslo, Norway

17:00 **Characterization of transport properties of Sb2S3 layer by admittance spectroscopy** **D 8.32**
Shuo Wang1,2, Victor Odari3,4, Pascal Kaienburg1, Robinson Musembi3, Julius Mwabora3, Thomas Kirchartz1,
1. IEK5-Photovoltaik, Forschungszentrum Jülich, 52425 Jülich, Germany, 2. School of Physics, Nankai University, 300071 Tianjin, P.R. China, 3. Department of Physics, University of Nairobi, 30197 Nairobi, Kenya, 4. Department of Physics, Masinde Muliro University of Science and Technology, 190 Kakamega, Kenya,

17:00 **Thin film photovoltaic devices prepared with Cu3BiS3 ternary compound** **D 8.33**
J. Hernández-Mota(1), M. Espíndola-Rodríguez(2), Y. Sánchez(2), Israel López(1), Y. Peña(1), E. Saucedo(2)
(1). Universidad Autónoma de Nuevo León (UANL), Facultad de Ciencias Químicas, Laboratorio de Materiales I, Av. Universidad, Cd. Universitaria 66451, San Nicolás de los Garza, Nuevo León, México. (2). Catalonia Institute for Energy Research (IREC). Jardins de les Dones de Negre 1 2pl, 08930 Sant Adrià del Besòs, Barcelona, Spain.

17:00 **Electronic properties of hybrid perovskite materials for the design and development of photovoltaic applications. A theoretical** **D 8.34**
I. Ornelas, J.J.J. Díaz, A. Trejo, E. Carvajal and M. Cruz–Irisson
Instituto Politécnico Nacional, Escuela Superior de Ingeniería Mecánica y Eléctrica–Culhuacán, Av. Santa Ana 1000, C.P. 04430, Ciudad de México, México.

17:00 **Order-disorder related Energy-gap variation in CZTS: influence of material stoichiometry** **D 8.35**
M. Valentini, C. Malerba, F. Menchini, A. Polimeni, A. Mittiga
SAPIENZA – University of Rome, Department of Physics, P.le Aldo Moro 5, 00156 Roma, ITALY ENEA, Casaccia Research Center, via Anguillarese 301, 00123, Roma, ITALY

17:00 **CuSbS2 thin films by chemical solution methods and post-deposition annealing** **D 8.36**
Obed Yamín Ramírez-Esquivel, Dalia Alejandra Mazón-Montijo, Francisco Servando Aguirre-Tostado
Centro de Investigación de Materiales Avanzados, S.C., Unidad Monterrey, Apodaca, N.L. 66628, México.

17:00 **Exploring the Optical Properties of Earth-Abundant Chalcogenide Absorbers** **D 8.37**
Rongzhen Chen (1,2), Clas Persson (1,2,3)
1 Department of Materials Science and Engineering, KTH Royal Institute of Technology, SE-100 44 and Stockholm, Sweden, 2 Centre for Materials Science and Nanotechnology, University of Oslo, P.O. Box 1048 Blindern, No-0316 and Oslo, Norway, 3 Department of Physics, University of Oslo, P.O. Box 1048 Blindern, No-0316 and Oslo, Norway

17:00 **Enhancement of Perovskite Solar Cell Efficiency by Optical Engineering** **D 8.38**
Mehmet Koç, Wiria Soltanpoor, Selçuk Yerci
GÜNAM, Middle East Technical University, Ankara, TURKEY Micro and Nanotechnology, Middle East Technical University, Ankara, TURKEY Electrical and Electronics Engineering, Ankara Yıldırım Beyazıt University, Ankara, TURKEY, GÜNAM, Middle East Technical University, Ankara, TURKEY Micro and Nanotechnology, Middle East Technical University, Ankara, TURKEY, GÜNAM, Middle East Technical University, Ankara, TURKEY Micro and Nanotechnology, Middle East Technical University, Ankara, TURKEY

17:00 **Fabrication of Lead Halide Perovskite Films with Large Grains by Vapor Deposition: Effects of Deposition Pressure and Post Annea** **D 8.39**
Wiria Soltanpoor1.3*, Mehmet Cem Şahiner2.3, Selçuk Yerci1,2,3
1 Department of Micro and Nanotechnology, Middle East Technical University, Ankara, 06800, Turkey 2 Department of Electrical and Electronics Engineering, Middle East Technical University, Ankara, 06800, Turkey 3 The Center for Solar Energy Research and Applications, Middle East Technical University, Ankara, 06800, Turkey

17:00 **An Amine-Thiol Mixture For Solution Processed CZTSSe** **D 8.40**
Lewis D. Wright, Panagiota Arnou, Soňa Uličná, Carl S. Cooper, Andrei V. Malkov, and Jake W. Bowers
Loughborough University, Loughborough, Leicestershire, LE11 3TU, UK

Wednesday 24 May 2017

Halide perovskites for photovoltaics (1) : Tim Veal

09:30 **Progress in Halide Perovskite Solar Cells: Developing a scalable and stable photovoltaic technology** **D 9.1**
Joseph Berry
NREL, USA

10:00 **Indirect to direct bandgap transition in methylammonium lead halide perovskite** **D 9.2**
Tianyi Wang,Benjamin Daiber,Jarvist M. Frost,Sander A. Mann,Erik C. Garnett,Aron Walsh,Bruno Ehrler
Center for Nanophotonics, FOM Institute AMOLF, Science Park 104, 1098 XG Amsterdam, The Netherlands, Department of Materials, Imperial College London, London SW7 2AZ, UK

10:15 **Design principles for inorganic halide perovskites: a high-throughput lattice dynamics approach** **D 9.3**
Ruo Xi Yang1,2, Jonathan M. Skelton1, Estelina Lora da Silva1 and Aron Walsh2
1. University of Bath, Bath, BA2 7AY, UK, 2. Imperial College London, London, SW7 2AZ, UK.

10:30 **18.11% High-Efficiency, Air-processed Perovskite Solar Cell - Unlocking the Limitations from Ambient Air** **D 9.4**
Xiuwen Xu, Yuanhang Cheng, Yuemin Xie, Ho-Wa Li, Sai-Wing Tsang*
Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, P. R. China

10:45 **Coffee Break**

New concepts and materials for photovoltaics : Joseph Berry

11:15 **Atomically thin, van der Waals photovoltaics** **D 10.1**
Deep Jariwala, Joeson Wong, Giulia Tagliabue, Artur R. Davoyan, Kevin Tat, Michelle C. Sherrott and Harry A. Atwater
Applied Physics and Materials Science, California Institute of Technology, Pasadena, CA, 91125, USA

11:45 **Candidate photoferroic absorber materials for solar cells from naturally occurring minerals: enargite, stephanite and bournonite** **D 10.2**
Suzanne K. Wallace, Katrine L. Svane, David B. Mitzi, Volker Blum, Aron Walsh
Department of Chemistry, University of Bath, Claverton Down, Bath, BA2 7AY, UK, Department of Materials, Imperial College London, Exhibition Road, London SW7 2AZ, Department of Chemistry, Duke University, Durham, North Carolina 27708, USA, Department of Materials, Duke University, Durham, North Carolina 27708, USA, Global E3 Institute and Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea

12:00 **Thin-film metal hydrides as solar energy materials** **D 10.3**
Trygve Mongstad, Erik Marstein, Smagul Karazhanov
IFE (Institute for Energy Technology), Kjeller, Norway

12:15 **Beyond MAPI: The Search for Stable Hybrid Halide Perovskites** **D 10.4**
Alex M. Ganose (1,2), Christopher N. Savory (1), and David O. Scanlon (1,2)
(1) University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK, (2) Diamond Light Source Ltd., Harwell Science and Innovation Campus, Didcot OX11 0DE, UK,

12:30 **Lunch**

Emerging materials in photovoltaics (4) : David Scanlon

14:00 **Core levels, band alignment and valence band states in CuSbS2 and Cu3BiS3: limitations of analogies with CIGS** **D 11.1**
T. J. Whittles, A. W. Welch, P. Yates, J. D. Major, K. Durose, A. Zakuteyev, V. R. Dhanak, T. D. Veal
Department of Physics and Stephenson Institute for Renewable Energy, University of Liverpool, UK, National Renewable Energy Labs, Colorado, USA

14:30 **Evaluation of ZnSnN2 layers electrical properties for PV applications** **D 11.2**
W. Favre1, F. Alnjiman2, N. Feldberg2, A. Ouazar1, A. Valla1, J.-F. Pierson2, P Miska2
1 CEA/LITEN/DTS, INES, 50 avenue du Lac Léman, 73377 Le Bourget-du-Lac, France
2 Institut Jean Lamour, CNRS, Université de Lorraine, 54510 Vandoeuvre les Nancy, France

14:45 **Simple and Single-Step Synthesis of Metal Oxides for Photovoltaics** **D 11.3**
Dilli babu Padmanaban, Darragh Carolan, Tamilselvan Velusamy, Conor Rocks, Gunisha Jain, Paul Maguire and Davide Mariotti.
Nanotechnology and Integrated Bioengineering Centre, Engineering Research Institute, Ulster University - Jordanstown, Shore Road, Newtownabbey, Northern Ireland BT37 0QB, United Kingdom.

15:00 **Recombination losses in solution processed Cu2SnS3 solar cells** **D 11.4**
Devendra Tiwari, Tristan Koehler, Rainer Klenk, David J. Fermin
Devendra Tiwari, David J. Fermin, School of Chemistry University of Bristol, Cantocks Close, Bristol BS8 1TS, UK Tristan Koehler, Rainer Klenk, Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin,Germany

15:15 **Coffee Break**

Thursday 25 May 2017

Chalcogenides for photovoltaics (3) : Angela Fioretti

09:30 **SWInG-development of thin film Solar cells based on WIde band Gap kesterite absorbers** **D 12.1**
Bart Vermang
IMEC, Belgium

10:00 **Effect of Sulphurization on Compositional Variations in Cu-poor and Sn-rich CZTS Thin Films: TEM Investigation** **D 12.2**
Manoj Vishwakarma 1, Olesia M. Karakulina 2, Artem M. Abakumov 2&3, Joke Hadermann 2, B.R. Mehta 1*
1 Thin Film Laboratory, Department of Physics, IIT Delhi, New Delhi-110016, India 2 EMAT, University of Antwerp, Groenenborgerlaan 171, B-2020 Belgium 3 Skoltech Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Nobel str. 3, 143026 Moscow, Russia.

10:15 **Engineering of a SixNy diffusion barrier to reduce the formation of MoS2 in Cu2ZnSnS4 thin film solar cells** **D 12.3**
Zhengfei Wei1, Chung Man Fung2, Toby Woolard1, Owen J. Guy2 and Trystan M. Watson1
1SPECIFIC, College of Engineering, Swansea University, Bay Campus, Swansea, SA1 8EN, 2Centre of NanoHealth (CNH), College of Engineering, Swansea University, Singleton Campus, Swansea, SA2 8PP

10:30 **Light-Induced Degradation of Perovskite Solar Cells: the Role of Spiro-MeOTAD Dopands** **D 12.4**
João P. Bastos, Ulrich W. Paetzold, Supriya Surana, David Cheyns, Weiming Qiu, Robert Gehlhaar and Jef Poortmans
João P. Bastos - IMEC, Kapeldreef 75, Leuven, B-3001, Belgium, KU Leuven, Kasteelpark Arenberg 10, Leuven, B-3001, Belgium, Ulrich W. Paetzold - IMEC, Kapeldreef 75, Leuven, B-3001, Belgium. Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Karlsruhe, Germany, Supriya Surana - IMEC, Kapeldreef 75, Leuven, B-3001, Belgium. KU Leuven, Kasteelpark Arenberg 10, Leuven, B-3001, Belgium, David Cheyns - IMEC, Kapeldreef 75, Leuven, B-3001, Belgium, Weiming Qiu - IMEC, Kapeldreef 75, Leuven, B-3001, Belgium. KU Leuven, Kasteelpark Arenberg 10, Leuven, B-3001, Belgium, Robert Gehlhaar - IMEC, Kapeldreef 75, Leuven, B-3001, Belgium, Jef Poortmans - IMEC, Kapeldreef 75, Leuven, B-3001, Belgium. KU Leuven, Kasteelpark Arenberg 10, Leuven, B-3001, Belgium. University Hasselt, Martelarenlaan 52, B-3500 Hasselt, Belgium.

10:45 **Coffee Break**

Chalcogenides for photovoltaics (4) : Bart Vermang

11:15 **Kesterites: progresses, problems and perspectives** **D 13.1**
Edgardo Saucedo
Catalonia Institute for Energy Research (IREC). Jardins de les Dones de Negre 1 2pl, 08930 Sant Adrià del Besòs, Barcelona, Spain.

11:45 **Modification of electrical properties of SnSe thin-films via stoichiometry control for photovoltaic&thermoelectric applications** **D 13.2**
Giuk Jeong, Jekyung Kim, Byungha Shin*
Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, 291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea,

12:00 **One step growth of thin film SnS with large grains using MOCVD** **D 13.3**
A. J. Clayton*1, S. J. C. Irvine1, P. Siderfin1 and C. M. E. Charbonneau2
1 Centre for Solar Energy Research, College of Engineering, Swansea University, UK, 2 SPECIFIC, College of Engineering, Swansea University, UK

12:15 **Absorber thin films of chemically deposited SnS in solar cell structures with CdS and oxides of Zn** **D 13.4**
Victoria Elena González-Flores, Ana Rosa García-Angelmo, Antonio Mina, K. C. Sanal, J. Camos, O. GomezDaza, M.T. Santhamma Nair, P.Karunakaran Nair
Instituto de Energías Renovables, Universidad Nacional Autónoma de México, Temixco, Morelos 62580, Mexico

12:30 **Lunch**

Emerging materials in photovoltaics (5) : Edgardo Saucedo

14:00 **Doping control in zinc-rich ZnSnN2 via hydrogen-assisted acceptor activation** **D 14.1**
Angela N. Fioretti [1,2], Adam Stokes [1,2], Matthew R. Young [1], Brian Gorman [2], Eric S. Toberer [1,2], Adele C. Tamboli [1,2], and Andriy Zakutayev [1]
[1] National Renewable Energy Laboratory, Golden, Colorado 80401 USA, [2] Colorado School of Mines, Golden, Colorado 80401 USA

14:30 **Ultrathin AlOx gentle passivation for improving the minority-carrier lifetime of BaSi2 film prepared by vacuum evaporation for s** **D 14.2**
N.M.Shaalan1,2, Noritaka Usami3, Kosuke O. Hara3
1Department of Material Science and Engineering, Egypt-Japan University of Science and Technology (E-JUST), P. O. Box 179, New Borg El-Arab, Alexandria, Egypt. 2Physics Department, Faculty of Science, Assiut University, Assiut 71516, Egypt 3Graduate School of Engineering, Nagoya University, Nagoya 464-8603, Japan

14:45 **Metal Oxides for Solar Energy Harvesting: Computational Materials Discovery** **D 14.3**
Haonan Le, Keith T. Butler, Daniel W. Davies, Aron Walsh
Haonan Le: Department of Chemistry, Imperial College London, London, United Kingdom, Keith T. Butler: Department of Chemistry, University of Bath, Bath, United Kingdom, Daniel W. Davies: Department of Chemistry, University of Bath, Bath, United Kingdom, Aron Walsh: Department of Materials Science and Engineering, Imperial College London, London, United Kingdom, Department of Materials Science and Engineering, Yonsei University, Seoul, South Korea.

15:00 **2,2',6,6'-Tetraphenyldipyranylidene derivative as an Efficient Hole Transporting Material for Stable Perovskite Solar Cells** **D 14.4**
Marc Courté,(1) Chao Shen,(1) Anurag Krishna,(1) Shasha Tang,(1) Denis Fichou (1,2,3)
1 School of Physical and Mathematical Sciences, Nanyang Technological University, 637371, Singapore, 2 Sorbonne Universités, UPMC Univ Paris 06, UMR 8232, Institut Parisien de Chimie Moléculaire, F-75005, Paris, France, 3 CNRS, UMR 8232, Institut Parisien de Chimie Moléculaire, F-75005, Paris, France,

15:15 **Coffee Break**

Halide perovskites in photovoltaics (2) : Adele Tamboli

15:45 **Evidence for ion migration in hybrid perovskite solar cells with minimal hysteresis** **D 15.1**
Philip Calado, Andrew M. Telford, Daniel Bryant, Xiaoe Li, Jenny Nelson, Brian O'Regan and Piers R F Barnes
PC, AMT, JN, PRFB: Department of Physics, Imperial College London, SW7 2AZ, UK, DB: Department of Chemistry, Imperial College London, SW7 2AZ, UK, XL, DB, JN: SPECIFIC, Swansea University, SA12 7AX, UK, BOR: Sunlight Scientific, 1190 Oxford Street, Berkeley CA, 94707, USA.

16:00 **Physical properties and photostability of 3D and 2D Ruddlesden-Popper perovskite materials for photovoltaic applications** **D 15.2**
Jacky Even(1), Hsinhan Tsai(2), Wanyi Nie(2), Jean-Christophe Blancon(2), Amanda Neukirch(2), Constantinos Stoumpos(3), Laurent Pedesseau(1), Boubacar Traoré (4), Mikael Kepenekian (4), Claudine Katan(4), Sergei Tretiak(2), Mercuri Kanatzidis(3), Aditya Mohite(2)
(1) FOTON UMR 6082, CNRS INSA Rennes, Rennes, France (2) Los Alamos National Laboratory, Los Alamos, New Mexico USA (3) Department of Chemistry, Northwestern University, Evanston, Illinois USA (4) ISCR UMR 6226, CNRS Université de Rennes 1, Rennes, France

16:15 **Defects in hole transport layer/perovskite interfaces and solar cell performance** **D 15.3**
E. Hsieh, A. Puaud, C. Renaud, L. Wang, T. P. Nguyen
E. Hsieh a , A. Puaud b , C. Renaud c , L. Wang a , T. P. Nguyen b a Center for Condensed Matter Sciences, National Taiwan University, 1, Sec.4, Roosevelt Road, Taipei 10617, Taiwan. b Institut des Matériaux Jean Rouxel, University of Nantes, CNRS, 2 rue de la Houssinière, 44322 Nantes Cedex3, France. c LAPLACE, University of Toulouse, 118 Route de Narbonne 31062 Toulouse Cedex 9, France.

16:30 **In-system study of SnCl2 precursor layers: Towards vacuum-based synthesis of Pb-free perovskites** **D 15.4**
Roberto Félix,1 Núria Llobera-Vila,1 Claudia Hartmann,1 Carola Klimm,1 Dan R. Wargulski,1 Manuel Hartig,1,2 Regan G. Wilks,1,3 and Marcus Bär1,3,4
1Renewable Energy, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany, 2 Technologie für Dünnschicht-Bauelemente, Technische Universität Berlin - Fak. IV, HFT 5-2, Einsteinufer 25, D-10587 Berlin, Germany, 3Energy Materials In-Situ Laboratory Berlin (EMIL), Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Albert-Einstein-Straße 15, D-12489 Berlin, Germany, 4Institut für Physik und Chemie, Brandenburgische Technische Universität Cottbus- Senftenberg, Platz der Deutschen Einheit 1, D-03046 Cottbus, Germany

16:45 **Van Der Waals Interactions and Anharmonicity in the Vibrational Properties of the Organic-Inorganic Halide Perovskite CH3NH3PbI3** **D 15.5**
Aurélie Champagne(1), Miguel A. Pérez-Osorio(2), Marios Zacharias(2), Feliciano Giustino(2), and Gian-Marco Rignanese(1)
1: Institute of Condensed Matter and Nanoscience (IMCN), Université Catholique de Louvain, B-1348 Louvain-la-neuve, Belgium 2: Department of Materials, University of Oxford, Parks Road, Oxford, OX1 3PH, UK

Poster session : N/A

17:00 **Determination and analysis of optical constants and dispersion energy parameters of Zn(S,O) thin films** **D 15.6**
N. Khemiri, M. Kanzari
Université Tunis El Manar, Ecole National d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs 1002, Tunis, Tunisie. Université de Tunis, IPEITunis Montfleury, Laboratoire de Photovoltaïques et Matériaux Semi-conducteurs-ENIT.

17:00 **Effects of sulfurization temperature on Cu2ZnxFe1-xSnS4 thin films deposited by single source thermal evaporation method** **D 15.7**
A. Hannachi, N. Khemiri, M. Kanzari
A. Hannachi, N. Khemiri, Université Tunis El Manar, Ecole National d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs 1002, Tunis, Tunisie. M. Kanzari, Université de Tunis, IPEITunis Montfleury, Laboratoire de Photovoltaïques et Matériaux Semi-conducteurs-ENIT.

17:00 **Investigations on the physico-chemical properties of Cu-Fe-O thin films for solar cell applications** **D 15.8**
H. Ben Jbara, N. Khemiri, F. Chaffar Akkari, M. Kanzari
Université Tunis El Manar, Ecole National d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs 1002, Tunis, Tunisie

17:00 **Transparent semiconducting indium sulfur fluoride films** **D 15.9**
Y. Vygranenko (1), M. Fernandes (1,2), M. Vieira (1,2), G. Lavareda (1,3), C. Nunes de Carvalho (3,4), D. Nunes (3), R. Martins (3), P. Brogueira (4,5), A. Amaral (4,5)
1) CTS-UNINOVA, Campus da Caparica, 2829-516 Caparica, Portugal, 2) Electronics Telecommunications and Computer Engineering, ISEL, Lisbon, 1950-062, Portugal, 3) i3N/CENIMAT, Department of Materials Science, Faculty of Sciences and Technology, Universidade NOVA de Lisboa and CEMOP/UNINOVA, Campus de Caparica, 2829-516 Caparica, 4) Center of Physics and Engineering of Advanced Materials, Universidade de Lisboa, Av. Rovisco Pais 1, 1049-001 Lisboa, Portugal, 5) Departamento de Física, Universidade de Lisboa, Av. Rovisco Pais 1, 1049-001 Lisboa, Portugal

17:00 **Interface Modification on Organic Solar Cells with Different Phenyl Boronic Acid Derivative Self-Assemble Monolayers** **D 15.10**
Çisem Kırbıyık 1,2, Sümeyra Büyükçelebi 1, Koray Kara 1,3, Duygu Akın Kara 1,4, Mesude Zeliha Yiğit 5, Mustafa Can 5, Mahmut Kuş 1,2
1 Advanced Technolgy Research and Application Center, Selcuk University, Konya Turkey 2 Department of Chemical Engineering, Selcuk University, Konya Turkey 3 Department of Physics, Selcuk University, Konya Turkey 4 Department of Physics, Mugla Sitki Kocman University, Mugla Turkey 5 Department of Engineering Sciences, Izmir Katip Celebi University, Izmir, Turkey

17:00 **SnO2 films deposited by different methods for planar perovskite solar cells** **D 15.11**
Ho Won Tam, Fangzhou Liu, Man Kwong Wong, Yushu Wang, Wei Chen, Alan Man Ching Ng, Aleksandra B. Djurišić, Wai Kin Chan
Ho Won Tam, Fangzhou Liu, Man Kwong Wong, Yushu Wang, Aleksandra B. Djurišić, Department of Physics, The University of Hong Kong, Pokfulam Road, Hong Kong, Wai Kin Chan Department of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong, Alan Man Ching Ng Department of Physics, South University of Science and Technology of China, Shenzhen, China, Wei Chen Department of Materials Science and Engineering, South University of Science and Technology of China, Shenzhen, China

17:00 **Effect of Cu Content on the Photovoltaic Properties of CuSbS2 Thin Film Solar Cells** **D 15.12**
Shahara Banu1, 2, Ara Cho1, 2*
1New and Renewable Energy Research Division, Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), Daejeon, South Korea, 2 University of Science and Technology (UST), Daejeon, South Korea

17:00 **Stabilizing Hybrid Perovskite Materials: The Cation's Role** **D 15.13**
Fedwa El-Mellouhi, El Tayeb Bentria, Sergey N Rashkeev, Sabre Kais, and Fahhad H Alharbi
Hamad Bin Khalifa University

17:00 **Photovoltaic cell using antimony selenide thin film absorbors** **D 15.14**
Young Been Kim. Joo Sung Kim. Hyung Koun Cho
School of Advanced Materials Science and Engineering, Sungkyunkwan University

17:00 **Doping and carrier mobility of CZGSe films for wide bandgap kesterite solar cells** **D 15.15**
S. Yang(a), S. Khelifi(a), G. Brammertz(b), B. Vermang(b), M. Meuris(b), T. Schnabel(c), E. Ahlswede(c), J. Beeckman(a), K. Neyts(a), J. Lauwaert(a)
(a) Ghent University, (b) IMEC, (c) ZSW

17:00 **Parallel arrays of cylindrical, coaxial p-i-n heterojunctions as ETA solar cells** **D 15.16**
Pascal Büttner and Julien Bachmann
Department of Chemistry and Pharmacy, Friedrich-Alexander University Erlangen-Nürnberg, Egerlandstrasse 1, D-91058 Erlangen, Germany

17:00 **Atomic Layer Deposition for Building Ultrathin Amorphous Silicon Solar Cells with Nano-pore Array Structure** **D 15.17**
Hong Sun,Julien Bachmann
Department of Chemistry and Pharmacy,Friedrich-Alexander University of Erlangen-Nürnberg

17:00 **CuSbS2 solar cells prepared by evaporation/annealing sequential process** **D 15.18**
A. Benítez-Garza (1), S. Lugo (1), Y. Sánchez (2), M. Espindola-Rodriguez (2), Y. Peña (1), E. Saucedo (2)
(1). Universidad Autónoma de Nuevo León (UANL), Facultad de Ciencias Químicas, Laboratorio de Materiales I, Av. Universidad, Cd. Universitaria 66451, San Nicolás de los Garza, Nuevo León, México. (2). Catalonia Institute for Energy Research (IREC). Jardins de les Dones de Negre 1 2pl, 08930 Sant Adrià del Besòs, Barcelona, Spain.

17:00 **Pulsed laser deposition (PLD) of the CZTS absorber for thin solar cells with up to 5.2-% -efficiency** **D 15.19**
A. Cazzaniga, A. Crovetto, S. Canulescu, R. B. Ettlinger, N. Pryds, J. Schou, O. Hansen, C. Yan, K. Sun, X. Hao
The Technical University of Denmark, DTU Fotonik, DK-4000 Roskilde, Denmark, The Technical University of Denmark, DTU Nanotech, DK-2800 Kgs. Lyngby, Denmark, School of Photovoltaic and Renewable Energy Engineering, University of New Wales, NSW 2052, Sydney, Australia

17:00 **Structural and optical characterization of NaSbS2- a promising solar absorber** **D 15.20**
Winnie Leung(1), Christopher N. Savory(1), Robert G. Palgrave(2) and David O. Scanlon(1,3)
(1) University College London, Kathleen Lonsdale Materials Chemistry, (2) Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK, (3) Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK

17:00 **Development of sprayed Sb2S3 thin films for hydrid solar cells** **D 15.21**
A. Katerski, I. Gromyko, E. Karber, M. Krunks
Tallinn University of Technology, Department of Materials and Environmental Technology, Laboratory of Thin Film Chemical Technologies, 19086 Tallinn, Estonia

17:00 **Design of thiophene-core based small organic molecules as hole transporting material in perovskite solar cells** **D 15.22**
Laura Calió, Manuel Salado, Samrana Kazim, Shahzada Ahmad
Abengoa Research, Abengoa, C/Energía Solar n° 1, Campus Palmas Altas, 41014 Sevilla, Spain

17:00 **Synthesis of Iron-sulfide Thin Films and Nanowires by Thermal Gas Phase Reaction with Di-tert-butyl-disulfide** **D 15.23**
M. U. Qureshi, A. Chnani, F. Lovric, T. Diemant, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, Ulm University, Institute of Surface Chemistry and Catalysis, Albert-Einstein-Allee 47, 89081 Ulm, Germany, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

17:00 **The Effects of Substrate and Annealing Temperatures on Surface Morphology of Sputtered SnSe Thin Films** **D 15.24**
H. H. Güllü (1,2,*), M. Terlemezoğlu (1,3,4), Ö. Bayraklı (1,3,5), M. Parlak (1,3)
1 Center for Solar Energy Research and Applications (GÜNAM), 06800, Ankara, Turkey, 2 Central Laboratory, Middle East Technical University, 06800, Ankara, Turkey, 3 Department of Physics, Middle East Technical University, 06800, Ankara, Turkey, 4 Department of Physics, Namık Kemal University, 59030, Tekirdağ, Turkey, 5 Department of Physics, Ahi Evran University, 40100, Kırşehir, Turkey, *hgullu@metu.edu.tr

17:00 **Photophysics of copper zinc tin sulphide semiconductor nanocrystal heterojunctions for use in solution-processed solar cells** **D 15.25**
Ioannis Ierides, Dr. Saif Haque, Professor Jenny Nelson
Imperial College London

17:00 **Sn,Zn oxide based thin films deposited by mocvd using an heteronuclear precursor for physical applications** **D 15.26**
N. Prud'homme, C. Legros, P. Ribot, D. Dragoe, D. Berardan, M. Andrieux, V.G. Kessler, G.A.Seisenbaeva
Univ. Paris Sud , Univ Paris Saclay, SP2M-ICMMO, CNRS UMR 8182, Bât. 410, 91405 Orsay Cedex, France : N. Prud'homme, C. Legros, P. Ribot, D. Dragoe, D. Berardan, M. Andrieux. Department of Chemistry, SLU, Box 7015, 75007 Uppsala, Sweden : V.G. Kessler, G.A.Seisenbaeva

17:00 **Efficiency improvement of dye-sensitized solar cells based on trench structured TiO2 nanotubes using TiCl4 treatment** **D 15.27**
Kang-Pil Kim*
Convergence Research Center for Solar Energy, DGIST

17:00 **A framework toward efficient perovskite solar cells using full space optimization** **D 15.28**
Ahmer A.B. Baloch-1, Shahzada P. Aly-1, Mohammad I. Hossain-2, Raka Jovanovic-2, Nouar Tabet-1, 2, and Fahhad H. Alharbi-1, 2
1-College of Science and Engineering, Hamad bin Khalifa University, Doha, Qatar
2-Qatar Environment & Energy Research Institute, Hamad bin Khalifa University, Doha, Qatar

17:00 **Multi-functional Layer Based on Pyrite for High Efficient Organo-Lead Halide Perovskite Solar Cells** **D 15.29**
Heesuk Jung, Bonkee Koo, Inyoung Jeong, Seunghwan Bae, Phillip Lee, Min Jae Ko
Heesuk Jung, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea, Bonkee Koo, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea, Inyoung Jeong, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea, Seunghwan Bae, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea, Phillip Lee, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea, Min Jae Ko, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea,

17:00 **Raman quantification of Cu-Sn-S polymorph content and its influence on Cu2SnS3 based solar cells optoelectronic properties** **D 15.30**
Florian Oliva 1, Laia Arques 1, Laura Acebo 1, Andrew Fairbrother 1, Yudania Sánchez 1, Paul Pistor 1,2, Tariq Jawhari 3, Xavier Alcobe 3, Alejandro Perez-Rodriguez 1,4, Edgardo Saucedo 1, and Victor Izquierdo-Roca 1,
1 Catalonia Institute for Energy Research (IREC), 08930 Sant Adrià de Besòs-Barcelona, Spain, 2 Martin-Luther-University Halle-Wittenberg, 06120 Halle (Saale), Germany, 3 Centres Científics i Tecnològics de la Universitat de Barcelona (CCiTUB), Lluís Solé i Sabarís 1-3, 08028 Barcelona, Spain, 4 IN2UB, Departament d?Electrònica, Universitat de Barcelona, C. Martí i Franquès 1, 08028 Barcelona, Spain,

17:00 **Tin sulfide thin films fabricated via co-evaporation processes** **D 15.31**
Jihye Gwak1, Jihye Son1,2, SeJin Ahn1,*, Young Joo Eo1, Ara Cho1, Seung Kyu Ahn1, Kihwan Kim1, Junsik Cho1, Jae Ho Yun1
1Photovoltaic Laboratory, Korea Institute of Energy Research, KOREA, 2Department of Applied Chemical Engineering, Chungnam National University, KOREA

17:00 **Post Deposition Annealing effect on CZTS solar cells** **D 15.32**
Claudia Malerba, Matteo Valentini, Alberto Mittiga
claudia Malerba 1, 2 Matteo Valentini 1, 3 Alberto Mittiga 1 1 ENEA, Casaccia Research Center, via Anguillarese 301, 00123 Roma, Italy 2 University of Trento, DICAM, via Mesiano 77, 38123 Trento, Italy 3 Sapienza – University of Rome, Department of Physics, p.le A. Moro 5, 00185 Roma, Italy

17:00 **Theoretical and Experimental Investigation of Nano-mechanical Characteristics of SnTe Thin Films** **D 15.33**
Özge BAYRAKLI, Hasan Huseyin GULLU, Gokhan SURUCU, Makbule TERLEMEZOGLU and Mehmet PARLAK
1-Department of Physics, Middle East Technical University (METU), 06800 Ankara, Turkey 2-Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey 3-Department of Physics, Ahi Evran University, 40100, K?rsehir, Turkey, 1-Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey 2-Centeral Laboratory METU, Ankara 06800, Turkey, 1-Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey 2- Electrical and Energy Department, Ahi Evran University, K?r?ehir, 40200, Turkey, 1-Department of Physics, Middle East Technical University (METU), 06800 Ankara, Turkey 2-Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey

17:00 **Insight into the perovskite photoluminescence enhancement: Photoluminescence and electrical properties study** **D 15.34**
Zdeňka Hájková,1 Martin Ledinský,1 Jakub Holovský,1 Tereza Schönfeldová,1 Bjoern Niesen,2 Jérémie Werner,2 Christophe Ballif,2 Stefaan De Wolf,3 and Antonín Fejfar1
1 Laboratory of Nanostructures and Nanomaterials, 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, Institute of Microengineering (IMT), Ecole Polytechnique Fédérale de Lausanne (EPFL), Neuchâtel, 2000, Switzerland, 3 King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Thuwal, 23955-6900, Saudi Arabia

17:00 **Lowest Open Circuit Voltage Deficit with Band Gap Front-Graded Cu2ZnSn(S,Se)4 Thin Films** **D 15.35**
Dae-Kue Hwang*, Byoung-Soo Ko, Dong-Hwan Jeon, Jin-Kyu Kang, and Dae-Hwan Kim
Daegu Gyeongbuk Institute of Science and Technology, Daegu 42988, Korea

Water splitting and photocatalysis : Deep Jariwala

09:30 **Atomic layer deposition of molybdenum sulfide for use as catalysts for electrochemical/photoelectrochemical water splitting** **D 16.1**
Lifeng Liu,* Dehua Xiong
International Iberian Nanotechnology Laboratory

09:45 **Rationalising hydrogen evolution activities of linear organic photocatalysts by monitoring photogenerated transients** **D 16.2**
Michael Sachs,1 Reiner Sebastian Sprick,2 Stoichko Dimitrov,1 Andrew Pearce,3 Martijn A. Zwijnenburg,4 Jenny Nelson,3 Andrew I. Cooper2 and James R. Durrant1
1 Department of Chemistry, Imperial College London, UK, 2 Department of Chemistry, University of Liverpool, UK, 3 Department of Physics, Imperial College London, UK, 4 Department of Chemistry, University College London, UK

10:00 **Amorphous cobalt phyllosilicate with layered crystalline motifs as water oxidation catalyst** **D 16.3**
Ju Seong Kim,§ Inchul Park,§ Eun-Suk Jeong, Kyoungsuk Jin, Won Mo Seong, Gabin Yoon, Hyunah Kim, Byunghoon Kim, Ki Tae Nam,* and Kisuk Kang*
Department of Materials Science and Engineering, Research Institute of Advanced Materials (RIAM), Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 151-742, Republic of Korea.

10:15 **Effect of Ag Co-catalyst on TiO2-Cu2O Nanocomposites Structure and Visible Photocatalytic Activities** **D 16.4**
Dávidné Nagy (1), Maria-Chiara Ferrari (1), Imre Miklós Szilágyi (2,3), Xianfeng Fan (1)
(1) Institute for Materials and Processes, School of Engineering, The University of Edinburgh (2) Department of Inorganic and Analytical Chemistry, Budapest University of Technology and Economics (3) Technical Analytical Chemistry Research Group of the Hungarian Academy of Sciences

10:30 **CdxZn1-xO/Si tandem structure for efficient photoelectrochemical water splitting** **D 16.5**
Chun Yuen Ho, Chaoping Liu, Wladek Walukiewicz, and Kin Man Yu
Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Ave., Kowloon, Hong Kong, Materials Sciences Division, Lawrence Berkeley National Laboratory, 1 Cyclotron Rd., Berkeley, CA 94720,

10:45 **Coffee Break**

Emerging materials in photovoltaics (6) : Patrice Miska

11:15 **Strongly enhanced photovoltaic performance and defect physics of air-stable bismuth oxyiodide (BiOI)** **D 17.1**
Robert L. Z. Hoye (1), Lana C. Lee (2), Rachel C. Kurchin (3), Tahmida N. Huq (2), Kelvin H. L. Zhang (2), Melany Sponseller (3), Lea Nienhaus (3), Riley E. Brandt (3), J. Alexander Polizzotti (3), Ahmed Kursumović (2), Vladimir Bulović (3) Vladan Stevanović (4, 5), Tonio Buonassisi (3), and Judith L. MacManus-Driscoll (2)
(1) Department of Physics, University of Cambridge, (2) Department of Materials Science and Metallurgy, University of Cambridge, (3) Massachusetts Institute of Technology, (4) Colorado School of Mines, (5) National Renewable Energy Laboratory.

11:30 **Trap state dynamics in organometal halide perovskites with controlled grain size and crystallinity** **D 17.2**
Tobias Seewald(1)*, Carola Ebenhoch(1), Philipp Ehrenreich(1), Eugen Zimmermann(1), Rebecca Milot(2), Laura Herz(2), Lukas Schmidt-Mende(1)
1) Physics Department, Universität Konstanz, 78457 Konstanz, Germany, 2) Department of Physics, University of Oxford, Clarendon Laboratory, Parks Road, Oxford OX1 3PU, UK

11:45 **Electroabsorption of perovskite solar cells** **D 17.3**
Davide Moia1, Xiaoe Li2, YingHong Hu3, Jiachen Gu1, Pablo Docampo3, Jenny Nelson1, Piers RF Barnes1
1, Imperial College London, Prince consort road, London, SW7 2AZ, UK 2, Imperial College London, Exhibition road, London, SW7 2AZ, UK 3, Department of Chemistry, Ludwig-Maximilians-Universität , München, Germany, 81377, Germany

12:00 **Bismuth-based colloidal nanocrystals: earth-abundant, non-toxic materials for solution-processed solar cells** **D 17.4**
Maria Bernechea, and Gerasimos Konstantantos
Maria Bernechea: Cardiff School of Engineering, Cardiff University, Cardiff CF24 3AA, Wales, United Kingdom. ICFO-Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, 08860 Castelldefels (Barcelona), Spain, Gerasimos Konmstantatos: ICFO-Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, 08860 Castelldefels (Barcelona), Spain. ICREA-Institució Catalana de Recerca i Estudis Avançats, Passeig Lluís Companys 23, 08010 Barcelona, Spain

12:15 **Photo-induced trap formation in lead-halide perovskites** **D 17.5**

S. G. Motti, M. Gandini, A. J. Barker, J. M. Ball, A. R. Srimath Kandada, A. Petrozza
Dipartimento di Fisica, Politecnico di Milano, Piazza Leonardo da Vinci, 32, 20133 Milano, Italy, Center for Nanoscience and Technology @Polimi, Istituto Italiano di Tecnologia, via Giovanni Pascoli 70/3, 20133 Milano, Italy

SYMPOSIUM E

Advanced inorganic materials and structures for photovoltaics

Symposium Organizers :

Abdelilah SLAOUI, ICUBE / CNRS / UdS, MaCEPV group, Strasbourg, France

Gavin CONIBEER, University of New South Wales, Sydney, Australia

Ivan GORDON, IMEC, Leuven, Belgium

Janez KRC, University of Ljubljana, Slovenia

Shigeru NIKI, National Institute of Advanced Industrial Science and Technology, Fukushima, Japan

Monday 22 May 2017

Opening : Janez Krc, Ivan Gordon, Abdelilah Slaoui, Shigeru Niki, Gavin Conibeer

10:00 **Symposium introduction** **E I.1**
Janez Krc (1), Ivan Gordon (2), Abdelilah Slaoui (3), Shigeru Niki (4), Gavin Conibeer (5)
(1) University of Ljubljana, Slovenia, (2) IMEC, Belgium, (3) CNRS-ICUBE, France, (4) AIST, Japan, (5) UNSW, Australia

Perovskites : Matt Beard

10:15 **(invited) Multiferroic perovskites as alternative candidates for energy conversion** **E II.1**
Riad Nechache
École de Technologie Supérieure, Department of Electrical Engineering, 1100 Notre-Dame Ouest, Montréal, Québec, H3C 1K3, Canada

10:45 **A photon ratchet route to high-efficiency hybrid halide perovskite intermediate band solar cells** **E II.2**
Jarvist Moore Frost[1], Pooya Azarhoosh[2], Scott McKechnie[2], Mark van Schilfgaarde[2], Aron Walsh[1]
[1] Imperial College London, UK. [2] King's College London, UK.

11:00 **Quantum confinement on a single object level: band structure modification in perovskite nanocrystals** **E II.3**
Leyre Gomez, Chris de Weerd, Junhao Lin, Yasufumi Fujiwara, Kazutomo Suenaga, Tom Gregorkiewicz
Institute of Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands, Institute of Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands, National Institute of Advanced Industrial Science and Technology (AIST), AIST Central 5, Tsukuba 305-8565, Japan, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, 2-1 Yamadaoka, Osaka 565-0871, Japan, National Institute of Advanced Industrial Science and Technology (AIST), AIST Central 5, Tsukuba 305-8565, Japan, Institute of Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands.

11:15 **(invited) Hybrid perovskites: understanding stability and lead free alternatives.** **E II.4**
Dr Saif Haque
Department of Chemistry, Imperial College London, SW7 2AZ. UK.

11:45 **Low-temperature Optical and Structural Properties of 2D perovskites** **E II.5**
E. P. Booker, T. H. Thomas, M. B. Price, S. E. Dutton, F. Deschler, N.C. Greenham
Cavendish Laboratory, University of Cambridge

12:00 **Sub 10 nm bromide mapping on cross-sections of complex hybrid perovskite photovoltaic films using HSES technique** **E II.6**
Vikas Kumar1, Whitney L. Schmidt1, Giorgio Schileo1, Derek C Sinclair1, Ian M. Reaney1, Cornelia Rodenburg1
1Department of Materials Science and Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD.

12:15 **Lunch break**

Chalcogenides I : Santosh Shrestha

14:00 **(invited) Indium zinc oxide and hydrogen-doped indium oxide windows combined with Zn(O,S) and CdS buffers for Cu(In,Ga)Se2 solar cells** **E III.1**
Wolfram Witte1)*, Romain Carron2), Dimitrios Hariskos1), Fan Fu2), Richard Menner1), and Stephan Buecheler2)
1) Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW) Industriestraße 6, 70565 Stuttgart, Germany, 2) Empa, Überlandstraße 129, 8600 Dübendorf, Switzerland

14:30 **Current collectors for flexible CIGS solar cells: Cu nanowires and printed grids** **E III.2**
Aneliia Wäckerlin1, Zixing Ye1, Huizhang Guo2, René Schneider3, Yoram de Hazan4, Thomas Feurer1, Carron Romain1, Shiro Nishiwaki1, Lukas Greuter1, Yaroslav E. Romanyuk1, Ayodhya N. Tiwari1
1 Laboratory for Thin Films and Photovoltaics, Empa-Swiss Federal Laboratories for Materials Science and Technology, Überlandstr. 129, 8600 Dübendorf, Switzerland, 2 Wood Materials Science, Institute for Building Materials, ETH Zürich, Stefano-Franscini-Platz 3, 8093 Zürich, Switzerland, 3 Laboratory for Functional Polymers, Empa, Swiss Federal Institute for Materials Science and Technology, Überlandstr. 129, 8600 Dübendorf, Switzerland, 4. ZHAW School of Engineering, Technikumstrasse 9, 8400 Winterthur, Switzerland,

14:45 **Distribution of alkali elements in Cu(In,Ga)Se2 solar cells on a nanometer scale** **E III.3**
Arantxa Vilalta-Clemente (1), Celia Castro (1), Mohit Raghuwanshi (1), Sébastien Duguay (1), Emmanuel Cadel (1), Philippe Pareige (1), Philip Jackson (2), Dimitrios Hariskos (2), and Wolfram Witte (2)
(1) Groupe de Physique des Matériaux, Université et INSA de Rouen - UMR 6634 CNRS – Normandie Université, Avenue de l'université BP 12, 76801 Saint Etienne du Rouvray, France (2) Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Industriestr. 6, 70565 Stuttgart, Germany

15:00 **Surface modification of Na and K incorporated Cu(In,Ga)Se2 absorbers investigated by synchrotron based spectroscopies** **E III.4**
I. Majumdar1,2,3*, B. Ümsür1,2, B. Chacko1,2, V. Parvan1, D. Greiner1, M. Ch. Lux-Steiner2, R. Schlatmann1, I. Lauermann1
1 PVcomB / Helmholtz-Zentrum Berlin für Materialien und Energie, Schwarzschildstr. 3, D-12489 Berlin, Germany
2 Freie Universität Berlin, Fachbereich. Physik, Arnimallee 14, D- 14195 Berlin, Germany 3 Indian Institute of Technology Bombay, Powai, Mumbai, Maharashtra 400076, India * Corresponding author: Phone: 49 30 8062 15698, isheta.majumdar@helmholtz-berlin.de

15:15 **Flexible Cu(In,Ga)Se2 based solar cells using Molybdenum foils** **E III.5**
Mishael Stanley, Marie Jubault, Fréderique Donsanti, Negar Naghavi
EDF – R&D, Institut R&D sur l'Energie Photovoltaïque (IRDEP) - Mishael Stanley, Marie Jubault, Fréderique Donsanti Institut Photovoltaïque d'Ile de France (IPVF) - Mishael Stanley, Marie Jubault, Fréderique Donsanti, Negar Naghavi CNRS, Institut R&D sur l'Energie Photovoltaïque (IRDEP) - Negar Naghavi

15:30 **Fabrication of CuInSe2 Micro Absorbers for Concentrator Solar Cells** **E III.6**
Berit Heidmann, Franziska Ringleb, Katharina Eylers, Owen Ernst, Jörn Bonse, Stefan Andree, Jörg Krüger, Torsten Boeck, Martha Ch. Lux-Steiner, Martina Schmid
Universität Duisburg Essen, Forsthausweg 2, 47057 Duisburg, Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Leibniz-Institut für Kristallzüchtung, Max-Born-Str. 2, 12489 Berlin, Bundesanstalt für Materialforschung und –prüfung (BAM), Unter den Eichen 87, 12205 Berlin, Freie Universität Berlin, Arnimallee 14, 14195 Berlin

15:45 **First-principles studies of CuIn5Se8, CuGa5Se8, CuIn5S8, and CuGa5S8** **E III.7**
Tsuyoshi. Maeda, Seitarou Nakashima, Kenta Ueda, Takahiro Wada
Department of Materials Chemistry, Ryukoku University

16:00 **Coffee break**

Advanced materials and nanostructures I : Thomas Fix

16:30 **(invited) Enhanced Multiple Exciton Generation in PbS/CdS Janus-like Heterostructure Nanocrystals** **E IV.1**
Daniel M. Kroupa, Gregory F. Pach, Boris D. Chernomordik, Matthew C. Beard
National Renewable Energy Laboratory

17:00 **High efficient infrared quantum cutting in Ce3+-Yb3+ codoped silicon oxynitride for solar cell applications** **E IV.2**
F. Ehré(1), C. Dufour(1), F. Gourbilleau(1), X. Portier(1), C. Frilay(1), H. Rinnert (2) , D. Lagarde (3), X. Marie(3), J. Weimmerkirch-Aubatin(1), W. M. Jadwisienczak(4), A. L. Richard(5), D. C. Ingram(5), C. Labbé(1)
(1) Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, CIMAP, 14000 Caen, France, (2) Université de Lorraine, Institut Jean Lamour, UMR7198, Nancy F-54011, France, (3) LPCNO, Université de Toulouse, CNRS, INSA, UPS, 135 avenue de Rangueil, 31077 Toulouse, France, (4) School of Electrical Engineering and Computer Science, Ohio University, Stocker Center, Athens, OH 45701, USA, (5) Department of Physics and Astronomy, Ohio University, Athens, OH 45701, USA

17:15 **Biomimetic surfaces increase performance of prototype solar cells** **E IV.3**
Raphael Schmager (1), Ihteaz Muhaimeen Hossain (1), Ruben Hünig (3), Kaining Ding (4), Benjamin Fritz (2), Uli Lemmer (1,2), Bryce S. Richards (1,2), Guillaume Gomard (1,2), Ulrich W. Paetzold (1)
(1) Institute of Microstructure Technology, Karlsruhe Institute of Technology (KIT), Engesserstrasse 13, 76131 Karlsruhe, Germany (2) Light Technology Institute, Karlsruhe Institute of Technology (KIT), Engesserstrasse 13, 76131 Karlsruhe, Germany (3) Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW) Baden-Württemberg (ZSW), Industriestraße 6, 70565 Stuttgart, Germany (4) IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, 52428 Jülich, Germany

17:30 **BiAgOCh layered compounds (M = Cu, Ag, Ch = S, Se): a new photovoltaic absorber?** **E IV.4**

J. Gamon[1][2], G. Wallez[1][5], D. Giaume[1], S. Haller[1][2], T. Le Bahers[3], T. Le Mercier[2], P. Barboux[1], J.B. Labegorre[4], E. Guilmeau[4], A. Maignan[4]
1 Chimie ParisTech, PSL ResearchUniversity, CNRS, Institut de Recherche de Chimie Paris (IRCP), F-75005 Paris, France, 2 Solvay, Research and Innovation Center Paris, 52 rue de La Haie Coq, 93308 Aubervilliers Cedex, France, 3 Université de Lyon, Université Claude Bernard Lyon1, ENS Lyon, Centre National de Recherche Scientifique, 46 Allée d'Italie, 69007 Lyon Cedex 07, France, 4 Laboratoire CRISMAT, UMR 6508 CNRS/ENSICAEN/UCBN, 6 bd du Maréchal Juin F-14050 CAEN Cedex 4 – France, 5 Sorbonne University, UPMC Université, Paris 06, 75005 Paris, France

17:45 **Influence of electrical transport properties on performance of Si nanowire array solar cells assessed by optoelectrical modeling** **E IV.5**

A. Levtchenko, R. Lachaume, J. Michallon, S. Collin, J. Alvarez, S. Le Gall, Z. Djebbour, J-.P. Kleider
GeePs (Group of electrical engineering – Paris), UMR CNRS 8507, CentraleSupélec, Univ. Paris-Sud, Université Paris-Saclay, Sorbonne Universités, UPMC Univ Paris 06, 3 & 11 rue Joliot-Curie, Plateau de Moulon 91192 Gif-sur-Yvette, France, GeePs and IPVF (Institut Photovoltaïque d'Ile de-France) , 8 rue de la Renaissance, 92160 Antony, France, GeePs, IPVF and C2N (Center for Nanoscience and Nanotechnology), CNRS, Univ. Paris-Sud, Université Paris-Saclay, C2N – Marcoussis, 91460 Marcoussis, France, C2N, GeePs, GeePs, GeePs, GeePs

Tuesday 23 May 2017

Silicon and beyond I : Stefan Wippermann

09:00 **(invited) Exotic Forms of Silicon For PV Applications** **E V.1**

C.A. Koh, P.C. Taylor, R.T. Collins, L. Krishna, C.M. Maupin, C. Durfee, S. Vyas, P. Stradins, T. Strobel
Colorado School of Mines, National Renewable Energy Laboratory, Carnegie Institute of Washington

09:30 **Production of solar cells with ultra-shallow substrates obtained by a stress-induced spalling technique featuring an innovative** **E V.2**

T. Pingault1, N. Zayyoun1,2, P. S. Pokam-Kuisseu1, E. Ntsoenzok1,3, J-P. Blondeau1,3, P. Bellanger4, S. Roques4, A. Slaoui4, A. Ulyashin5, H. Labrim6, B. Belhorma6
1 CEMTHI - CNRS, Site Cyclotron, 3A rue de la Férollerie, 45071 Orléans, France, 2 LCS, Faculty of Sciences, Mohammed V University, Rabat, Morocco 3 Université d'Orléans, Château de la Source, 45100 Orléans, France, 4 iCube – CNRS, Equipe MaCEPV, 23 rue du Loess, 67037 Strasbourg, France, 5 SINTEF, Forskningsveien 1, 0314 Oslo, Norway, 6 CNESTEN, Rabat, B.P. 1382, Morocco.

09:45 **Impact of the initial growth interface on the grain structure in HPMC-Si ingot** **E V.3**

Giri Wahyu Alam (a, b, c), Etienne Pihan (a), Marie Benoit (a), Nathalie Mangelinck-Noel (c)
(a) CEA-INES, 50 Avenue du Lac Léman, 73370, Le Bourget du Lac, France, (b) Aix Marseille Univ, CNRS, IM2NP UMR CNRS 7334, Campus Saint Jérôme, case 142, 13397 Marseille Cedex 20, France, (c) Centre of Technology for Materials, Agency for the Assessment and Application of Technology, Bldg. 224 PUSPIPTEK, South Tangerang 15314, Indonesia

10:00 **Coffee break**

Silicon and beyond II : Carolyn A. Koh

10:30 **(invited) Epitaxial Kerfless Silicon Wafers for Photovoltaic Application** **E VI.1**

R. Hao, T.S. Ravi, V. Siva
Crystal Solar Inc., 3050 Coronado Drive, Santa Clara, CA 95054, USA

11:00 **From the kerfless wafering of ultra-thin silicon substrates by means of hydrogen implantation to the production of solar cells** **E VI.2**

Sylvia Pokam 1, Timothée Pingault 1, Esidor Ntsoenzok 1,4, Gabrielle Regula 2, Frédéric Mazen 3, Audrey Sauldubois 4, Pierre Bellanger 5, Stéphane Roques 5, Abdelilah Slaoui 5
1 CEMHTI-CNRS, 3A rue de la férollerie, 45071 Orléans, France 2 IM2NP-Université d'AIX-Marseille, Avenue Escadrille Normandie Niemen, 13397 Marseille, France 3 CEA-LETI, MINATEC Campus, 17 rue des Martyrs, 38054 GRENOBLE, France 4 Université d'Orléans, rue de Chartres – Collegium ST, 45067 Orléans, France 5 iCUBE, CNRS-Université de Strasbourg, 23 rue du Loess, 67037 Strasbourg, France

11:15 **(invited) Passivating contacts in crystalline silicon solar cells** **E VI.3**

Mathieu Boccard, Zachary Holman, Christophe Ballif
EPFL, Neuchâtel, Switzerland, ASU, Tempe (AZ), USA

11:45 **Novel passivated contact based on microcrystalline silicon carbide and silicon tunnel oxide for crystalline silicon solar cells** **E VI.4**

Malte Köhler, Manuel Pomaska, Florian Lentz, Benjamin Klingebiel, Jan Flohre, Florian C. Maier, Kaining Ding, Friedhelm Finger, Reinhard Carius, Uwe Rau
IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany

12:00 **(invited) Novel silicon phases and nanostructures for solar energy conversion** **E VI.5**

S. Wippermann, Y. He, M. Vörös, G. Galli,
Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany, Sandia National Laboratories, Livermore, California, USA, Institute for Molecular Engineering, University of Chicago, Illinois, USA, Institute for Molecular Engineering, University of Chicago, Illinois, USA,

12:30 **Lunch break**

Chalcogenides II : Wolfram Witte

14:00 **(invited) Over 16% efficiency of Se-free Cu(In,Ga)S2 solar cell** **E VII.1**

Homare Hiroi (1,2,3), Yasuaki Iwata(1), Hiroki Sugimoto(1), Akira Yamada(3)
2-Technology Development Division, Atsugi Research Center, Solar Frontier K.K.,
2-Technology Development Division, Atsugi Research Center, Solar Frontier K.K.,
3-Department of Physical Electronics, Tokyo Institute of Technology

14:30 **Point defect segregation around dislocations in Cu(In,Ga)Se2: vital or fatal?** **E VII.2**
Daniel Barragan-Yani, Prof. Dr. Karsten Albe
Technische Universtät Darmstadt, Institut für Materialwissenschaft, Fachgebiet Materialmodellierung

14:45 **Low temperature synthesis of high quality a few PtSe2 monolayers by plasma assisted selenization process and applying for opto-e** **E VII.3**
Teng-Yu Su, Henry Medina, Chia-Wei Chen,Yu-Ze Chen, Yu-Lun Chueh
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, 300, Taiwan

15:00 **Evaluation of photovoltaic potential of single solution generated Cu2ZnSn(S,Se)4 thin film based solar cells** **E VII.4**
Devendra Tiwari (1), Jake Bowers (2), Tristan Koehler (3), Reiner Klenk (3), David J Fermin (1)
(1) School of Chemistry, University of Bristol, Cantock's Close, Bristol, United Kingdom BS8 1TS, (2) Centre for Renewable Energy Systems Technology (CREST), Loughborough University, Loughborough, Leicestershire LE11 3TU, United Kingdom, (3) Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany

15:15 **Cu/Zn disorder in Cu2ZnSn(S1-xSex)4: influence on transport properties** **E VII.5**
G. Gurieva 1, M. Guc2, D.M. Többens1, K. G. Lisunov2, E. Arushanov 2 and S. Schorr 1,3
1 Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, Berlin, Germany 2 Institute of Applied Physics, Academy of Sciences of Moldova, Academiei Str. 5, MD-2028 Chisinau, Republic of Moldova 3 Freie Universitaet Berlin, Institute of Geological Sciences, Malteserstr. 74-100, Berlin, Germany

15:30 **Raman scattering assessment of points defects in kesterite semiconductor: UV resonant Raman characterization of CZTS solar cells** **E VII.6**
F. Oliva1, S. Giraldo1, M. Dimitrievska2, 3, P. Pistor1,4, M. Guc1, A. Martínez-Pérez, E Saucedo1, A. Pérez-Rodríguez1, 5, V. Izquierdo-Roca1,
1 – Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs, Spain, 2 – NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD 20899-6102, United States, 3 – National Renewable Energy Laboratory, Golden, CO 80401, United States, 4 – Martin-Luther-University Halle-Wittenberg, 06120 Halle (Saale), Germany, 5 – IN2UB, Departament d'Electrònica, Universitat de Barcelona, C. Martí i Franquès 1, 08028 Barcelona, Spain,

15:45 **First principles study of β-In2S3, NaIn5S8 and CuIn5S8, and their associated absorber/buffer interfaces** **E VII.7**
Elaheh Ghorbani, Karsten Albe
Fachgebiet Materialmodellierung, Institut für Materialwissenschaft, TU Darmstadt, Jovanka-Bontschits-Straße 2, D-64287 Darmstadt, Germany

16:00 **Coffee break**

Poster session I : Janez Krc

16:30 **Degradation and regeneration of hybrid perovskites** **E PI.1**
Charu Seth and Deepa Khushalani
Materials Chemistry Research Group, Department of Chemical Sciences, Tata Institute of Fundamental Research, Homi Bhabha Rd, Colaba, Mumbai, India 400005

16:30 **Electronic and gap properties of lead-free perfect and mixed hybrid halide perovskites: An ab-initio study** **E PI.2**
Athanasios Koliogiorgos, Sotirios Baskoutas, Iosif Galanakis
Department of Materials Science, University of Patras, Greece (all authors)

16:30 **Layer-by-Layer Assemblies of Quantum Dots and Surface Modification for Nanostructured Photovoltaic Devices** **E PI.3**
Sukyung Choi, Ho Jin, Nam Sung Cho, Sungjee Kim
Sukyung Choi, Nam Sung Cho, Electronics and Telecommunications Research Institute (ETRI) Ho Jin, Texas A&M University Sungjee Kim, Pohang University of Science and Technology (POSTECH)

16:30 **Single crystalline Si wafers sliced by electrical discharge on multi-wires for photovoltaic applications** **E PI.4**
Boyun Jang
Separation and Conversion Material Laboratory, Korea Institute of Energy Research, Republic of Korea

16:30 **The Effect of Modification of mp-TiO2 Surface with Small Self-Assemble Monolayers on Photovoltaic Parameters of Perovskite Solar** **E PI.5**
Çisem Kırbıyık, Koray Kara, Duygu Akın Kara, Mesude Zeliha Yiğit, Mustafa Can, Mahmut Kuş
Ç. Kırbıyık, Prof. M. Kuş, Department of Chemical Engineering, Selcuk University,42075, Turkey, E-mail: cisem_krbyk@hotmail.com K. Kara, Department of Physics, Selcuk University, 42075, Turkey D. A. Kara, Department of Physics, Mugla Sıtkı Kocman University, 48000, Turkey M. Z. Yiğit, Prof. M. Can, Department of Engineering Sciences, Izmir Katip Celebi University, 35620, Turkey

16:30 **Indolo[3,2-b]indole-based Crystalline Hole Transporting Material for Efficient Perovskite Solar Cells** **E PI.6**
Dr. Illhun Cho, Dr. Nam Joon Jeon, Dr. Jangwon Seo, Prof. Sang Il Seok and Prof. Soo Young Park
Dr. Jangwon Seo and Dr. Nam Joon Jeon Division of Advanced Materials Korea Research Institute of Chemical Technology 141 Gajeong-Ro, Yuseong-Gu, Daejeon 305-600, Republic of Korea E-mail: jwseo@krict.re.kr Prof. Sang Il Seok School of Energy and Chemical Engineering Ulsan National Institute of Science and Technology (UNIST) 50 UNIST-gil, Eonyang-eup, Ulju-gun, Ulsan 689-798, Republic of Korea E-mail: seoksi@krict.re.kr Dr. Illhun Cho and Prof. Soo Young Park Department of Materials Science and Engineering, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul, 151-744, Republic of Korea. E-mail: parksy@snu.ac.kr

16:30 **Numerical model to map solar cells properties from spectrally resolved luminescence images** **E PI.7**
Nicolas Paul, Vincent Le Guen, Daniel Ory, Laurent Lombez
EDF R&D, 6 quai Watier, 78400 Chatou Cedex, France , Institute of Research and Development on Photovoltaic Energy (IRDEP), UMR 7174 CNRS-EDF- Chimie ParisTech, EDF R&D, Chatou, France

16:30 **Silicon tunnel junction devices realized by ion implantation and diffusion processes for tandem solar cells** **E PI.8**
Pierre Bellanger, Albert Minj, A. Fave, F. Jomard, Yann Le Gall, Florian Mugler,Stephane Roques, Abdelilah Slaoui
Pierre Bellanger, Yann Le Gall, Florian Mugler, Stephane Roques, Abdelilah SlaouiICube, laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, ICube, University of Strasbourg-CNRS, Strasbourg, France F. Jomard, CIMAP, centre de recherche sur les Ions, les Matériaux et la Photonique,Caen, France A. Fave, INL, Institut des Nanotechnologies de Lyon, Villeurbanne, France Albert Minj, GEMaC groupe d'étude de la matière condensée,Versailles, France

16:30 **Crystalline silicon growth on aluminium substrate for the photovoltaic application** **E PI.9**
P. Bellanger, S. Benachigere Shivarudraiah, C. Leuvrey, A. Dinia, F. Jomard, A. Ulyashin, A. Shahrestani Azar T. Fix, S. Roques, O.Lunder, F. Mugler, A. Slaoui
P. Bellanger, S. Benachigere Shivarudraiah, T. Fix, S. Roques, F. Mugler, A. Slaoui, ICUBE, laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, University of Strasbourg-CNRS, Strasbourg, France. C. Leuvrey, A. Dinia, IPCMS, Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France.
F. Jomard, GEMaC, Groupe d'Etude de la Matière Condensée,Versailles, France.
A. Ulyashin, A. Shahrestani Azar, SINTEF Material and Chemistry, Oslo, Norway
O.Lunder, SINTEF Material and Chemistry, Trondheim, Norway

16:30 **Studies and simulation of InGaN materials for the application of solar cells** **E PI.10**
Ould-Abbes Ammaria , Zeggai Oussama , belarbi moussab
1-Research unit of Materials and Renewable energies (URMER), University Abou Bakr Belkaïd, B.P. 119, Tlemcen, Algeria. 2-Hassiba ben bouali university, BP 151,02000 chlef Algeria.

16:30 **In-situ observation of lattice relaxation processes by X-ray diffraction during GaAsSb/GaAs (001) growth** **E PI.11**
Hidetoshi Suzuki1), Masakazu Arai1), Takuo Sasaki2), Masamitu Takahasi2), Yoshio Ohshita3)
1) University of Miyazaki, 1-1 Gakuen-kibandai Nishi, Miyazaki, Miyazaki 889-2192, Japan, 2) National Institutes for Quantum and Radiological Science and Technology, Hyogo 679-5148, Japan, 3) Toyota Technological Institute, 2-12-1 Hisakata, Tempaku, Nagoya 468-8511, Japan

16:30 **Modified PV structures based on a structured zinc oxide/silicon heterojunction** **E PI.12**
R. Pietruszka1, B.S. Witkowski1, K. Kopalko1, E. Zielony2, K. Gwozdz2, E. Placzek-Popko2, M. Godlewski1,3
1Institute of Physics, Polish Academy of Sciences, Aleja Lotnikow 32/46, PL-02668 Warsaw, Poland 2Department of Quantum Technologies, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, 27 Wybrzeze Wyspianskiego, 50-370 Wroclaw, Poland 3Department of Mathematics and Natural Sciences College of Science, Cardinal Stefan Wyszynski University, Warsaw, Poland

16:30 **Internal Processing of Picosecond Laser for Spalling of Single Crystalline Si** **E PI.13**
Park Jeong Eun, Young Min Lee, Min Ji Lee, Sang Muk Kang, Donggun Lim*
Department of IT Convergence, Korea National University of Transportation

16:30 **Electro-thermal behaviour of different Silicon-Based Solar Cell Architectures under Controlled Environmental Conditions** **E PI.14**

B. Guillo Lohan (1,2,3), M. Amara (1), R. Couderc (1), A. Kaminski-Cachopo (3), M. Lemiti (2)
(1) Université de Lyon, Centre d'Energetique et de thermique de Lyon CETHIL-UMR5008, CNRS, INSA de Lyon, Villeurbanne F-69621, France (2) Université de Lyon, Institut de Nanotechnologies INL-UMR5270, CNRS, INSA de Lyon, Villeurbanne F-69621, France (3) Université Grenoble Alpes, Institut de Microélectronique Electromagnétisme et Photonique et Laboratoire d'Hyperfréquences et de Caractérisation (IMEP-LAHC), Grenoble INP, UMR CNRS 5130, Grenoble F-38016, France

16:30 **Transition metal oxides as hole selective contacts for Silicon heterojunction solar cells** **E PI.15**

F. Menchini 1, R. Chierchia 1, L. Serenelli 1,2, P. Mangiapane 1, E. Salza 1, L. Martini 1,2, and M. Tucci 1
1 ENEA, Casaccia Research Center, via Anguillarese 301, 00123, Rome, ITALY, 2 DIET University of Rome "Sapienza", via Eudossiana 18, 00184 Rome, ITALY

16:30 **n-GaP/p-Si heterojunction solar cells fabricated by PE-ALD** **E PI.16**

A.S. Gudovskikh(1,2), A.V. Uvarov(1), I.A. Morozov(1), A.I. Baranov(1), D.A. Kudryashov(1) , E.V. Nikitina(1) and J.-P. Kleider(3)
(1)St.Petersburg National Research Academic University RAS St.Petersburg, RUSSIA (2) St. Petersburg Electrotechnical University "LETI" St.Petersburg, RUSSIA (3) GeePs, Group of electrical engineering - Paris, CNRS, CentraleSupélec, Univ. Paris-Sud, Université Paris-Saclay Sorbonne Universités, UPMC Univ Paris 06 Gif-sur-Yvette, FRANCE

16:30 **Ferroelectric Inorganic Perovskite Oxides for Photovoltaic Applications** **E PI.17**

Quattropani Alessandro, Fix Thomas, Colis Silviu, Rehspringer Jean-Luc, Schmerber Guy, Versini Gilles, Rastei Mircea, Dinia Aziz, Slaoui Abdelilah
Quattropani Alessandro, Fix Thomas,Slaoui Abelilah: ICube laboratory, MaCEPV,(Université de Strasbourg and CNRS), UMR 7163, 23 Rue du Loess BP 20 CR, 67037 Strasbourg Cedex 2, France Rehspringer Jean-Luc, Schmerber Guy, Colis Silviu, Versini Gilles, Rastei Mircea, Dinia Aziz: Institute de Physique et Chimie de Matériaux de Strasbourg, (Université de Strasbourg and CNRS), UMR 7504, 23 Rue du Loess 43, 67034 Strasbourg Cedex 2, France

16:30 **Investigation of detection limits of ZnSe and Cu2SnSe3 secondary phases in Cu2ZnSnSe4** **E PI.18**

G. Gurieva* 1, S. Levcenco 1, A. Pereira Correia de Sousa1,2, T. Unold 1 and S. Schorr 1,3
1 Helmholtz Zentrum Berlin fur Materialien and Energie GmbH, Hahn-Meitner-Platz 1, Berlin, Germany 2 Universidade de Coimbra, Physics Department, Palácio dos Grilos Rua da Ilha 3000-214 Coimbra, Portugal 3 Free University Berlin, Institute of Geological Sciences, Malteserstr. 74-100, Berlin, Germany

16:30 **Printing CIGS Solar Cells with High Efficiency and Yield on Stainless Steel Foils** **E PI.19**

Lung-Teng Cheng, Yu-Yun Wang, Chia-Ming Chang, Sheng-Wen Chan, Chou-Cheng Li, Jen-Chuan Chang, Wei-Sheng Lin, Chien-Rong Huang, Tung-Po Hsieh, Song-Yeu Tsai Green Energy & Environment Research Laboratories, Industrial Technology Research Institute, 31040, Hsinchu, Taiwan

16:30 **A Numerical Study on Temperature Effects on Si Solar Cells** **E PI.20**

Sangchul Oh (1), Nouar Tabet (1), Sabre Kais (1,2)
(1) Qatar Environment and Energy Research Institute, Hamad bin Khalifa University, Qatar Foundation, P.O. Box 5825, Doha, Qatar (2) Department of Chemistry, Physics and Birck Nanotechnology Center, Purdue University, West Lafayette, IN 47907 USA

16:30 **Enhanced Performance of Thinning Cu(In, Ga)Se2 Photovoltaic Device With Passivation Layer** **E PI.21**

Chia-Wei Chen, Hung-Wei Tsai, Chen-Hua Yang, Yu-Chuan Shih and Yu-Lun Chueh Department of Materials Science and Engineering, National Tsing Hua University, Hsin-Chu, Taiwan, R.O.C.

16:30 **CuInSe2 Thin Films As a Counter Electrode of Dye-Sensitized Solar Cell** **E PI.22**

Adem Akdag a, Mucahit Yilmaz b, Erdal Sonmez c, Mahir Gulen d, Savas Sonmezoglu d a Department of Nanoscience&Nanoengineering, Graduate School of Natural and Applied Sciences, Ataturk University, Erzurum, Turkey b Department of Metallurgical and Material Science, S.A.C. Engineering Faculty, Necmettin Erbakan University, Seydisehir, Konya c Department of Physics Education, K.K. Education Faculty, Atatürk University, Erzurum, Turkey d Department of Metallurgical and Materials Engineering, Karamanoğlu Mehmetbey University, Karaman, Turkey

16:30 **From a-Si:H to a-SiOx:H: the role of CO2 and H2 in PECVD deposition process** **E PI.23**

L. Martini1,3, L. Serenelli1,3, E. Bobeico2, F. Menchini1, M. Izzi1, R. Asquini3, G. de Cesare3, M. Tucci1.
1 ENEA, Casaccia Research Center, via Anguillarese 301, 00123, Roma, Italy, 2 ENEA, Portici Research Center, E. Fermi 1, 80055 Portici (Na), Italy, 3 DIET University of Rome "Sapienza", via Eudossiana 18, 00184 Rome, Italy,

16:30 **INFLUENCE OF ALKALI METALS ON PROPERTIES OF CZTS THIN FILMS FOR PHOTOVOLTAIC APPLICATIONS** **E PI.24**

Z. Laghfour 1,2, M. Bouzbib 1,2, S. Aazou 1, M. Taibi 3, M. Abd-lefdil 2, A. Dinia 4, A. Slaoui 5, A. Ulyashin 6, Z. Sekkat 1,2
1 Optics & Photonics Center, MAScIR, Rabat, Morocco, 2 Faculty of science University of Mohammed V, Rabat, Morocco, 3 LPCMIN, ENS, University of Mohammed V, Rabat, Morocco, 4 IPCMS, UMR 7504, CNRS-Strasbourg University, Strasbourg, Cedex 2, France, 5 ICube UMR 7357, CNRS-Strasbourg University, Strasbourg, Cedex 2, France, 6 Material and Chemistry, SINTEF, Forskningsveien 1, Oslo, Norway,

16:30 **Optical and photovoltaic properties of planar structures obtained by thermal annealing of Ga2S3 plates in Zn vapors** **E PI.25**

Iuliana Caraman 1, Silvia Evtodiev 2, Dumitru Untila 2,3, Leonid Palachi 4, Oana Susu 5, Igor Evtodiev 2,3, Valeriu Kantser 2,3
1 Engineering Department, "Vasile Alecsandri" University of Bacau, Calea Marasesti, 157, RO-600115, Bacau, Romania, 2 Faculty of Physics and Engineering, Moldova State University, A. Mateevici, 60, MD-2009, Chisinau, Republic of Moldova, 3 Institute of the Electronic Engineering and Nanotechnologies "D. Ghitu", Academy of Sciences of Moldova, Academiei, 3/3, MD-2028, Chisinau, Republic of Moldova, 4 Free International University of Moldova, Vlaicu Parcalab, 52, MD-2012, Chisinau, Republic of Moldova, 5 Alexandru Ioan Cuza University of Iasi, Carol I, 11, RO-700506 Iasi, Romania

16:30 **EFFECT OF THERMAL ANNEALING CONDITIONS ON CZTS ACTIVE LAYER GROWTH AND PROPERTIES FOR SOLAR CELLS APPLICATIONS** **E PI.26**

M. Bouzbib 1,2, Z. Laghfour 1,2, S. Aazou 1, M. Taibi 3, M. Abd-lefdil 2, A. Dinia 4, A. Slaoui 5, A. Ulyashin 6, Z. Sekkat 1,2
1 Optics & Photonics Center, MAScIR, Rabat, Morocco, 2 Faculty of science University of Mohammed V, Rabat, Morocco, 3 LPCMIN, ENS, University of Mohammed V, Rabat, Morocco, 4 IPCMS, UMR 7504, CNRS-Strasbourg University, Strasbourg, Cedex 2, France, 5 ICube UMR 7357, CNRS-Strasbourg University, Strasbourg, Cedex 2, France, 6 Material and Chemistry, SINTEF, Forskningsveien 1, Oslo, Norway,

16:30 **New insights on the damaging effect of Cu-Se onto CuIn1-xGaxSe2 thin-film solar cells** **E PI.27**

Polyxeni Tsoulka, Isabelle Braems, Nicolas Barreau, Sylvie Harel, Ludovic Arzel
IMN, UMR 6502, Université de Nantes, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France

16:30 **Investigation of optical gain in 1.55 µm p-i-n GaNAsBi-based DQWs** **E PI.28**

I. Guizani, K. Chakir, M. M. Habchi and A. Rebey*
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro-Epitaxies et Applications, 5019 Monastir, Tunisia

16:30 **Phase analysis of multicomponent photoreflectance spectra in GaAsBi/GaAs structure** **E PI.29**

I.Guizani, H. Fitouri I. Zaied and A. Rebey*
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro-Epitaxies et Applications, 5019 Monastir, Tunisia

16:30 **Strain-balanced GaAsN/GaAsBi type II double quantum wells operating at 1.3 and 1.55 µm** **E PI.30**

K. Chakir, I. Guizani, C. Bilel, A. Rebey
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro–Epitaxies et Applications, 5019 Monastir, Tunisia

16:30 **Influence of Chemical Post-deposition Treatment on the Structural Properties of ZnSnTe2 Thin Films** **E PI.31**

H. H. Güllü (1,2,*), Ö. Bayraklı (1,3,4), C. Emir (3), M. Terlemezoğlu (1,3,5), M. Parlak (1,3)
1 Center for Solar Energy Research and Applications (GÜNAM), 06800, Ankara, Turkey, 2 Central Laboratory, Middle East Technical University, 06800, Ankara, Turkey, 3 Department of Physics, Middle East Technical University, 06800, Ankara, Turkey, 4 Department of Physics, Ahi Evran University, 40100, Kırşehir, Turkey, 5 Department of Physics, Namık Kemal University, 59030, Tekirdağ, Turkey, *hgullu@metu.edu.tr

16:30 **Synthesis and Structural Characterizations on the (Cu,Ag)GaTe2 Thin Films Deposited on Si Nanowires** **E PI.32**

E. Coşkun (1), H. H. Güllü (2,3,*), Ö. Bayraklı (2,4,5), M. Terlemezoğlu (2,4,6), M. Parlak (2,4)
1 Department of Physics, Çanakkale Onsekiz Mart University, 17100 Çanakkale, Turkey, 2 Center for Solar Energy Research and Applications (GÜNAM), 06800, Ankara, Turkey, 3 Central Laboratory, Middle East Technical University, 06800, Ankara, Turkey, 4 Department of Physics, Middle East Technical University, 06800, Ankara, Turkey, 5 Department of Physics, Ahi Evran University, 40100, Kırşehir, Turkey, 6 Department of Physics, Namık Kemal University, 59030, Tekirdağ, Turkey, *hgullu@metu.edu.tr

16:30 **Ab initio Assessment of Bi1-xRExCuOS (RE=La, Gd, Y, Lu) Solid Solution for Water Splitting** **E PI.33**
Sheikha Lardhi, Antton Curutchet, Moussab Harb, Tangui Le Bahers
King Abdullah University of Science and Technology (KAUST)- KAUST Catalysis Center- Saudi Arabia. Univ Lyon- ENS de Lyon -CNRS-Université Claude Bernard Lyon-Laboratoire de Chimie UMR -France

16:30 **Optimization of Open Area for the Local Back Contact Metallization Structure of c-Si Solar Cell** **E PI.34**
Min Ji Lee, Jeong Eun Park, Young Min Lee, Sang Muk Kang, Donggun Lim*
Department of IT Convergence, Korea National University of Transportation

16:30 **Effect of dry plasma etching on minority charge carrier lifetime during silicon nanowires formation** **E PI.35**
I.A. Morozov1, A.S. Gudovskikh1, K.V. Emtsev K.V.2, V Sivakov3
1. St. Petersburg Academic University. Saint-Petersburg, Russia, 2. Research and development center for thin-film technologies in energetic. Saint-Peterburg.Russia, 3. Leibniz Institute of Photonic Technology. Jena. Germany.

16:30 **Alkali assisted improvement of Voc in Kesterite solar cells** **E PI.36**
Siddhartha Garud[1] [2], Sylvester Sahayaraj[2] [3], Bart Vermang [2] [3] [4], Samaneh Ranjbarrizi [2] [5], Guy Brammertz [4] [6], Marc Meuris [4] [6], Jef Poortmans [2] [3] [6]
[1]Delft University of Technology The Netherlands, [2]imec- partner in Solliance Belgium, [3] KU Leuven Belgium, [4] imec division IMOMEC - partner in Solliance Belgium, [5] I3N - Departamento de Física Universidade de Aveiro Portugal, [6] Institute for Material Research (IMO) Hasselt University Belgium

16:30 **Thin film radial junction silicon solar cells on silicon nanowire arrays** **E PI.37**
M. Müller, J. Červenka, J. Kočka, A. Fejfar
Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10/112, 162 00 Prague, Czech Republic

16:30 **Simulation of chalcopyrite-based dual-junction tandem solar cells using SCAPS-1D** **E PI.38**
Kihwan Kim, Jin Su Yu, Jun-Sik Cho, Jihye Gwak, S, Seung Kyu Ahn, Young-Joo Eo, Joo Hyung Park, Sejin Ahn, Ara Cho, Keeshik Shin, Kyung Hoon Yoon, and Jae Ho Yun
Photovoltaic Laboratory, Korea Institute of Energy Research, Daejeon 34129, Republic of Korea

16:30 **Remanent photopolarization effect in the photovoltaic BiFeO3** **E PI.39**
V. Iurchuk(1), F. Chevrier(1), R. Gumeniuk(2), D. Colson(3), A. Forget(3) and B. Kundys(1)
(1) Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504 CNRS-UdS 23 rue du Loess, 67034 Strasbourg, France (2) Institut für Experimentelle Physik, TU Bergakademie Freiberg, Leipziger Str. 23, 09596 Freiberg, Germany. (3) Service de Physique de l'Etat Condense, DSM/IRAMIS/SPEC, CEA Saclay URA CNRS 2464, 91191 Gif-Sur-Yvette Cedex, France

16:30 **Dye-sensitized solar cells using polyoxometalates: electrochemical investigation and TRMC measurements** **E PI.40**
Delphine Schaming [1], Antoine Bonnefont [2], Alexandre Hérissan [3], Jean-Christophe Lacroix [1], Laurent Ruhlmann [2], Christophe Colbeau-Justin [3]
[1] ITODYS, University Paris Diderot, Sorbonne Paris Cité, UMR 7086 CNRS, 13 rue Jean-Antoine de Baïf, 75013 Paris, France [2] Institut de Chimie, University of Strasbourg, UMR 7177 CNRS, 1 rue Blaise Pascal, 67000 Strasbourg, France [3] LCP, University Paris-Sud, Paris-Saclay, UMR 8000 CNRS, 91400 Orsay, France

16:30 **Metal oxide TiO2 as emitter in heterojunction solar cells** **E PI.41**
R. Chierchia, P. Mangiapane, L. Martini, L. Serenelli, F. Menchini, E. Salza, T. Dikonimos, M. Tucci
ENEA, Casaccia Research Center, via Anguillarese 301, 00123 Roma ITALY

16:30 **ALD Grown TiO2 Thin Films for Plasmonics and Photovoltaic Applications** **E PI.42**
Ezgi Aygun, Hisham Nasser, Ozan Akdemir, Raşit Turan, Alpan Bek
Ezgi Aygun (1,2,4), Hisham Nasser *(1,4), Ozan Akdemir (1,3,4), Raşit Turan (1,2,3,4), Alpan Bek (1,2,3,4) (1) The Center for Solar Energy Research and Applications (GÜNAM), 06800, Ankara, Turkey (2) Micro and Nanotechnology Graduate Program, 06800, Ankara, Turkey (3) Department of Physics, 06800, Ankara, Turkey (4) Middle East Technical University, 06800, Ankara, Turkey

16:30 **Study of the induced effects of ionizing radiations on the physical properties of ZnSe/CdTe heterojunction** **E PI.43**
L. Ion1, Sorina Iftimie1, A. Radu1, Nicoleta Vasile1, O. Toma1, Luminiţa Dan1, M.M. Gugiu2, S. Antohe1,3
1University of Bucharest, Faculty of Physics, Bucharest, Romania, 2Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania, 3Academy of Romanian Scientists, Bucharest, Romania

16:30 **Ultra fast charge carrier dynamics in hematite thin films** **E PI.44**
Carlos Serpa,1 João Pina,1 Paula Dias,2 João Azevedo,2
1 CQC, Department of Chemistry, University of Coimbra, 3004-535 Coimbra, Portugal, 2 LEPABE - Faculdade de Engenharia, Universidade do Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal

16:30 **EFFECTS OF SODIUM ADDITION ON NON-VACUUM BASED CuInSe2 THIN FILM SOLAR CELLS** **E PI.45**
Shanza Rehan1,2, Jihyun Moon,2,3 Young-Joo Eo1,2, Ara Cho1,2, Jihye Gwak1,2, Seung Kyu Ahn1,2, SeJin Ahn1,2 *
1 Renewable energy Engineering, University of Science & Technology (UST), DaeJeon, Korea 2 Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), DaeJeon,, Korea 3 Chungnam National University, DaeJeon, Korea

16:30 **Flexible synthesis of anatase TiO2 nanocrystallites for dye-sensitized solar cells applied at sunlight and room light conditions** **E PI.46**
Yu-Ling Guo, Chao-Kun Hung and Yu-Chun Wu
Department of Resource Engineering, National Cheng Kung University, Taiwan, ROC

16:30 **Efficiency Enhancement of ZnO/Si-based solar cell by using optimized metallic nanoparticles** **E PI.47**
Hichem Ferhati1, Fayçal Djeffal 1,2,* and Djemai Arar1
1LEA, Department of Electronics, University of Batna 2, Batna 05000, Algeria. 2LEPCM, University of Batna 1, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna2.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

16:30 **Pseudobinary bulk phase diagram of CuIn1-xGaxSe2** **E PI.48**
Polyxeni Tsoulka, Isabelle Braems, Nicolas Barreau, Sylvie Harel, Ludovic Arzel
IMN, UMR 6502, Université de Nantes, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France

16:30 **The new copper component for Si solar cells front electrode application** **E PI.49**
Katarzyna Gawlińska (1), Piotr Panek (1), Grzegorz Putynkowski (3), Robert P. Socha (2), Małgorzata Musztyfaga - Staszuk (4), Paweł Zięba (1)
(1) Institute of Metallurgy and Materials Science PAS, Reymonta 25, 30-059 Krakow, Poland (2) Institute of Catalysis and Surface Chemistry PAS, Niezapominajek 8, 30-239 Krakow, Poland (3) Research and Development Center of Technology for Industry, Złota 59, 00-120 Warsaw, Poland (4) Welding Department of Silesian University of Technology, , Konarskiego 18A, 44-100 Gliwice, Poland

16:30 **Mechanism of ZnO Nanoparticles Formation on ZnO Crystal by Nd:YAG Laser Radiation** **E PI.50**
Arturs Medvids□, Pavels Onufrijevs□, Liga Grase□, Ilze Birska□, Hidenori Mimura□ □
□Institute of Technical Physics, Faculty of Materials Science and Applied Chemistry, Riga Technical University, P. Valdena 3/7, Riga, LV-1048, Latvia □ □ Research Institute of Electronics of Shizuoka University, 3-5-1, Johoku, Naka-ku Hamamatsu 432-8011, Japan

16:30 **A new mixed-valence hybrid perovskite material with intermediate band for photovoltaic cell application** **E PI.51**
Lamjed Debbichi, Hyungjun Kim
Graduate School of Energy, Environment, Water, and Sustainability (EEWS), Korea Advanced Institute of Science and Technology (KAIST), Yuseong-gu, Daejeon 305-701, Korea.

16:30 **Tunable Band Gap CH3NH3PbI3-XBrX Films Fabricated by Thermal Co-Evaporation** **E PI.52**
Wiria Soltanpoor1.3*, Onur Yılmaz1,3, Mehmet Cem Şahiner2.3, Selçuk Yerci1,2,3
1 The Center for Solar Energy Research and Applications (GUNAM), Middle East Technical University, Ankara, 06800, Turkey 2 Department of Micro and Nanotechnology, Middle East Technical University, Ankara, 06800, Turkey 3 Department of Electrical and Electronics Engineering, Middle East Technical University, Ankara, 06800, Turkey

16:30 **Electrical and optical properties of PA-MBE p-ZnO:As/n-GaN heterojunctions for photovoltaic applications** **E PI.53**
E. Zielony1, E. Przezdziecka2, E. Placzek-Popko1, K. Paradowska1, K. Gwozdz1, Marcin Stachowicz2, Wojciech Lisowski3, A. Kozanecki2
1 Department of Quantum Technologies, Faculty of Fundamental Problems of Technology, Wroclaw University of Technology, Wybrzeze Wyspianskiego 27, 50-370 Wroclaw, Poland, 2 Institute of Physics, Polish Academy of Sciences,al. Lotnikow 32/46, 02-668 Warsaw, Poland, 3 Institute of Physical Chemistry, Polish Academy of Sciences, M. Kasprzaka 44/52, 01-224 Warsaw, Poland

16:30 **Carrier transport mechanisms in ZnO based heterostructures grown by atomic layer deposition method** **E PI.54**
E. Placzek-Popko1, K. Gwozdz1, E. Zielony1, R. Pietruszka2, B.S. Witkowski2, K. Kopalko2, M. Godlewski2,3
1Department of Quantum Technologies, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, Wybrzeze Wyspianskiego 27, PL50 370 Wroclaw, Poland, 2Institute of Physics, Polish Academy of Sciences, Aleja Lotników 32/46, PL-02668 Warsaw, Poland, 3Department of Mathematics and Natural Sciences College of Sciences, Cardinal Stefan Wyszynski University, Dewajtis 5, 01-815 Warsaw, Poland

16:30 **Surface states at the interface of n-ZnO nanorods/p-Si solar cells** **E PI.55**
K. Gwozdz1, E. Placzek-Popko1, E. Zielony1, R. Pietruszka2, B.S. Witkowski2, K. Kopalko2, M. Godlewski2,3
1Department of Quantum Technologies, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, Wybrzeze Wyspianskiego 27, PL50 370 Wroclaw, Poland, 2Institute of Physics, Polish Academy of Sciences, Aleja Lotników 32/46, PL-02668 Warsaw, Poland, 3Department of Mathematics and Natural Sciences College of Sciences, Cardinal Stefan Wyszynski University, Dewajtis 5, 01-815 Warsaw, Poland

16:30 **Seamless merging of perovskite nanocrystals** **E PI.56**
Chris de Weerd1, Leyre Gomez1, Junhao Lin2, Kazutomo Suenaga2, Yasufumi Fujiwara3, Tom Gregorkiewicz1
1 University of Amsterdam, 2 National Institute of Advanced Industrial Science and Technology, Japan, 3 Osaka University

18:30 **End of poster session**

Wednesday 24 May 2017

Light management I : Martina Schmid

09:00 **(invited) Tailored disorder for light trapping** **E VIII.1**
Aimi Abass, Stefan Nanz, Peter Piechulla, Alexander Sprafke, Ralf Wehrspohn, Carsten Rockstuhl
Institute of Nanotechnology, Karlsruhe Institute of Technology, 76021 Karlsruhe, Germany, Institute of Theoretical Solid State Physics, Karlsruhe Institute of Technology, 76131 Karlsruhe, Germany, Institute of Physics, Martin Luther University Halle-Wittenberg, 06120 Halle (Saale), Germany, Institute of Physics, Martin Luther University Halle-Wittenberg, 06120 Halle (Saale), Germany and School of Photovoltaics and Renewable Energy Engineering, University of New South Wales, NSW 2052, Sydney, Australia, Institute of Physics, Martin Luther University Halle-Wittenberg, 06120 Halle (Saale), Germany and Fraunhofer Institute for Mechanics of Materials IWM, 06120 Halle (Saale), Germany, Institute of Nanotechnology, Karlsruhe Institute of Technology, 76021 Karlsruhe, Germany, and Institute of Theoretical Solid State Physics, Karlsruhe Institute of Technology, 76131 Karlsruhe, Germany,

09:30 **Tailoring nano-textures for optimized light in-coupling in liquid phase crystallized silicon thin-film solar cells** **E VIII.2**
Grit Köppel, David Eisenhauer, Klaus Jäger, Bernd Rech, and Christiane Becker
Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Kekuléstrasse 5,12489 Berlin, Germany

09:45 **Super-efficient photon recycling in perovskite nanocrystals** **E VIII.3**
Chris de Weerd, Lucas Poirier, Antonio Capretti, Leyre Gomez, Tom Gregorkiewicz
University of Amsterdam

10:00 **Coffee break**

Advanced materials and nanostructures II : Otwin Breitenstein

10:30 **Metalorganic chemical vapour deposition and performance of CdS/CdTe junctions on ZnO nanorod arrays** **E IX.1**
C. Özcan 1,2,*, G. Kartopu 3, W. Hadibrata 1,4, P. Aurang 1,4 , H.E. Ünalan 1,4,5, V. Barrioz 6, Y. Qu 6, A.K. Gürlek 3, P. Maiello 6, S.J.C. Irvine 3 and S. Yerci 1,2,4
1 Centre for Solar Energy Research and Applications (GÜNAM), Middle East Technical University, 06800 Ankara, Turkey 2 Department of Electrical and Electronics Engineering, Middle East Technical University, 06800 Ankara, Turkey 3 Centre for Solar Energy Research, College of Engineering, Swansea University, OpTIC Centre, St. Asaph Business Park, LL17 0JD, UK 4 Micro and Nanotechnology Programme, Middle East Technical University, 06800 Ankara, Turkey 5 Department of Metallurgical Materials Engineering, Middle East Technical University, 06800 Ankara, Turkey 6 Department of Physics and Electrical Engineering, Ellison Building, Northumbria University, Newcastle upon Tyne NE1 8ST, UK

10:45 **Influence of hot carrier effects on electrical performance of a quantum well solar cell** **E IX.2**
Dac-Trung Nguyen[1,2], Laurent Lombez[1,2], François Gibelli[2], Myriam Paire[2], Soline Boyer-Richard[1,3], Olivier Durand[1,3] and Jean-François Guillemoles[1,2]
1 – Institut photovoltaïque d'Île-de-France (IPVF), 8 rue de la Renaissance, 92160 Antony, France, 2 – Institut de Recherche et Développement sur l'Energie Photovoltaïque (IRDEP), UMR 7174 CNRS-EDF-Chimie ParisTech, 6 quai Philippe Watier, Chatou, France, 3 – FOTON-OHM, UMR 6082 CNRS-INSA, 20 av. des Buttes de Coësmes, 35708 Rennes, France.

11:00 **Internally Stacked Cu2O/CuO Photovoltaic Layer with Expanded Absorption Band** **E IX.3**
Pei Loon Khoo, Kazuma Fukasawa, Naoki Yamashiro, Masakazu Kobayashi, Masanobu Izaki
Graduate School of Engineering, Toyohashi University of Technology, 1-1 Hibarigaoka, Tempaku-cho, Toyohashi-shi, Aichi, Japan.

11:15 **Investigation of the photovoltaic effect in BiFeO3 thin films** **E IX.4**
S. Yousfi1, B. Carcan1, F. Le Marrec1, H. Bouyanfif1, M. El Marssi1, S. Matzen2
1LPMC EA2081, Université de Picardie Jules Verne 33 Rue Saint Leu, 80000 Amiens, France , 2Institut d'Electronique Fondamentale, Université Paris Sud, F91405 Orsay cedex

11:30 **Absorber structural characteristics and heterojunction properties of thin film p-Cu2O/n-ZnMgO solar cells** **E IX.5**
Jatinder Kaur (1,2), Ole Bethge (2), Emmerich Bertagnolli (2), Theodoros Dimopoulos (1)
(1) AIT Austrian Institute of Technology, Center for Energy, Photovoltaic Systems, Vienna, Austria, (2) Vienna University of Technology, Institute for Solid State Electronics, Vienna, Austria

11:45 **Excitons in InGaAs/GaAsP multi quantum well and super lattice solar cell structures investigated by a photthermal spectroscopy** **E IX.6**
Tetsuo Ikari1, Kouki Matsuochi1, Tsubasa Nakamura1, Takeda Hideaki1, Hidetoshi Suzuki1, Kasidit Toprasertpong2, Masakazu Sugiyama2, Yoshiaki Nakano3 and Atsuhiko Fukuyama1
1Faculty of Engineering, University of Miyazaki, Miyazaki 889-2192, Japan 2School of Engineering, The University of Tokyo, Tokyo 113-0032, Japan 3Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo 113-0032, Japan

12:00 **Effect of barrier thickness on formation of miniband in InGaAs/GaAsP superlattice structure for solar cells application** **E IX.7**
Tsubasa Nakamura1, Kouki Matsuochi1, Takeda Hideaki1, Hidetoshi Suzuki1, Tetsuo Ikari1, Kasidit Toprasertpong2, Masakazu Sugiyama2, Yoshiaki Nakano3, and Atsuhiko Fukuyama1
1Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-Nishi, Miyazaki 889-2192, Japan, 2School of Engineering, The University of Tokyo, Bunkyo-ku, Tokyo 113-0032, Japan, 3Research Center for Advanced Science and Technology, The University of Tokyo, Bunkyo-ku, Tokyo 113-0032, Japan

12:15 **TiO2 nanoparticles: electronic photo-generation properties probed by EPR from suspension to thin films** **E IX.8**
B. Vileno(1), M. Twardoch(2), Y. Messai(1,4), O. Felix(2), P. Turek(1), J. Weiss(3), D. E. Mekkie(4), G. Decher(2), D. Martel(2)
1. Université de Strasbourg, CNRS, Institut de Chimie, Propriétés Optiques et Magnétiques des Architectures Moléculaires (POMAM), 4 rue Blaise Pascal, F 67000 Strasbourg, France, 2. Université de Strasbourg, CNRS, Institut Charles Sadron, 23 rue du lœss, F 67000 Strasbourg, France, 3. Université de Strasbourg, CNRS, Institut de Chimie, Chimie des Ligands à Architecture Contrôlée (CLAC), 1 rue Blaise Pascal, F 67000 Strasbourg, France, 4. Université Badji Mokhtar, Laboratoire d'Etude des Surfaces et Interfaces de la matière Solide (LESIMS), 23000 Annaba, Algeria.

12:30 **Lunch break**

Poster session II : Abdelilah Slaoui

14:00 **The first principal study of electronic and optical properties of the superlattices (BaHfO3)/ (BiFeO3)** **E PII.1**
Chaime. AZAHAF, Halima. ZAARI Hamid .EZ-ZAHRAOUY Abdelilah. BENYOUSSEF
LMPHE (URAC 12), Faculty of Sciences, University Mohammed V-Rabat, Morocco

14:00 **PREPARATION AND CHARACTERIZATION OF NANOSTRUCTURED NiO SOLAR CELL USING SPRAY PYROLYSIS TECHNIQUE: A REVIEW** **E PII.2**
UKOBA, KINGSLEY O, ELOKA-EBOKA, ANDREW and INAMBAO, FREDDIE
University of KwaZulu-Natal, Durban, South Africa

14:00 **Surface Plasmon effect of noble metal nanoparticles on photovoltaic properties of Silicon solar cells** **E PII.3**
Malek Atyaoui , Marwen Khalifa , Wissem Dimassi and Hatem Ezzaouia
Laboratoire de Photovoltaïque, Centre des recherches et des technologies de l'énergie, technopole de Borj-Cédria, PB :95,Hammam Lif 2050, Tunisia

14:00 **Improved performance of bulk-heterojunction solar cells via ZnO modification with novel additives** **E PII.4**
Chung-Kai Wu 1, Kundan Sivashnamugan 1, Tzung-Fang Guo 2, Yao-Jane Hsu 3 and Ten-Chin Wen 1*
1Department of Chemical Engineering, National Cheng Kung University, Tainan 70101, Tainan 2Institute of Electro-Optical Science and Engineering, National Cheng Kung University, Tainan 70101, Tainan 3National Synchrotron Radiation Research Center, Hsinchu Science Park, Hsinchu, Taiwan

14:00 **Wide bandgap photovoltaic chalcogenides: crystal and thin film materials** **E PII.5**
A. Thomere (1,2,3), C. Guillot-Deudon (1,3), N. Barreau (1,3), R. Bodeux (2,3), M. Caldes (1,3) and A. Lafond (1,3)
(1) Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS. 2 rue de la Houssinière, BP 32229, 44322 Nantes Cedex 3, France (2) EDF R&D, 6 Quai Watier, 78400 Chatou Cedex, France (3) Institut Photovoltaïque d'Ile-de-France (IPVF), 8, rue de la Renaissance 92160 Antony, France

14:00 **FABRICATION OF TIN SULFIDE SOLAR CELLS BY METAL ORGANIC CHEMICAL VAPOR DEPOSITION USING Sn(dmamp)2** **E PII.6**
Ji-Woon Choi, Gun Hwan Kim, Young Kuk Lee
Korea Research Institute of Chemical Technology

14:00 **Elaboration and deposition of silver nanoparticles on porous Silicon layer to enhance the optical and electrical properties** **E PII.7**
Marouan Khalifa, Malek Atyaoui, Hatem Ezzaouia
Semiconductor and Advanced Technology Nanostructured Laboratory, Research and Technology Centre on Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia

14:00 **Analysis for Different Materials Used as Up Converters When Incorporated in Bifacial Silicon Solar Cells Using the Program PC1-D** **E PII.8**
Aline Cristiane Pan, Leandro Santos Grassi Cardoso, Fernando Soares dos Reis
Solar Energy Technology Nucleus (NT-Solar), Pontifical Catholic University of Rio Grande do Sul, Av. Ipiranga, 6681, Porto Alegre, Cep: 90619-900, RS, Brazil

14:00 **Over 13% efficiency of flexible bandgap-graded Cu(In,Ga)Se2 solar cells by sputtering from a quaternary target without post-sele** **E PII.9**
Yao-Wen Zheng, Chung-Hao Cai, Wei-Chih Huang, Chia-Hao Hsu, Chih-Huang Lai
Department of material science and engineering, National Tsing Hua University, Hsinchu, Taiwan, 30013.

14:00 **A study of optical and electrical properties of Copper Bismuth Selenide Sulfide photovoltaic thin films** **E PII.10**
Yunong Liu#, Longfei Li#, Zhitao Yang, Yanbo Yang, Yuan He, Xiaolu Xiong, Dongyun Chen, Junfeng Han*
School of Physics, Beijing Institute of Technology, Beijing, 100081, China

14:00 **High-performance intermediate band solar cells based on ZnTe:Cr fabricated by pulsed laser deposition method** **E PII.11**
Kyoung Su Lee, Gyujin Oh, Dongil Chu, Sang Woo Pak, Eun Kyu Kim
Department of Physics, Hanyang University, Seoul 04763, Korea

14:00 **Theoretical band alignment for an hyperdoped material CuAlSe2/CuGaS2:Cr/ZnSe heterostructure** **E PII.12**
P. Palacios(a,b),J.E. Castellanos Águila (a,c), J. Arriaga (c), J.C. Conesa (d), P. Wahnon (a,e)
(a)Instituto de Energía Solar, Universidad Politécnica de Madrid, 28040 Madrid, Spain, (b)Dpt. FAIAN, Universidad Politécnica de Madrid, ETSI Aeronáutica y del Espacio, 28040 Madrid, Spain,(c) Instituto de Física, Benemérita Universidad Autónoma de Puebla, Av. San Claudio y 18 Sur, C.U. 72570 Puebla, Mexico, (d) Instituto de Catálisis y Petroleoquímica, CSIC, Marie Curie 2, Cantoblanco, 28049 Madrid, Spain, (e) Dpt. TFB, Universidad Politécnica de Madrid, ETSI Telecomunicación, 28040 Madrid, Spain

14:00 **Kesterite Cu2ZnSnS4: Solid state synthesis in scalable amounts via low-cost and green mechanochemical process** **E PII.13**
1Peter Baláž, 1Matej Baláž, 2Michal Hegedüs, 1Anna Zorkovská, 3Marcela Achimovičová, 1Matej Tešínsky
1Institute of Geotechnics, Slovak Academy of Sciences, Košice, Slovakia 2Institute of Chemistry, P. J. Šafárik University, Košice, Slovakia 3Institute of Mineral and Waste Processing, Waste Disposal and Geomechanics, Technical University Clausthal, Clausthal-Zellerfeld, Germany

14:00 **Cu2O as a potential intermediate transparent conducting oxide layer for perovskite-CIGSe tandem solar cells** **E PII.14**
Yajie Wang, Alexander Steigert, Guanchao Yin, Iver Lauermann, Martha Ch. Lux-Steiner, Rutger Schlatmann, Reiner Klenk
Yajie Wang, Alexander Steigert, Guanchao Yin, Iver Lauermann, Martha Ch. Lux-Steiner, Rutger Schlatmann, Reiner Klenk Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany Yajie Wang, Martha Ch. Lux-Steiner Freie Universität Berlin, Fachbereich Physik, Arnimallee 14, 14195 Berlin, Germany

14:00 **Light trapping for crystalline silicon photovoltaic cells coupled with solar-pumped lasers** **E PII.15**
Yasuhiko Takeda, Tadashi Ito, Noboru Yamada, Kazuo Hasegawa, Shintaro Mizuno, Tadashi Ichikawa, Hideo Iizuka, Kazuo Higuchi, Hiroshi Ito, Akihisa Ichiki, and Tomoyoshi Motohiro
Toyota Central Research and Development Laboratories, Inc., Green Mobility Research Institute, Nagoya University

14:00 **Photovoltaic Properties of Multilayer GaAs Nanowire Arrays** **E PII.16**
Dapan Li1, Ning Han*2, Johnny C. Ho*1
1, Department of Physics and Materials Science, City University of Hong Kong, Hong Kong, People's Republic of China, 2, State Key Laboratory of Multiphase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, People's Republic of China

14:00 **Optimized SnO2/TiO2/CZTS tandem structure for photovoltaic conversion** **E PII.17**
Anca Duta, Alexandru Enesca, Maria Covei, Dana Perniu
R&D Centre: Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

14:00 **Efficiency enhancement of bifacial CZTS thin films solar cells: optimizing the electronic transport in the TCO back contact** **E PII.18**
Idris Bouchama1,2,*, Dilmi Melouki1, Salim Ali Saoucha1 and Djeffal faycal3
1 Département d'Electronique, Faculté de Technologie, Université de Msila, Alegria. 2 Laboratoire d'Electrochimie et Matériaux, Université Ferhat Abbas de Sétif, Algeria. 3LEA, Département d'Electronique, Faculté de Technologie, Université de Batna, Batna 05000, Algeria *Bouchama.idris@yahoo.fr

14:00 **Crystallographic and optical properties of Cu(In,Ga)3Se5** **E PII.19**
Kenta Ueda, Tsuyoshi Maeda, Takahiro Wada
Department of Materials Chemistry, Ryukoku University

14:00 **Photovoltaic effect of MoS2 thin films deposited on Si substrate by liquid exfoliation method** **E PII.20**
Seung Kyo Lee, Dongil Chu, Da Ye Song, Sang Woo Park, and Eun Kyu Kim
Quantum-Function Research Laboratory and Department of Physics, Hanyang University, Seoul 04763, Republic of Korea

14:00 **AlAs diffusion barrier for III-V multijunction solar cells improvement** **E PII.21**
K.S. Zelentsov, A.S. Gudovskikh, N.A. Kalyuzhnyy, S.A. Mintairov
Saint-Petersburg Academic University, Hlopina str. 8/3, St.-Petersburg, 194021, Russia, Ioffe Physical-Technical Institute RAS, Polytechnicheskaya str. 26, St.-Petersburg, 194021, Russia

14:00 **Imaging the single phase region in Cu2ZnSnS4 thin films** **E PII.22**
Alexandra Davydova, Katharina Rudisch, Jonathan Scragg
Ångström Solar Center, Uppsala University, Sweden

14:00 **Effect of Na and K addition on properties of CZTS thin films prepared by ultrasonic spray technique** **E PII.23**
M. Sekkati1, M. Taibi2, M. Regragui1, G. Schmerber3, F. Cherkaoui El Moursli1, Z. Sekkat1,4, A. Dinia3, A. Slaoui5 and M. Abd-Lefdil1
1Mohammed V University, Materials Physics Laboratory, P.B. 1014, Rabat - Morocco. 2Mohammed V University, LPCMIO, Ecole Normale Supérieure Rabat- Morocco, 3Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, CNRS UMR 7504, 23 rue du Loess, B.P. 43, F-67034 Strasbourg Cedex 2, France. 4Moroccan Foundation for Advanced Science, Innovation and Research, MAScIR, Optics & Photonics Center, Morocco. 5ICube UMR 7357, 23 rue du Loess - BP 20 CR - 67037 Strasbourg Cedex 2, France

14:00 **Fabricating SnS thin film using electrochemical deposition method** **E PII.24**
Chen Siyi, Saif Haque, Paul Wilde
Department of Chemistry, Imperial College London

14:00 **Selenium flow optimization for Cu(In,Ga)Se2 growth on polyimide substrates** **E PII.25**
V. Achard, J. Posada, M. Jubault, , T. Hildebrandt, D. Lincot, N. Naghavi, F. Donsanti EDF R&D, 6 quai Watier, 78400 CHATOU Cedex, FRANCE - V. Achard, M. Jubault, T. Hildebrandt, F. Donsanti CNRS, 6 quai Watier, 78400 CHATOU Cedex, FRANCE - D. Lincot, N. Naghavi IRDEP, 6 quai Watier, 78400 CHATOU Cedex, FRANCE - V. Achard, J. Posada, M. Jubault, T. Hildebrandt, D. Lincot, N. Naghavi, F. Donsanti Institut Photovoltaïque d'Ile de France, 8 Rue de la Renaissance, 92160 ANTONY, France - V. Achard, J. Posada, M. Jubault, T. Hildebrandt, D. Lincot, N. Naghavi, F. Donsanti

14:00 **Influence of rare earth (Nd and Tb) co-doping on ZnO thin films properties** **E PII.26**
A. El fakir1, M. Sekkati1, G. Schmerber2, A. Belayachi1, M. Regragui1 Z.Sekkat3, A.Dinia2, A. Slaoui4 and M. Abd-Lefdil1
1Mohammed V University, faculty of Sciences, Materials Physics Laboratory, P.B. 1014, Rabat - Morocco, 2Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, CNRS UMR 7504, 23 rue du Loess, B.P. 43, F-67034 Strasbourg Cedex 2, France, 3Moroccan Foundation for Advanced Science, Innovation and Research, MAScIR, Optics & Photonics Center, Morocco, 4ICube UMR 7357, 23 rue du Loess - BP 20 CR - 67037 Strasbourg Cedex 2, France

14:00 **Optimization of the deposition process of Cu-Se interlayer for CIGS solar cells** **E PII.27**
Jae-Cheol Park1, Mowafak Al-Jassim2, Tae-Won Kim1
1 Energy and applied optics research group, Korea Institute of Industrial Technology, Gwangju, Republic of Korea 2 National Renewable Energy Laboratory, National Center for Photovoltaics, Golden, CO, USA

14:00 **Deposition of PbS quantum dots by spin-assisted successive precipitation and anion exchange reaction** **E PII.28**
Min Hyeok JANG, Jin Hyuck HEO and Sang Hyuk IM
Functional Crystallization Center (ERC), Department of Chemical Engineering, Kyung Hee University, Youngin-si, Gyeonggi-do, Republic of Korea (all of the authors)

14:00 **Antimony sulfide selenide mixed sensitized solar cells using hydrazine solution process** **E PII.29**
Min Ho Lee, Jin Hyeok Heo, Sang Hyuk Im
Functional Crystallization Center (FCC), Department of Chemical Engineering, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin-si, Gyeonggi-do 446-701, Republic of Koreas

14:00 **Semitransparent CIGS-based solar cells prepared by co-evaporation** **E PII.30**
Jun-Sik Cho, Jae Hun Jo, Eunseok Jang, Kihwan Kim, Jihye Gwak, Jae Ho Yun, Seung Kyu Ahn, Ara Cho
Korea Institute of Energy Research

14:00 **ACIGS thin film solar cell using the hybrid ink with Se@Ag2Se core-shell** **E PII.31**
Ara Cho1, 2*, Shahara Banu1, 2, SeJin Ahn1, 2, Jae Ho Yun1, 2, Jihye Gwak1, 2, Seung Kyu Ahn1, 2, Young-Joo Eo1, 2, Jun Sik Cho1, 2, Ju Hyung Park1, Jin Su Yu1, 2, Kihwan Kim1
1New and Renewable Energy Research Division, Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), Daejeon, South Korea, 2 University of Science and Technology (UST), Daejeon, South Korea

14:00 **Properties of CuInSe2 Thin Film Grown on Graphene by Electrochemical System** **E PII.32**
Mucahit Yilmaz, Adem Akdag, Erdal Sonmez
Department of Metallurgical and Material Science, S.A.C. Engineering Faculty, Necmettin Erbakan University, Seydisehir, Konya, Department of Nanoscience&Nanoengineering, Graduate School of Natural and Applied Sciences, Ataturk University, Erzurum, Turkey, Department of Physics Education, K.K. Education Faculty, Atatürk University, Erzurum, Turkey

14:00 **Ultrafast photocarrier dynamics at p-n junction of CIGS/Zn-based buffer layers measured by optical pump-THz probe spectroscopy** **E PII.33**
Woo-Jung Lee1, Dae-Hyung Cho1, Jae-Hyung Wi1, Hye-Jung Yu1, Won Seok Han1, Jung Min Bae2, Mann-Ho Cho2, Jaehun Park3, Yong-Duck Chung1,4*
1ICT Materials Technology Research Laboratory, Electronics and Telecommunications Research Institute, Daejeon 34129, Korea 2Insitute of Physics and applied physics, Yonsei University, Seoul 03722, Korea 3Pohang Accelerator Laboratory, Pohang University of Science and Technology, Pohang 37673, Korea 4Department of Advanced Device Engineering, Korea University of Science and Technology, Daejeon 34113, Korea

14:00 **Investigation of electron transporting layers based on sol-gel titanium dioxide in terms of performances of perovskite solar cel** **E PII.34**
Z. Starowicz1, K. Gawlińska1, J. Walter2, M. Lipiński1.
1. Institute of Metallurgy and Materials Science of Polish Academy of Sciences, 25 Reymonta Str. 30-059 Cracow, Poland , 2. Tadeusz Kościuszko Cracow University of Technology, 24 Warszawska Str., 31-155 Cracow, Poland

14:00 **The Effect of CdCl2 Treatment on CdZnTe Thin Films** **E PII.35**
Cigdem Dogru1,2, Ozge Bayrakli1,2,3, Makbule Terlemezoglu1,2,4, and Mehmet Parlak1,2
1. Department of Physics, Middle East Technical University (METU), Ankara 06800, Turkey 2. Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey 3. Department of Physics, Ahi Evran University, Kırsehir 40100, Turkey 4. Department of Physics, Namik Kemal University, Tekirdag 59030, Turkey

14:00 **Physical Properties and device application of CZTSSe thin films deposited by thermal evaporation method** **E PII.36**
Makbule Terlemezoglu1,2,3, Ozge Bayrakli1,2,4, Hasan H. Gullu 2,5 , Tahir Çolakoglu2 and Mehmet Parlak1,2
1Department of Physics, Middle East Technical University (METU), Ankara 06800, Turkey 2Center for Solar Energy Research and Applications (GÜNAM), METU, Ankara 06800, Turkey 3Department of Physics, Namik Kemal University, Tekirdag 59030, Turkey 4Department of Physics, Ahi Evran University, Kırsehir 40100, Turkey 5Central Laboratory, Middle East Technical University, Ankara 06800, Turkey

14:00 **Surface modification of AZO film deposited on ultra-thin flexible glass by laser texturing** **E PII.37**
Zeynep Demircioğlu, Engin Özkol, Hisham Nasser, and Raşit Turan
Department of Physics, Middle East Technical University, Dumlupınar Blvd. No: 1, 06800 Ankara, TURKEY, The Center for Solar Energy Research and Applications (GÜNAM), Middle East Technical University, Dumlupınar Blvd. No: 1, 06800 Ankara, TURKEY, The Center for Solar Energy Research and Applications (GÜNAM), Middle East Technical University, Dumlupınar Blvd. No: 1, 06800 Ankara, TURKEY, Department of Physics, Middle East Technical University, Dumlupınar Blvd. No: 1, 06800 Ankara, TURKEY, The Center for Solar Energy Research and Applications (GÜNAM), Middle East Technical University, Dumlupınar Blvd. No: 1, 06800 Ankara, TURKEY

14:00 **Point contacts at the Cu(In, Ga)Se2/Zn(O,S) interface.** **E PII.38**
Binoy Chacko1,2*, Marc Daniel Heinemann1, Dieter Greiner1 , Martha Ch. Lux-Steiner1,2 , Rutger Schlatmann1 and Iver Lauermann1
1. Institute Competence Centre Photovoltaics Berlin (PVcomB), Helmholtz-Zentrum Berlin für Materialien und Energie, Schwarzschildstraße 3, 12489 Berlin, Germany. 2. Freie Universität Berlin, Fachbereich. Physik, Arnimallee 14, D- 14195 Berlin, Germany.

14:00 **Effect of substrate on properties of high vacuum evaporated tin selenide thin films** **E PII.39**
O.Volobujeva*, N.Revathi, S.Bereznev, N. Maticuc, E.Mellikov
Department of Materials and Environmental Technologies, Tallinn University of Technology, Ehitajate tee 5, 19086, Tallinn, Estonia

14:00 **Characterization of Cu(In,Ga)Se2 thin films grown on soda-lime glass substrates by pulsed laser deposition** **E PII.40**
Ch.Nicolaou1, A. Zacharia2, G. Itskos2, J. Giapintzakis1
1 Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus, 2 Experimental Condensed Matter Physics Lab, Department of Physics, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus

14:00 **The Photovoltaic effect in BiFeO3 thin films** **E PII.41**
S. Yousfi1, B. Carcan1, F. Le Marrec1, H. Bouyanfif1, M. El Marssi1, S. Matzen2
1LPMC EA2081, Université de Picardie Jules Verne 33 Rue Saint Leu, 80000 Amiens, France, 2Institut d'Electronique Fondamentale, Université Paris Sud, F91405 Orsay cedex

14:00 **Ab initio Simulation of Ag/Me and Me/G Interface in New Generation Contacts for Solar Cells** **E PII.42**
Weiping Gong1, Zhaohui Guo1, Weidong Xie1, Min Liu1, S. Sidorenko2, S. Zamulko2, M. Fedorov2, S. Voloshko2, G. Kholmska2
1 Laboratory of Electronic Functional Materials, Huizhou University, PRC, 2 Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.

14:00 **Characterizations of Zn(S, O) Buffer Layers Prepared by Highly Deposited Rate Chemical Bath Deposition Process** **E PII.43**
Wei-Tse Hsu, Sheng-Wen Chan, Chia-Ming Chang, Lung-Teng Cheng, Yu-Yun Wang, Chou-Cheng Li, Hsiang-Hsien Wu, Wei-Sheng Lin, Jen-Chuan Chang, Chien-Rong Huang, Edward Tam, Tung-Po Hsieh, Song-Yeu Tsai
Green Energy & Environment Research Laboratories, Industrial Technology Research Institute, 31040, Hsinchu, Taiwan: Wei-Tse Hsu, Sheng-Wen Chan, Chia-Ming Chang, Lung-Teng Cheng, Yu-Yun Wang, Chou-Cheng Li, Hsiang-Hsien Wu, Wei-Sheng Lin, Jen-Chuan Chang, Chien-Rong Huang, Tung-Po Hsieh, Song-Yeu Tsai, Hanky & Partners (Taiwan) Ltd.: Edward Tam

14:00 **MD Simulation of the Sub-Surface Ti Layers Structural Transformation Induced by the Presence of Graphene** **E PII.44**
Weiping Gong1, Zhaohui Guo1, S. Sidorenko2, S. Konorev2, S. Voloshko2
1 Laboratory of Electronic Functional Materials, Huizhou University, PRC, 2 Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.

14:00 **Numerical analysis of structural disorder effects for the design of plant-inspired light harvesting coatings** **E PII.45**
Benjamin Fritz (1), Ruben Hünig (2), Raphael Schmager (3), Michael Hetterich (1,4), Uli Lemmer (1,3), Guillaume Gomard (1,3)
(1) Light Technology Institute (LTI), Karlsruhe Institute of Technology (KIT), Engesserstrasse 13, 76131 Karlsruhe, Germany (2) Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Industriestrasse 6, 70565 Stuttgart, Germany (3) Institute of Microstructure Technology (IMT), Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany (4) Institute of Applied Physics (APH), Karlsruhe Institute of Technology (KIT), Wolfgang-Gaede-Strasse 1, 76131 Karlsruhe, Germany

14:00 **Amplification of Light Energy Conversion at Q-CdTe Sensitized Titania Photonic Crystals and Stability in Selenide** **E PII.46**
Ali S. Nehme, Nour Beydoun, Fatima Haydous, Lara Halaoui
Department of Chemistry, American University of Beirut, Beirut 110236, Lebanon

14:00 **Pulsed regime investigation for AZO film deposition by sputtering** **E PII.47**
R. Chierchia, L. Martini, L. Serenelli, F. Menchini, E. Salza, G. Stracci, M. Tucci
ENEA, Casaccia Research Center, via Anguillarese 301, 00123 Roma ITALY

14:00 **Influence of Cu doping on physical properties of SnO2 thin films prepared by cost effective spray pyrolysis technique** **E PII.48**
A. Hadri1, C. Nassiri1, F. Z. Chafi1, A. E. Hat1, B. Fares1 , L. Laanab2, A. Mzerd1
1 University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco. 2 University Mohammed V, Faculty of Sciences, Physics Department, LCS, Rabat, Morocco.

14:00 **As-modified Si(100) surface preparation in CVD ambient for high-efficiency III-V on Si tandem absorbers** **E PII.49**
Agnieszka Paszuk, Andreas Nägelein, Oliver Supplie, Sebastian Brückner, Peter Kleinschmidt and Thomas Hannappel
TU Ilmenau, Institute for Physics, Photovoltaics, Ilmenau, Germany

14:00 **Microphotoluminescence investigation of the doping level in single GaAs crystals epitaxially grown on silicon for multijunction** **E PII.50**
A. Jaffre1, J. Alvarez1, D. Mencaraglia1, J.P. Connolly1, T. Moliere2, L. Vincent2, G. Hallais2, C. Renard2 and D. Bouchier2
1)GeePs-CentraleSupelec, UMR CNRS 8507, Université Pierre et Marie Curie, Université Paris-Sud, 11 rue Joliot Curie, Plateau de Moulon, 91192, Gif-sur-Yvette, France, 2)Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Sud, Université Paris-Saclay, C2N - Orsay, 91405 Orsay cedex, France

14:00 **Equivalent circuit topology of tandem solar cell with tunnel junction interconnection** **E PII.51**
Jakub Holovský, Federico Ventosinos, Jan Klusáček, Tomáš Finsterle, J-W. Schüttauf, Vítězslav Benda
CTU in Prague, Faculty of Electrical Engineering, Institute of Physics of the Czech Academy of Sciences, Czech Republic, LPICM École Polytechnique, France, Institute of Physics of the Czech Academy of Sciences, Czech Republic, CTU in Prague, Faculty of Electrical Engineering, Czech Republic, EPFL, IMT, Photovoltaics and Thin-Film Electronics Laboratory, Neuchâtel, Switzerland, CTU in Prague, Faculty of Electrical Engineering, Czech Republic

14:00 **Advanced characterization of both up- and down-converted emission yield in materials co-doped by rare-earth elements** **E PII.52**
J. Valenta (a), M. Greben (a), A. Repko (b,c), D. Niznansky (b), T. Zikmund (d), J. Lancok (d)
(a) Faculty of Mathematics & Physics, Charles University, Prague, Czechia. (b) Faculty of Sciences, Charles University, Prague, Czechia. (c) Institute of Physics, Slovak Academy of Sciences, Bratislava, Slovakia. (d) Institute of Physics, Czech Academy of Sciences, Prague, Czechia.

14:00 **Improvement of luminescent characteristics of orthovanadate Down-conversion materials** **E PII.53**
O.V. Chukova*1, S.G. Nedilko1, A.A.Slepets1, S.A. Nedilko1, T.A. Voitenko1, V. Sheludko2
1Taras Shevchenko National University of Kyiv, 64/13, Volodymyrska Str., 01601 Kyiv, Ukraine 2 Oleksandr Dovzhenko Hlukhiv National Pedagogical University, 24 Kyjevo-Moskovs'ka Street, 41400 Glukhiv, Ukraine

14:00 **Luminescent Downshifting Layer (LDSL) using organic and QD fluorophores** **E PII.54**
Charlène Crevant (1,2), Christophe Lucchesi (2), Myriam Paire(1,2), Jean-François Guillemoles (2,3)
1 EDF R&D, IRDEP Institute of research and development for photovoltaic energy, 6 quai Watier 78401 Chatou, France , 2 IPVF, Institut Photovoltaïque d'Ile-de-France, 8 rue de la Renaissance 92160 Antony, France , 3 CNRS UMR7174, IRDEP Institute of research and development for photovoltaic energy, 6 quai Watier 78401 Chatou, France

14:00 **Simple deposition of gold nanoparticles for plasmon-enhanced dye-sensitised solar cell efficiency of 9%** **E PII.55**
Mira Tul Zubaida Butt [1,2], Joe Briscoe [2], Xuan Li [2], and Habib ur Rehman [1]
[1] Department of Chemistry, Syed Babar Ali School of Science and Engineering, Lahore University of Management Sciences, Pakistan, [2] Materials Research Institute, Queen Mary University of London, UK

15:45 **Coffee break**

16:15 **E-MRS plenary session and awards**

Thursday 25 May 2017

Multi-junction devices I : Hitoshi Sai

09:00 **(invited) Quantum engineered III-V dilute nitride solar cells for tandem applications.** **E X.1**
Alex Freundlich
University of Houston

09:30 **Atomistic structure of Si/GaAs interfaces fabricated by surface-activated bonding at room temperature** **E X.2**
Yutaka Ohno[1], Hideto Yoshida[2], Seiji Takeda[2], Liang Jianbo[3], Naoteru Shigekawa[3]
IMR, Tohoku University[1], ISIR, Osaka University[2], Osaka-City University[3]

09:45 **Characterization of GaP/Si heterojunctions by space charge capacitance measurements** **E X.3**
A. I. Baranov, A. S. Gudovskikh, I. A. Morozov, A. M. Mozharov, E. V. Nikitina, K. S. Zelentsov, A. Darga, S. Le Gall, J.- P. Kleider
1,2, 1,3, 1, 1, 1, 1, 2, 2, 2. 1 St Petersburg Academic University of RAS, St Petersburg, Russia. 2 GeePs (Group of electrical engineering – Paris), UMR CNRS 8507, CentraleSupélec, Univ. Paris-Sud, Université Paris-Saclay, Sorbonne Universités, UPMC Univ Paris 06, Gif-sur-Yvette CEDEX, France. 3 St Petersburg Electrotechnical University «LETI», St Petersburg, Russia.

10:00 **Coffee break**

Silicon and beyond III : Masafumi Yamaguchi

10:30 **(invited) Recent progress in thin-film silicon solar cells and related technologies** **E XI.1**
Hitoshi Sai, Takuya Matsui, Koji Matsubara
Research Center for Photovoltaics, National Institute of Advanced Industrial Science and Technology (AIST), Central 2, Umezono 1-1-1, Tsukuba, Ibaraki 305-8568, Japan

11:00 **Comparison of FTPS performed on thin films and devices** **E XI.2**
N. Puspitosari, C. Longeaud, Li Zeyu, Pere Roca i Cabarrocas
GEEPS, CNRS (UMR 8507 CNRS), CentraleSupelec, Université Paris Sud XI, Université Pierre et Marie Curie, 11 rue Joliot Curie, 91190 Gif sur Yvette, France IPVF, Institut Photovoltaïque d'Ile de France, 8 rue de la Renaissance, 92160 Antony, France LPICM, CNRS, Ecole Polytechnique, Université Paris-Saclay, 91128 Palaiseau, France

11:15 **Morphologic dependent characteristics of amorphous silicon thin films for surface passivation** **E XI.3**
Sebastian Gerke 1), Marilyne Sousa 1), Marina Krumova 2), Stefanie Ebert 2), Reinhart Job 3), Barbara Terheiden 2)
1) IBM Research – Zurich, 2) University of Konstanz, 3) Münster University of Applied Sciences

11:30 **(invited) Advanced Local Characterization of Silicon Solar Cells** **E XI.4**
Otwin Breitenstein, Felix Frühauf, Jan Bauer
Max Planck Institute of Microstructure Physics, Halle, Germany

12:00 **Lifetime-improving treatments after process-induced degradation of Gallium Phosphide on Silicon heterojunction solar cells** **E XI.5**
Médéric Descazeaux, Maxime Darnon, Mickael Martin, Jeremy Moeyaert, Delfina Muñoz, Thierry Baron
CEA-LITEN, INES, 50 avenue du Lac Léman, 73377 Le Bourget-du-Lac, France - Univ. Grenoble Alpes, CNRS, LTM, Grenoble, France , Univ. Grenoble Alpes, CNRS, LTM, Grenoble, France , Univ. Grenoble Alpes, CNRS, LTM, Grenoble, France , Univ. Grenoble Alpes, CNRS, LTM, Grenoble, France , CEA-LITEN, INES, 50 avenue du Lac Léman, 73377 Le Bourget-du-Lac, France , Univ. Grenoble Alpes, CNRS, LTM, Grenoble, France

12:15 **Sputtered Tungsten Oxide for Hole Contacts of Silicon Heterojunction Solar Cells** **E XI.6**
Mathias Mews, Antoine Lemaire, Lars Korte, Bernd Rech
Institute of Silicon Photovoltaics, Helmholtz-Zentrum Berlin

12:30 **Lunch break**

Light management II : Aimi Abass

14:00 **(invited) Optical concepts for CIGS solar cells** **E XII.1**
Martina Schmid
Helmholtz-Zentrum Berlin & University of Duisburg-Essen

14:30 **3D optical modelling of heterojunction silicon solar cells including nano and micro textures** **E XII.2**
Žiga Lokar, Janez Krč, Benjamin Lipovšek, Marko Topič
University of Ljubljana, Faculty of Electrical Engineering

14:45 **Capturing light with wave-optical traps on thin and ultra-thin solar cells** **E XII.3**
Manuel J. Mendes, Olalla S. Sobrado, Sirazul Haque, Andreia Araújo, Antonio Vicente, Andriy Lyubchyk, Tiago Mateus, Hugo Águas, Elvira Fortunato and Rodrigo Martins
i3N/CENIMAT, Department of Materials Science, Faculty of Science and Technology, Universidade NOVA de Lisboa and CEMOP/UNINOVA, Campus de Caparica, 2829-516 Caparica, Portugal

15:00 **Nanostructured high dielectric semiconductor ultrathin films with enhanced broadband absorption in the visible and NIR regime.** **E XII.4**
Juan Luis Garcia-Pomar, Pau Molet, Cristiano Matricardi, Miquel Garriga, Maria Isabel Alonso, Agustín Mihi
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Catalonia, Spain

15:15 **AZO/Ag/AZO thin films as anti-reflecting flexible transparent electrode** **E XII.5**
Giacomo Torrisi, Antonio Terrasi
University of Catania and IMM-CNR, Italy

15:30 **Broadband-sensitive upconversion of Er3+, Ni2+-co-doped perovskites for solar energy harvesting** **E XII.6**
Yasuhiko Takeda, Hom Nath Luitel, and Shintaro Mizuno
Toyota Central Research and Development Laboratories, Inc.

15:45 **Eu(III) coordination complexes as downshifters for CIGS solar cells** **E XII.7**
Anatolie Gavriluta, Thomas Fix, Aline Nonat, Charlène Crevant, Abdelilah Slaoui, Jean-François Guillemoles, Loïc J. Charbonnière
Anatolie Gavriluta, Charlène Crevant, Jean-François Guillemoles, Institut Photovoltaïque d'Ile de France (IPVF), 8 rue de la Renaissance, 92160 Antony, France Anatolie Gavriluta, Thomas Fix, Abdelilah Slaoui, ICube Laboratory, Université de Strasbourg and CNRS, 23 rue du Loess BP 20 CR, 67037 Strasbourg Cedex 2, France Anatolie Gavriluta, Aline Nonat, Loïc J. Charbonnière, LIMAA, IPHC, UMR 7178 CNRS, Université de Strasbourg, ECPM, 25 rue Becquerel, 67087 Strasbourg Cedex, France Charlène Crevant, Jean-François Guillemoles, Institute of R&D on Photovoltaic Energy (IRDEP), UMR 7174, CNRS-EDF-Chimie ParisTech, 6 Quai Watier-BP 49, 78401 Chatou Cedex, France François Guillemoles, NextPV, The University of Tokyo, Komaba campus, LIA CNRS-RCAST-U. Bordeaux, Tokyo Japan

Light management III : Antonio Marti

09:00 **Nd & Yb co-doped SnOx functional thin films by reactive magnetron sputtering as a UV photons converter layers for solar cells** — E XIII.1
K. Bouras1*, D. Aureau2, G. Schmerber3, H. Rinnert4, G. Ferblantier1, A. Dinia3 and A. Slaoui1
1 ICube, CNRS-Université de Strasbourg, UMR 7357, 23 rue du Loess, BP 20 CR, 67037 Strasbourg Cedex 2, France 2 ILV, Université de Versailles-St-Quentin en Yvelines, UMR 8180, 45 avenue des Etats Unis, 78000 Versailles, France 3 IPCMS, CNRS-Université de Strasbourg UMR 7504, 23 rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France 4IJL, Université de Lorraine-CNRS, UMR 7198, Boulevard des Aiguillettes, 54506 Vandœuvre-l`es-Nancy, France

09:15 **A metamaterial sunlight down-converter for improved photovoltaics** — E XIII.2
Antonio Capretti, Arnon Lesage and Tom Gregorkiewicz
University of Amsterdam

09:30 **Upconversion rare-earth-doped nanoparticles for hybrid perovskite solar cells** — E XIII.3
Mathilde Schoenauer Sebag, Karmel De Oliveira, Jiangbin Zhang, Artem Bakulin, Michel Mortier, Patrick Gredin, Lionel Aigouy, Zhuoying Chen
1 – LPEM, CNRS-UMR 8213 , ESPCI Paris 2 – Institut de Recherche de Chimie de¨Paris, UMR 8247 CNRS, Chimie ParisTech 3 - Faculty of Natural Sciences, Department of Chemistry, Imperial College London

09:45 **Solar cells with solution-processed absorber layers made of colloidal CuInS2 nanocrystals** — E XIII.4
Holger Borchert, Dorothea Scheunemann, Harald Reinhold, Rany Miranti, Sebastian Wilken, Jürgen Parisi
University of Oldenburg, Department of Physics, Energy and Semiconductor Research Laboratory, Carl-von-Ossietzky Str. 9-11, 26129 Oldenburg, Germany

10:00 **Coffee break**

Multi-junction devices II : Alex Freundlich

10:30 **(invited) Large-area scalable perovskite-based multi-junction solar modules** — E XIV.1
Tom Aernouts, Manoj Jaysankar, Weiming Qiu, Tamara Merckx, Robert Gehlhaar, Maarten Debucquoy, Ulrich W. Paetzold, Erik Ahlswede, Jef Poortmans
imec, imec, imec, imec, imec, imec, KIT, ZSW, imec and KULeuven

11:00 **Efficiency Limit of Perovskite/Si Tandem Solar Cells** — E XIV.2
Moritz H. Futscher, Bruno Ehrler
AMOLF, Center for Nanophotonics, Science Park 104, 1098 XG Amsterdam, The Netherlands

11:15 **Efficient and Stable Semi-transparent Planar Perovskite Solar Cells Prepared by Partial Ion Exchange for Tandem Applications** — E XIV.3
Fan Fu, Stefano Pisoni, Thomas Feurer, Aneliia Wäckerlin, Shiro Nishiwaki, Ayodhya N. Tiwari, Stephan Buecheler
Empa – Swiss Federal Laboratories for Material Science and Technology

11:30 **INVESTIGATION OF METHYL AMONIUM LEAD IODIDE PEROVSKITE BASED TANDEM SOLAR CELLS** — E XIV.4
S M Iftiquar and Junsin Yi
College of Information and Communication Engineering, Sungkyunkwan University, Suwon, 440-746, Korea

11:45 **Functionalized Top-Kesterite Back Contacts For Bottom-Silicon Tandem Solar Cells** — E XIV.5
M. Espindola-Rodriguez1, P. Bellanger4, A. G. Ulyashin3, Y. Sánchez1, D. Sylla1, H. Xie1, M. Neuschitzer1, V.Izquierdo-Roca1, A. Pérez-Rodríguez 1,2, E. Saucedo1, S. Roques4, M. Placidi1 and A. Slaoui4.
1. Catalonia Institute for Energy Research, IREC. Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs (Barcelona), Spain. 2. IN2UB, Departament d'Electrònica, Universitat de Barcelona, C. Martí i Franquès 1, 08028 Barcelona, Spain. 3 SINTEF Materials and Chemistry, Forskningsveien 1, P.O. Box 124 Blindern, NO-0314 Oslo Norway. 4 Laboratoire ICUBE (University of Strasbourg-CNRS), 23 rue du Loess, F-67037 Strasbourg cedex 2, France.

12:00 **Operation of the three terminal heterojunction bipolar transistor solar cell** — E XIV.6
A.Martí, E. Antolín, P.G. Linares, E. López, J. Villa and I.Ramiro
Instituto de Energía Solar - Universidad Politécnica de Madrid

Closing : Janez Krc, Ivan Gordon, Abdelilah Slaoui, Shigeru Niki, Gavin Conibeer

12:15 **Symposium closing** — E XIV.7
Janez Krc (1), Ivan Gordon (2), Abdelilah Slaoui (3), Shigeru Niki (4), Gavin Conibeer (5)
(1) University of Ljubljana, Slovenia, (2) IMEC, Belgium, (3) CNRS-ICUBE, France, (4) AIST, Japan, UNSW, Australia

12:30 **Lunch**

E-MRS

2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

F

SYMPOSIUM F

Photocatalytic materials for energy and environment

Symposium Organizers :

Anne MORRISSEY, Dublin City University, Ireland

Giuliana IMPELLIZZERI, CNR – IMM, Catania, Italy

J. Anthony BYRNE, Ulster University, U.K.

Vincent ARTERO, Université Grenoble Alpes-CEA-CNRS, France

Selected papers to be published in a special issue of Catalysis Today

Monday 22 May 2017

09:00 **Welcome**

Photocatalytic (Water Treatment) I : Giuliana Impellizzeri

09:15 **n-p Junctions as Vis-active Photocatalytic Materials (Invited)** **F I.1**
Anca Duta, Alexandru Enesca, Dana Perniu, Maria Covei, Luminita Isac
R&D Centre: Renewable Energy Systems and Recycling, Translvania University of Brasov, Romania

09:45 **Enhanced photocatalytic performance of novel electrospun BN/TiO2 composite nanofibers** **F I.2**
Maryline Nasr, Roman Viter, Cynthia Eid, Roland Habchi, Philippe Miele and Mikhael Bechelany
Maryline Nasr, Philippe Miele, Mikhael Bechelany: Institut Européen des Membranes IEM UMR-5635, Université de Montpellier, ENSCM, CNRS, Place Eugène Bataillon, F-34095 Montpellier Cedex 5, France. Maryline Nasr, Cynthia Eid, Roland Habchi: EC2M, Faculty of Sciences and Research Platform for Nanosciences and Nanotechnologies, Lebanese University, Campus Pierre Gemayel, Fanar, 90656, Lebanon. Roman Viter: Institute of Atomic Physics and Spectroscopy, University of Latvia, 19 Raina Blvd., LV 1586 Riga, Latvia

10:00 **Multifunctional ZnO-PES fibre mats for water membrane technology.** **F I.3**
Maria Elena Fragalà, Giulia Ognibene, Gianluca Cicala
Maria Elena Fragalà, Dipartimento di Scienze Chimiche and INSTM UdR Catania, Università di Catania, Viale A. Doria 6- 95100 Catania (Italy), Giulia Ognibene, Dipartimento di Ingegneria Civile e Architettura (DICAR), Università di Catania, Viale A. Doria 6- 95100 Catania (Italy), Gianluca Cicala, Dipartimento di Ingegneria Civile e Architettura (DICAR) and INSTM, Università di Catania, Viale A. Doria 6- 95100 Catania (Italy),

10:15 **Coffee Break**

Photocatalytic (Water Treatment) II : Suresh Pillai

10:45 **Paper and polyester TiO2 platforms for UV sensing and photocatalysis (Invited)** **F II.1**
D. Nunes, A. Pimentel, T.R. Calmeiro, A. Araujo, L. Santos, S. Nandy, J.V. Pinto, P. Barquinha, E. Fortunato and R. Martins
i3N/CENIMAT, Department of Materials Science, Faculty of Sciences and Technology, Universidade NOVA de Lisboa and CEMOP/UNINOVA, Campus de Caparica, 2829-516 Caparica

11:15 **Bi2O3 / Nexar® polymer nanocomposite membrane for visible photocatalytic applications** **F II.2**
S. Filice1-2, D. D'Angelo1, D. Iannazzo3, G. Compagnini2 and S. Scalese1
1 CNR-IMM, Ottava Strada n.5, I-95121 Catania, Italy 2 Dipartimento di Scienze Chimiche, Università di Catania, viale A. Doria 6, 95125 Catania, Italy 4 Dipartimento di Ingegneria Elettronica, Chimica e Ingegneria Industriale, Università degli Studi di Messina, Contrada di Dio, I-98166, Messina (Italy)

11:30 **Morphology and photocatalytic properties of simultaneous and separated precipitated Ag/ZnO structures via USP** **F II.3**
Gözde Alkan (1), Lidia Muñoz-Fernandez (2), Olivera Milošević (3), Maria Rabanal (2), Bernd Friedrich (1)
1- IME Process Metallurgy and Metal Recycling, Intzestraße 3, 52072 Aachen, Germany. 2- University Carlos III of Madrid and IAAB, Department of Materials Science and Engineering and Chemical Engineering, Avda.Universidad 30, 28911 Leganes, Madrid, Spain. 3- Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, KnezMihailova 35/IV, 11000 Belgrade, Serbia.

11:45 **Synthesis of ZnO/PMMA composites for photocatalytic applications** **F II.4**
M. Cantarella (1), A. Di Mauro (1), G. Nicotra (2), G. Pellegrino (1), A. Gulino (3), V. Privitera (1), G. Impellizzeri (1)
(1) CNR-IMM, Via S. Sofia 64, 95123 Catania, Italy, (2) CNR-IMM, Z.I. VIII Strada 5, 95121 Catania, Italy, (3) Department of Chemical Sciences, University of Catania, and INSTM UdR of Catania, Viale A. Doria 6, 95125 Catania, Italy

12:00 **Morphology and crystallinity control on photocatalytic and photoluminescence properties of SrWO4 microstructures** **F II.5**
Nadine DIRANY, Madjid ARAB, Jean Christophe VALMALETTE, Jean Raymond GAVARRI
Université de TOULON Institut Matériaux Microélectroniques et Nanosciences de Provence IM2NP UMR CNRS 7334. BP 20130 - Bat.R.017 -83130. LA GARDE. FRANCE

12:15 **PHOTOCATALYTIC DEGRADATION OF CATIONIC AND ANIONIC DYES IN WATER USING HYDROGEN- TERMINATED SILICON NANOWIRES AS CATALYST** **F II.6**
N. Brahitia, T.Hadjersi, S. Amirouche, H. Menari, O. ElKechai
- Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique (CRTSE), 2 Bd. Frantz Fanon, B.P. 140 Alger-7 Merveilles, Algiers, Algeria (hadjersi@yahoo.com). - Université Mouloud MAMMERI de TiziOuzou, faculté des Sciences, Algiers, A

12:30 **Lunch**

Photocatalytic Materials (Water Treatment) : Anca Duta

14:00 **New insights into solar and visible light active photocatalysis (Invited)** **F III.1**
Suresh C. Pillai1,2
1Centre for Precision Engineering, Materials and Manufacturing Research (PEM), Institute of Technology Sligo, Ireland, 2Nanotechnology and bio-engineering Research Group, Department of Environmental Science, Institute of Technology Sligo, Ireland

14:30 **Anomalous Enhancement in Photocatalytic Rate by Stabilizing a Metastable Phase in a BiFeO3-Based Photocatalyst** **F III.2**
Bastola Narayan1*, Sangeeta Adhikari2, Giridhar Madras2 and Rajeev Ranjan1
1 Department of Materials Engineering, Indian Institute of Science Bangalore-560092, India 2 Department of Chemical Engineering, Indian Institute of Science Bangalore-560012, India

14:45 **Heterostructured photocatalytic material and the influence of its architecture** **F III.3**
Shanmugapriya PERIYANNAN, Catherine HENRIST, Rudi CLOOTS, Wolfram JAEGERMANN, Andreas KLEIN
Greenmat Laboratory, Department of Chemistry, University of Liege, Belgium. Surface science division, Department of Materials science, Technical University of Darmstadt, Germany.

15:00 **Photocatalytic ZnO-cellulose composite paper manufactured on a paper machine** **F III.4**
Mats Sandberg (1), Karl Håkansson (2), Hjalmar Granberg (2)
(1) RISE Acreo (2) RISE Bioeconomy

15:15 **Graphitic Carbon Nitride/Fe-MOF photocatalyst for visible light induced dye degradation and bacterial inactivation** **F III.5**
D. Vidyasagar, S.G. Ghugal, A. Kulkarni, N. Revathi, R. Sasikala and S.S. Umare
D. Vidyasagar, S.G. Ghugal, S.S. Umare,Department of Chemistry, Visvesvaraya National Institute of Technology, Nagpur 440010, India. A. Kulkarni,CSIR-National Environmental Engineering Research Institute, Nagpur 440010, India. N. Revathi,Department of Materials and Environmental Technologies, Tallinn University of Technology, 19086Tallinn, Estonia. R. Sasikala,Chemistry Division, Bhabha Atomic Research Centre Trombay, Mumbai 400085, India.

15:30 **NARROWING BANDGAP ENERGY OF DEFECTIVE BLACK TITANIA AND ITS APPLICATION ON PHOTOCATALYTIC OXIDATION OF GLYCEROL** **F III.6**
Trin Jedsukontorn*, Tomonaga Ueno, Nagahiro Saito, Mali Hunsom
Fuels Research Center, Department of Chemical Technology, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand (e-mail: trinatabo_jed@hotmail.com), Graduate School of Engineering & Green Mobility Collaborative Research Center, Nagoya University, Aichi, Japan, Graduate School of Engineering & Green Mobility Collaborative Research Center, Nagoya University, Aichi, Japan, Fuels Research Center, Department of Chemical Technology, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand

15:45 **Enhancement in Rate of Photocatalysis Upon Catalyst Recycling** **F III.7**
Kalpesh Sorathiya, Biswajit Mishra and Deepa Khushalani
Materials Chemistry Research Group, Department of Chemical Sciences, Tata Institute of Fundamental Research, Homi Bhabha Rd, Colaba, Mumbai, India 400005

Poster Session I Photocatalytic water treatment and materials : Giuliana Impellizzeri

16:00 **Removal of azo dye by ZnO-CuO semiconductors** **F PI.1**
Warathorn Chumchoochart, Anussara Intarasena, and Suwat Nanan
Materials Chemistry Research Center, Department of Chemistry, Faculty of Science, Khon Kaen University, Khon kaen 40002, Thailand

16:00 **Fermi level shifting of Copper-Modified Graphene Oxide** **F PI.2**
Jyoti Shakya T. Mohanty
Jawaharlal Nehru University New Delhi

16:00 **NEW MATERIAL VIA REACTION-DIFFUSION: SYNTHESIS, CHARACTERIZATION AND PHOTO-CATALYTIC ACTIVITY OF CADMIUM-ALUMINUM LAYERED DOUBLE** **F PI.3**
Daniel Saliba, Mohammad Hmadeh and Mazen Al-Ghoul
Department of Chemistry, American University of Beirut, Beirut, Lebanon

16:00 **Synthesis and characterization of the powder silver phosphate Ag3PO4 by sol-gel method** **F PI.4**
H. EL MASAOUDI*, A.Gouza**, A.Laghzizil**, B. Jaber***, M. BENAISSA*
* LMPHE, URAC-12, Faculty of Sciences, Mohammed V University, Rabat, Morocco, ** Laboratory of Chimie-Physique Générale, Faculty of Sciences, Mohammed V University, Rabat, Morocco, *** Materials Science Platform, UATRS Division, CNRST, Rabat, Morocco

16:00 **Photoelectrochemical investigations in lead-free Ba(Ti0.950Sc0.025Nb0.025)O3 ferroelectric ceramics.** **F PI.5**
N. Haddadou, N. Bensemma, G. Rekhila, M. Trari and K. Taïbi
* N. Haddadou, N. Bensemma, K. Taïbi, Crystallography-Thermodynamics Laboratory, Faculty of Chemistry, USTHB, P.O. Box 32, 16111 Algiers, Algeria , * N. Bensemma, Nuclear Research Centre of Birine, Ain Oussara, Djelfa, Algeria, * G. Rekhila, M. Trari, Laboratory of Storage and Valorization of Renewable Energies, Faculty of Chemistry, USTHB, P.O. Box 32, 16111 Algiers, Algeria

16:00 **Photoelectrodeposition Effect of Modified Ceria Particles on The Removal of Lead (II) Ions from Water** **F PI.6**
Jiratchaya Ayawanna, Kazunori Sato
School of Ceramic Engineering, Suranaree University of Technology, Muang, Nakhon Ratchasima 30000, Thailand, Department of Materials Science and Engineering, Nagaoka University of Technology, Nagaoka, Niigata 940-2188, Japan

16:00 **Characterization of photocatalyst deactivation on wood wool cement composite under indoor and outdoor conditions** **F PI.7**
F. Gauvin, Q.L. Yu, H.J.H. Brouwers
Department of the Built Environment, Eindhoven University of Technology P.O. Box 513, 5600 MB Eindhoven,The Netherlands

16:00 **Physicochemical and photocatalytic properties of ZnO-TiO2 nanomaterials: Effect of the preparation method and the ZnO/(ZnO+TiO2)** **F PI.8**
Omar Zegaoui, Abderrahim EL Mragui and Ikram Daou
Research Team “Materials and Applied Catalysis: MCA”, Moulay Ismaïl University, Faculty of Sciences, Department of Chemistry, PO Box 11201 Zitoune, Meknès, Morocco

16:00 **Effect of CQD on the photo-absorption, photo-response and photo-catalytic activity of KNb3O8 nanosheets** **F PI.9**
Xiaobin Liu, Wenxiu Que
Electronic Materials Research Laboratory, International Center for Dielectric Research, Xi?an Jiaotong University, Xi?an 710049, Shaanxi, People?s Republic of China

16:00 **Synthesis and visible photocatalytic properties of photoactive systems: BaO, ZnO, BaZnO and CaBaZnO** **F PI.11**
Ammar Houas1,2*, Fahad Hacen Saeeree1, Abueliz Khalid Modwi1
1 Department of Chemistry, College of Sciences, Al Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh 11623, Saudi Arabia 2 Unité de Recherche Catalyse et Matériaux pour l’Environnement et les Procédés (URCMEP), Université de Gabès, Campus Universitaire-Cité Erriadh, 6072 Gabès, Tunisia 3 Chemistry Department, College of Science, Sudan University of Science and Technology, Khartoum, Sudan

16:00 **Sol- gel synthesized Cu5% doped ZnO: physico-chemical properties and photocatalytic activity** **F PI.12**
A. Modwi1,2 Ammar Houas1,3
1 Department of Chemistry, College of Sciences, Al Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh 11623, Saudi Arabia 2 Chemistry Department, College of Science, Sudan University of Science and Technology, Khartoum, Sudan 3 Unité de Recherche Catalyse et Matériaux pour l’Environnement et les Procédés (URCMEP), Université de Gabès, Campus Universitaire-Cité Erriadh, 6072 Gabès-Tunisia

16:00 **Enhanced Visible-Light Photocatalytic Performance of Electrospun rGO/TiO2 Composite Nanofibers** **F PI.13**
Maryline Nasr, Sébastien Balme, Cynthia Eid, Roland Habchi, Philippe Miele and Mikhael Bechelany
Maryline Nasr, Sébastien Balme, Philippe Miele, Mikhael Bechelany: Institut Européen des Membranes IEM UMR-5635, Université de Montpellier, ENSCM, CNRS, Place Eugène Bataillon, F-34095 Montpellier Cedex 5, France. Maryline Nasr, Cynthia Eid, Roland Habchi: EC2M, Faculty of Sciences and Research Platform for Nanosciences and Nanotechnologies, Lebanese University, Campus Pierre Gemayel, Fanar, 90656, Lebanon.

16:00 **Development of ZnO- Ag2O/AgCO3 heterostructures nanocomposite via phase transformation route for photocatalytic application** **F PI.14**
Nurafiqah Rosman a,b, W.N.W. Salleh a,b*, Mohamad Azuwa Mohamedc, A.F. Ismaila,b, J. Jaafara,b , Zawati Harund
a Advanced Membrane Technology Research Centre (AMTEC), Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia. b Faculty of Chemical and Energy Engineering, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia. c Fuel Cell Institute (SELFUEL), Universiti Kebangsaan Malaysia,43600 UKM Bangi, Selangor, Malaysia. d Integrated Material and Process, Advanced Materials and Manufacturing Centre (AMMC), Faculty of Mechanical and Manufacturing Engineering, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Johor Darul Takzim, Malaysia.

16:00 **Study of Catalytic Coating on the Basis of Nanoscale WO3 under the Conditions of Corona Discharge Plasma in Air** **F PI.15**
Sergey Karabanov, Dmitry Suvorov, Gennady Gololobov, Maria Serpova, Vladimir Vasilev, Sergey Kruglov, Andrey Serezhin
Ryazan State Radio Engineering University

16:00 **Photocatalytic ZnO structures grown by Atomic Layer Deposition on photo-oxidized polyetherimides for water purification.** **F PI.16**
Giovanna Pellegrino, Sabrina Carola Carroccio, Vittorio Privitera, Giuliana Impellizzeri
CNR-IMM, Via S. Sofia n.64, 95123 Catania, Italy

16:00 **Novel polymeric materials based on r-GO/Porphyrin systems for photocatalytic applications** **F PI.10**
Martina Ussia*, Emanuela Spina (1), Daniele Vitalini (1), Sabrina Carola Carroccio (2), Vittorio Privitera (2)
*CNR-IMM, Via Santa Sofia 64, 95123 Catania, Dipartimento di Fisica e Astronomia, Via Santa Sofia 64, 95123 Catania, martina.ussia@ct.infn.it, (1) CNR-IPCB, Via Paolo Gaifami 18, 95125 Catania, (2) CNR-IMM, Via Santa Sofia 64, 95123 Catania, Vittorio. Privitera@imm.cnr.it

16:00 **Photoelectrochemical properties of TiO2 nanotubes decorated by Ag nanoparticles deposited by means of Pulsed Laser Deposition (P** **F PI.17**
Khaled Trabelsi, Anouar Hajjeji, My Ali El Khakani, Brahim Bessais
Institut nationale de la recherche scientifique, INRS-énergie, matériaux et télécommunications, Qc, Canada , Laboratoire de photovoltaïque, centre de recherches et des technologies de l énergie, Tunisie.

16:00 **Microwave-assisted synthesis of ZnSe:Mn and ZnSe nanostructures in the form of 2D nanoplates for photocatalytic application** **F PI.18**
Katarzyna Matras-Postolek1, Svitlana Sovinska1, Adam Zaba1,Dariusz Bogdal1, Ping Yang2
1. Faculty of Chemical Engineering and Technology, Cracow University of Technology, Warszawska St. 24, Krakow, 31-155 Poland 2. School of Material Science and Engineering, University of Jinan, Jinan 250022, PR China

16:00 **Synthesis and photocatalytic property of V2O5@TiO2 core-shell microspheres towards gaseous benzene** **F PI.19**
Yueli Liu, Linlin Wang, Min Zhou, Chao Zhang, Wei Jin, Wen Chen*
State Key Laboratory of Silicate Materials for Architectures, School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, P. R. China

16:00 **Photocatalytic decomposition characteristics of ZnO nanowires array grown on foam nickel substrate** **F PI.20**
Guo-an Cheng, Liang Yang, Quan Zhang, Xiaolu Yan, Peng Meng, Yu-long Wu, Rui-ting Zheng, Xiao-ling Wu
College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, China

16:00 **Efect of Pr Dopant on the Photocatalytic and Adsorption Behavior of TiO2** **F PI.21**
Yasemen KALPAKLI
Yıldız Technical University, Department of Chemical Engineering

16:00 **Photocatalytic dispersions based on TiO2-CuxS-Ag for self-decontamination fabrics** **F PI.22**
Cristina Bogatu, Dana Perniu, Luminita Isac, Maria Covei, Anca Duta
R&D Centre: Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

16:00 **MAPLE transfer and immobilization of ZnO/graphene oxide nanocomposites for photocatalytic applications** **F PI.23**
A. Datcu1, O. Pascu1, R. M. Ivan1, C. Logofatu2, A. Pérez del Pino3, E. György1,3*
1 National Institute for Lasers, Plasma and Radiation Physics, P. O. Box MG 36, 76900 Bucharest, Romania, 2 National Institute for Materials Physics, P. O. Box MG 7, 77125 Bucharest, Romania, 3 Consejo Superior de Investigaciones Científicas, Instituto de Ciencia de Materiales de Barcelona (CSIC-ICMAB), Campus UAB, 08193 Bellaterra, Spain

16:00 **Photocatalytic iron oxide / graphene oxide nanocomposite material synthesized by laser techniques** **F PI.24**
A. Datcu1, A. Queraltó1,2, C. Logofatu3, A. Pérez del Pino4, E. György1,4*
1 National Institute for Lasers, Plasma and Radiation Physics, P. O. Box MG 36, 76900 Bucharest, Romania, 2 Institute of Inorganic Chemistry, University of Cologne, Greinstr. 6, 50939 Cologne, Germany, 3 National Institute for Materials Physics, P. O. Box MG 7, 77125 Bucharest, Romania, 4 Consejo Superior de Investigaciones Científicas, Instituto de Ciencia de Materiales de Barcelona (CSIC-ICMAB), Campus UAB, 08193 Bellaterra, Spain

16:00 **CZTS-based thin films for chemical and electrical solar energy conversion** **F PI.25**
D. Perniu, C. Bogatu, M. Covei, A. Duta
R&D Centre: Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

16:00 **Functionalized 2D nano materials for environmental and energy applications** **F PI.26**
Diptiman Dinda and Shyamal Kumar Saha
Senior Research Fellow Dept. of Materials Science Indian Association for the Cultivation of Science Jadavpur, Kolkata-32, Indai

16:00 **Solution based synthesis of Cobalt Nickel tungstates as efficient photocatalysts** **F PI.27**
M. Moschogiannaki 1,2, M. Charalampakis,1,2, L. Zouridi,1,4 G. Kiriakidis1,2,3, V. Binas1,2,3
1. Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2. University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece 3. Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece 4. University of Crete, Department of Chemistry, 710 03 Heraklion, Crete, Greece

16:00 **ZnO thin films deposited by RF-magnetron sputtering of ZnO powder target: effective technology for large scale production** **F PI.28**
A.V. Vasin*, A.V. Rusavsky*, E.G. Bortchagovsky,* V.V. Strelchuk*, Ya.V. Pirko**, S. Pruchnal***, W. Skorupa***, A.N. Nazarov*,
*Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine,
**Institute of food biotechnology and genomics, NAS of Ukraine, Kyiv, Ukraine,
***Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany,

16:00 **Mechanical milling effect of TiO2 nanoparticles on the photo-generation of Reactive Oxygen Species (ROS) in aqueous suspension** **F PI.29**
Y. Messai (a,b), B. Vileno (b), D. Martel (c), P. Turek (b) and D.E. Mekki (a)
(a) Université Badji Mokhtar, Laboratoire d'Etude des Surfaces et Interfaces de la matière Solide (LESIMS), 23000 Annaba, Algeria (b) Université de Strasbourg, CNRS, Institut de Chimie, UMR 7177, Propriétés Optiques et Magnétiques des Architectures Moléculaires (POMAM), 1 rue Blaise Pascal, F 67000 Strasbourg, France. (c) Université de Strasbourg, CNRS, Institut Charles Sadron, 23 rue du Loess, F 67000 Strasbourg, France

16:00 **Toward smart textiles: new coatings for photocatalytic decontamination** **F PI.40**
P. Barrois, O. Félix, G. Decher, V. Keller
Institut de Chimie et Procédés pour l?Energie, l?Environnement et la Santé, Strasbourg Institut Charles Sadron, Strasbourg, France

16:00 **Facile and Scalable Synthesis of Black-TiOx for Environmental Water Purification** **F PI.30**
Massimo Zimbone#, Giuseppe Cacciato#, Mohamed Boutinguiza*, Vittorio Privitera# and Maria Grazia Grimaldi#,§
CNR-IMM, via S. Sofia n.64, I-95123 Catania (Italy). *Departamento de Física Aplicada, E.T.S. Ingenieros Industriales de Vigo, Rúa Maxwell, s/n, Campus Universitario 36310 Vigo, Spain § Dipartimento di Fisica e Astronomia, Università degli Studi di Catania, viale Andrea Doria 6, I-95125 Catania (Italy)

16:00 **Removal of lead (II) ions from aqueous solution using ZnO and Ca doped ZnO nanopowder: equilibrium, thermodynamic, and kinetics** **F PI.31**
I. Ghiloufi1,2, J. El Ghoul1,2, A.Modwi1, I. AlShunaifi3, L. ElMir 1,2
1Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Riyadh, Saudi Arabia 2Laboratory of Physics of Materials and Nanomaterials Applied at Environment (LaPhyMNE), Faculty of Sciences, Gabes University, Tunisia. 3King Abdulaziz City for Science and Technology (KACST), National Center for Combustion & Plasma Technology, Riyahd, Saudi Arabia.

16:00 **Titania thin films by chemical spray pyrolysis as photocatalytic materials for air purification** **F PI.32**
Ibrahim Dündar1, Atanas Katerski1, Marina Krichevskaya2, Ilona Oja Acik1, Malle Krunks1
1Laboratory of Thin Film Chemical Technologies, Department of Materials and Environmental Technology, School of Engineering, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia 2Laboratory of Environmental Technology, Department of Materials and Environmental Technology, School of Engineering, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

16:00 **ZnO layers with rod-like crystals grown by spray of alkaline solutions for photocatalytic applications** **F PI.34**
I. Gromyko, T. Dedova, S. Polivtseva, D. Klauson, A. Katerski, M. Danilson, V. Mikli, I. Oja Acik, M. Krunks
Department of Materials and Environmental Technology Tallinn University of Technology Ehitajate tee 5, 19086 Tallinn, Estonia

16:00 **Removing Pollutants from Indoor Atmosphere: Green Synthesis of a New Generation of Photocatalizers operating in Visible Light** **F PI.41**
Enrico Greco (1), Jing Shang (2), Donatella Capitani (3), Valeria Di Tullio (3), Fabio Ziarelli (4) Stéphane Viel (5), Enrico Ciliberto (1),
(1) Department of Chemical Sciences, University of Catania, viale A. Doria 6, 95125, Catania, Italy, (2) College of Environmental Sciences and Engineering Peking University, 5 Yiheyuan Rd, 100871, Beijing, China, (3) Magnetic Resonance Laboratory ?Annalaura Segre?, Institute of Chemical Methodologies, CNR, Research Area of Rome 1, via Salaria km. 29.500, 00015 Monterotondo, Roma, Italy, (4) Aix-Marseille Universite, CNRS, Federation des Sciences Chimiques de Marseille (FR 1739), 13397 Marseille, France, (5) Aix-Marseille Université, CNRS, ICR (UMR 7273), 13397 Marseille, France

16:00 **MoS2/TiO2/Si nanowires as an effective substrate for the photocatalytic degradation of organic pollutants under visible light** **F PI.35**
Abderrahmane Hamdi1, 2, 3, Hatem Ezzaouia2, Rabah Boukherroub1 and Yannick Coffinier1
1Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, IEMN, UMR CNRS 8520, Avenue Poincaré, BP 60069, 59652 Villeneuve d'Ascq, France. 2 Laboratory of Semiconductors, Nano-structures and Advanced Technologies, Research and Technology Centre of Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia 3 Faculty of Science of Bizerte, University of Carthage, 7021 Zarzouna, Tunisia

16:00 **Enhanced photocatalytic activity of metal-modified g-C3N4** **F PI.36**
W.B. Zhang, Z.J. Zhang, S.W. Kwon, S.L. Zhang, Woochul Yang
Department of Physics, Dongguk University

16:00 **Approaches for enhanced photocatalytic activity: improving photocatalytic efficiency, immobilization and reusability** **F PI.42**
P.M. Martins1,2, Paula A. A. P. Marques3, V. Sebastian4,5, A.R. Silva1, L.Pereira2, M.M. Alves2, S. Lanceros-Méndez1,6,7
1Center of Physics, 2Center of Biological Engineering, University of Minho, 4710-057 Braga, Portugal, 3TEMA/Department of Mechanical Engineering, University of Aveiro, 3810-193 Aveiro, Portugal, 4Department of Chemical Engineering. Aragon INA, University of Zaragoza, Campus Río Ebro-EdificioI+D, C/ Poeta Mariano Esquillor S/N, 50018-Zaragoza, Spain, 5CIBER de Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), C/ Monforte de Lemos 3-5, Pabellón 11, 28029 Madrid, 6BCMaterials, Parque Científico y Tecnológico de Bizkaia, Ed. 500, Derio 48160, Spain, 7IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain

16:00 **Synthesis and physico-chemical studies of metal doped zinc oxide nanoparticles and its photocatalysis** **F PI.37**
I. Ghiloufi1,2, J. El Ghoul1,2, A. Modwi1, I. AlShunaifi3, L. ElMir 1,2
1Al Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Sciences, Riyadh, Saudi Arabia 2Laboratory of Physics of Materials and Nanomaterials Applied at Environment (LaPhyMNE), Faculty of Sciences, Gabes University, Tunisia. 3King Abdulaziz City for Science and Technology (KACST), National Center for Combustion & Plasma Technology, Riyahd, Saudi Arabia.

16:00 **Controlled synthesis and enhanced photocatalytic performance of Eu3+ and La3+-codoped BiOCl ultrathin nanosheets** **F PI.38**
Y.Y. Guo, Z.J. Zhang, S.L. Zhang, Woochul Yang
Department of Physics, Dongguk University

16:00 **Nanostructured semiconducting metal oxides fabricated on microstructured aluminum foil for the photocatalytic water purification** **F PI.39**
Aleksey Baglov, Liudmila Khoroshko
Department of Micro- and Nanoelectronics, Belarusian State University of Informatics and Radioelectronics

16:00 **Photocatalytic coatings of optical fibers for deep and turbid water purification** **F PI.43**
S. Teixeira1, B. Magalhães2, P.M. Martins2,3, K. Kühn,1, S. Lanceros-Méndez2,4,5 and G. Cuniberti1,6,7
1 Institute for Materials Science and Max Bergmann Center of Biomaterials, Technische Universität Dresden, Dresden, Germany, 2 Center of Physics, University of Minho, 4710-057 Braga, Portugal, 3 Center of Biological Engineering, University of Minho, 4710-057 Braga, Portugal, 4 BCMaterials, Parque Científico y Tecnológico de Bizkaia, Ed. 500, Derio 48160, Spain, 5 IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain, 6 Dresden Center for Computational Materials Science, 7Center for Advancing Electronics Dresden, Technische Universität Dresden, Dresden, Germany.

19:00 **End of Poster Session I**

Materials for Water Splitting : J. Anthony Byrne

08:30 **Synthesis of CdS-MoS2 and CdS-WS2 Heterostructures for Efficient Photocatalytic Hydrogen Evolution (Invited)** — F IV.1
Junze Chen, Hua Zhang
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore

09:00 **Influence of laser treatments on TiO2 based Nanoparticles for photocatalytic water splitting** — F IV.2
Roberto Fiorenza, Simona Filice, Giuseppe Compagnini, Salvatore Scirè, Silvia Scalese
Roberto Fiorenza, Simona Filice, Giuseppe Compagnini, Salvatore Scirè, Dipartimento di Scienze Chimiche, Università degli studi di Catania, Catania, Italy Simona Filice, Silvia Scalese, CNR-IMM,Catania, Italy

09:15 **Bottom-up Synthesis and Characterisation of Single-Crystalline Iron-Oxide Nanowires** — F IV.3
A. Chnani, T. Dlugosch, A. Schirmer, A. Pasquarelli, J. Biskupek, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, Ulm University, Electron Microscopy Group of Materials Science, Albert-Einstein-Allee 11, 89081 Ulm, Germany, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

09:30 **Simulation of Oxygen Evolution at Hematite Surfaces: the Impact of Structure and Local Chemistry** — F IV.4
X. Zhang, M.C.M van de Sanden, A. Bieberle-Hütter
X. Zhang, M.C.M van de Sanden, A. Bieberle-Hütter: 1 Electrochemical Materials and Interfaces, Dutch Institute for Fundamental Energy Research, Eindhoven, the Netherlands M.C.M van de Sanden: 2 Plasma and Materials Processing, Department of Applied Physics, Eindhoven University of Technology (TU/e), Eindhoven, the Netherlands

09:45 **Hematite reduction and doping pathways studied by synchrotron radiation-based techniques for solar water splitting optimization** — F IV.5
M. Rioult (1), D. Stanescu (2), R. Belkhou (1), S. Stanescu (1), E. Fonda (1), F. Maccherozzi (3), A. Barbier (2) and H. Magnan (2).
(1) Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin - BP 48, F-91192 Gif-sur-Yvette cedex, France. (2) Service de Physique de l?Etat Condensé, CEA, CNRS, Université Paris Saclay, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France. (3) Diamond Light Source, Harwell Campus, Didcot, OX11 0DE Oxforshire, United Kingdom.

10:00 **Thin film WO3 photoanodes for enhanced visible-light water splitting** — F IV.6
Aldona Jelińska, Krzysztof Bieńkowski, Renata Solarska, Marcin Pisarek and Jan Augustyński
University of Warsaw, Centre of New Technologies, Banacha 2c, 02-097 Warsaw, Poland

10:15 **Exploring the WO3/ BiVO4 heterojunction for solar water splitting applications** — F IV.7
Dr. Andreas Kafizas, Ms. Shababa Selim, Ms. Sacha Corby, Dr. Laia Francas-Forcada
Imperial College London

10:30 **Coffee Break**

Molecular approaches to water splitting : Vincent Artero

10:45 **Water Splitting Catalysts and Photoelectrochemical Cells (Invited)** — F V.1
Licheng Sun
Department of Chemistry, School of Chemical Science and Engineering, KTH Royal Institute of Technology, 10044 Stockholm, Sweden, State Key Lab of Fine Chemicals, Institute of Artificial Photosynthesis, KTH-DUT Joint Education and Research Center on Molecular Devices, Dalian University of Technology (DUT), 116024 Dalian, China

11:15 **Heptacoordinate Co(II) complex: a new architecture for photochemical hydrogen production** — F V.2
F. Lucarini, A. Ruggi
Department of Chemistry, University of Fribourg, Switzerland

11:30 **Combination between a sulphide semiconductor and an electroactive enzyme: a path for visible light-induced water photo-splitting** — F V.3
M. Pita(1), C. Tapia(1), S. Shleev(2), J. C. Conesa(1), A. L. De Lacey(1)
(1) Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain (2) Biomedical Sciences, Faculty of Health and Society, Malmö University, Malmö, Sweden.

11:45 **Molecular catalysts anchored to silicon photocathodes for hydrogen production** — F V.4
Soundarrajan Chandrasekaran 1, Laurent Cagnon 2, François Baleras 3, Pascal Mailley 3 and Vincent Artero 1*
1 Laboratoire de Chimie et Biologie des Métaux, Université Grenoble Alpes, CNRS UMR 5249, CEA, Grenoble, France 2 Institut NEEL, CNRS, 25 rue des Martyrs BP 166, 38042 Grenoble cedex 9, France 3 LETI, CEA, 17 Rue des Martyrs, F-38054 Grenoble Cedex 9, France * Corresponding author email: vincent.artero@cea.fr

12:00 **Molecular modelling of conjugated polymer photocatalysts for hydrogen evolution** — F V.5
Pearce, Drew [1], Guilbert, Anne A Y [1], Sachs, Michael [2], Sprick, Sebastian [3], Durrant, James R [2], Cooper, Andrew [3] and Nelson, Jenny [1]
[1] Department of Physics, Imperial College London, London SW7 2AZ, UK [2] Department of Chemistry, Imperial College London, London SW7 2AZ, UK [3] Department of Chemistry, University of Liverpool, Liverpool L69 7ZD, UK

12:15 **A photoelectrochemical reactor based on silicon photovoltaics enabling self-contained CO2 conversion to syngas** — F V.6
[1] F. Urbain, N. Carretero, T. Andreu, and R. Morante [2] C. Voz and R. Alcubilla
[1] IREC, Catalonia Institute for Energy Research, Jardins de les Dones de Negre 1, 08930, Sant Adrià de Besòs, Spain [2] Electronic Engineering Department, Universitat Politècnica de Catalunya, Jordi Girona 1?3, Barcelona 08034, Spain

12:30 **Lunch**

F

Photochemical water splitting : Licheng Sun

14:00 **Band Edge Engineering in Metal Oxide Semiconductors for Efficient Solar Water Splitting in Photoelectrochemical Cell (Invited)** — F VI.1
Aadesh P. Singh, Björn Wickman and Anders Hellman
Division of Chemical Physics, Department of Physics, Chalmers University of Technology, SE-412 96 Gothenburg, Sweden

14:30 **A novel overlapping junction of ZnO Nanowires for photoelectrochemical water splitting** — F VI.2
Bao-Shun Wang, Ren-Ying Li, Zhi-Yun Zhang, Xiao-Ling Wu, Guo-An Cheng, Rui-Ting Zheng
College of Nuclear Science and Technology□Beijing Normal University□Beijing, China, 100875

14:45 **Hydrogen-treated TiO2 hierarchical nanostructured films for photoelectrochemical water splitting** — F VI.3
Luca Mascaretti (a), Simona Ferrulli (a), Piero Mazzolini (a,b), Carlo S. Casari (a,b), Valeria Russo (a), Roberto Matarrese (c), Isabella Nova (c), Giancarlo Terraneo (b,d), Andrea Li Bassi (a,b)
(a) Micro- and Nanostructured Materials Laboratory, Department of Energy, Politecnico di Milano, via Ponzio 34/3, 20133, Milano, Italy (b) Center for Nanoscience and Technology – IIT@Polimi, via Giovanni Pascoli 70/3, 20133, Milano, Italy (c) Laboratory of Catalysis and Catalytic Processes, Department of Energy, Politecnico di Milano, via La Masa 34, 20156, Milano, Italy (d) Laboratory of Nanostructured Fluorinated Materials (NFMLab), Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, via L. Mancinelli 7, 20131 Milano, Italy.

15:00 **Evaluation of annual hydrogen production through integrated silicon based photoelectrochemial water splitting devices** — F VI.4
Katharina Welter 1, Vladimir Smirnov 1, Jan-Philipp Becker 1, Wolfram Jaegermann 2, and Friedhelm Finger 1
1 IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, D-52425, Jülich, Germany, 2 Institute of Materials Science, TU Darmstadt, D-64287 Darmstadt, Germany

15:15 **NiOx, Ni0.7Fe0.3Ox, CoOx and IrOx cocatalysts loaded LaTaON2 photoanode for visible light water splitting** — F VI.5
Wenping Si (1), Daniele Pergolesi (1), Fatima Haydous (1), Aline Fluri (1), Alexander Wokaun (1), Thomas Lippert (1,2)
(1). Thin Films and Interfaces, Research with Neutrons and Muons Department, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland, (2). Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zurich, 8093 Zurich, Switzerland

15:30 **Coffee Break**

Water Splitting for Hydrogen Production I : Junze Chen

16:00 **gC3N4-TiO2 based nanocomposites for enhanced photocatalytic H2 production from water under solar and visible light (Invited)** **F VII.1**
Clément MARCHAL, Valérie CAPS, Thomas COTTINEAU, Valérie KELLER
ICPEES - Institute of Chemistry and Processes for Energy, Environment and Health 25, rue Becquerel 67087 Strasbourg cedex FRANCE

16:30 **Facile synthesis of CdS/TiO2/MS (M=Ni, Co, Cu) ternary hybrids for efficient photocatalytic H2 production without noble metals** **F VII.2**
A. Daya Mani*, P. Barpanda
Dr. A. Daya Mani- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012 , Dr. P. Barpanda- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012.

16:45 **Ta2O5 Nanotubes Attached with CuO Nanoparticles as Photocatalysts for Water Splitting** **F VII.3**
An-Ting Yang and Lih-Juann Chen
Department of Material Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan

17:00 **Ternary transition metal trisulfides as photoanodes for assisted hydrogen generation** **F VII.4**
E. Flores*, J.R. Ares, I.J. Ferrer, C. Sánchez.
Grupo MIRE, Dpto. Física de Materiales, Universidad Autónoma de Madrid, C/ Francisco Tomás y Valiente 7, 28049 - Madrid, España. Email: edu.flores@estudiante.uam.es

17:15 **Ternary Oxide Films prepared by Atomic Layer Deposition for Photoelectrochemistry** **F VII.5**
Alexander G. Hufnagel, Kristina Peters, Alexander Müller, Christina Scheu, Sebastian Häringer, Dina Fattakhova-Rohlfing, Thomas Bein
AGH, KP, SH, DF, TB: University of Munich (LMU), Butenandtstraße 11, 81377 München, Germany AM, CS: Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Straße 1, 40237 Düsseldorf, Germany

Photocatalytic Materials Design : Yaron Paz

08:30 **Simulation-lead Design of new photocatalyst materials (Invited)** **F VIII.1**
Michael Nolan
Tyndall National Institute, University College Cork

09:00 **Effect of Ag Co-catalyst on TiO2-Cu2O Nanocomposites Structure and Visible Photocatalytic Activities** **F VIII.2**
Dávidné Nagy (1), Maria-Chiara Ferrari (1), Imre Miklós Szilágyi (2,3), Xianfeng Fan (1)
(1) Institute for Materials and Processes, School of Engineering, The University of Edinburgh (2) Department of Inorganic and Analytical Chemistry, Budapest University of Technology and Economics (3) Technical Analytical Chemistry Research Group of the Hungarian Academy of Sciences

09:15 **Interactions of Water with Anatase TiO2 (001) and Amorphous Fluorinated Anatase Interfaces via First-Principles Simulations** **F VIII.3**
Kyle G. Reeves, Jiwei Ma, Damien Dambournet, Christel Laberty-Robert, Rodolphe Vuilleumier, Mathieu Salanne
Sorbonne Universités, UPMC Univ Paris 06, CNRS, UMR 8234, PHENIX, Paris, France

09:30 **Amorphous Molybdenum Sulphide: Surface Water Dependent Properties, Humidity Sensing and Electrolyte Free Water Splitting** **F VIII.4**
Torben Daeneke, Nripen Dahr, Kourosh Kalantar-Zadeh
RMIT University School of Engineering 124 LaTrobe Street 3001 Melbourne Australia

09:45 **Characterization of BiVO4 and WO3 powders by modulated and cw surface photovoltage** **F VIII.5**
Steffen Fengler1, Thomas Dittrich2, Mauricio Schieda3, Henning Gutzmann1, Thomas Emmler3, Maria Villa-Vidaller1, Thomas Klassen1,3
1 Helmut-Schmidt-Universität, Universität der Bundeswehr Hamburg, Institut für Werkstofftechnik, Holstenhofweg 85, D-22043 Hamburg, Germany 2 Helmholtz Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium-Photovoltaik, D-12489 Berlin, Germany 3 Helmholtz-Zentrum Geesthacht, Zentrum für Material- und Küstenforschung, Institut für Werkstoffforschung, Max-Planck-Str. 1, D-21502 Geesthacht, Germany

10:00 **Density of States in thin film Hematite - How crystallinity influences the electronic properties** **F VIII.6**
Christian Lohaus (1), Céline Steinert (1), Joachim Brötz (2), Andreas Klein (1), Wolfram Jaegermann (1)
(1) TU Darmstadt, Materials Science Departement, Surface Science Division (2) TU Darmstadt, Materials Science Departement, Structural Research

10:15 **Coffee Break**

Photocatalytic Materials (Solar Fuels) : Michael Nolan

10:45 **Solvent exfoliated semiconducting transition metal dichalcogenides for solar fuel production (Invited)** **F IX.1**
Kevin Sivula
Laboratory for Molecular Engineering of Optoelectronic Nanomaterials, École Polytechnique Fédérale de Lausanne (EPFL), Station 6, 1015 Lausanne, Switzerland.

11:15 **Electronic band structure of photocatalytic materials (TiO2, SnO2) relevant to solar energy conversion** **F IX.2**
L. Kavan
J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Dolejskova 3, CZ-18223 Prague 8, Czech Republic

11:30 **Charge transfer characterization on ALD TiO2 protective and conductive layers for Photoelectrochemical Solar Fuels** **F IX.3**
Carles Ros, Teresa Andreu, Joan R. Morante
Carles Ros, Institut Recerca en Energia de Catalunya (IREC), Jardins de les Dones de Negre, 1, 08930 Sant Adrià de Besòs, Barcelona, España, Teresa Andreu, Institut Recerca en Energia de Catalunya (IREC), Jardins de les Dones de Negre, 1, 08930 Sant Adrià de Besòs, Barcelona, España, Joan R. Morante, Institut Recerca en Energia de Catalunya (IREC), Jardins de les Dones de Negre, 1, 08930 Sant Adrià de Besòs, Barcelona, España, Universitat de Barcelona, Dep. Electrònica, Martí i Franquès, 1, 08028 Barcelona, España

12:00 **Amine functionalized graphene-based photocatalyst for CO2 reduction** **F IX.5**
Kyeong Min Cho, Kyoung Hwan Kim, Issam Gereige, Ahmed M. Al Saggaf and Hee-Tae Jung.
K. M. Cho, K. H. Kim and H.-T. Jung Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea, I. Gereige and A. M. A. Saggaf Saudi Aramco Research & Development Center, Dhahran 31311, Saudi Arabia

12:15 **On the Role of the Metal in Highly Active Titania Photocatalysts for Ethanol Reforming in Gas-Phase** **F IX.6**
M. González-Castaño, S. Murcia, C. Flox, T. Andreu, J.R. Morante
IREC, Catalonia Institute of Energy research

12:30 **Lunch**

Poster Session II Water Splitting and fuel production : Vincent Artero

13:30 **Synthesized Polyoxometalates Derivates for Visible-light-driven Hydrogen Production in Noble-metal-free Homogeneous System** **F PII.1**
Yasemin Topal1,2 1Selcuk University, Advanced Technology Research and Application Center Konya Turkey 2Selcuk University, Department of Chemistry Konya, Turkey E-mail:yasemin_topal_88@hotmail.com1,2
1Selcuk University, Advanced Technology Research and Application Center Konya Turkey 2Selcuk University, Department of Chemistry Konya, Turkey E-mail:yasemin_topal_88@hotmail.com1,2

13:30 **Large scale synthesis of flowerlike metal oxides by simple chemical solution route with high photocatalytic performance** **F PII.3**
M. Kourinou 1,2, G. Kiriakidis1,2,3, V. Binas1,2,3
1. Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2. University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece 3. Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece

13:30 **Smart Photocatalytic Coatings for improved air and health quality** **F PII.4**
G. Kiriakidis1,2,3, D. Kotzias,4 V. Binas1,2,3
1. Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2. University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece 3. Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece 4. Former Official of the European Commission, Joint Research Centre, Institute for Health and Consumer Protection, 21027, Via Germania 29, Ispra VA, Italy

13:30 **Nanojunction-mediated visible light photocatalytic enhancement in heterostructured ternary g-C3N4-CdS-BiOCl nanocomposites** **F PII.5**
Sankeerthana Bellamkonda, G. Ranga Rao
Department of Chemistry, Indian Institute of Technology Madras, Chennai 600036, India

13:30 **Vapor-Solid Reaction Growth of Rutile and Anatase TiO2 Material** **F PII.6**
Tzu-Yuan Lee1, Hsin-Tien Chiu1*
1 Department of Applied Chemistry, Nation Chiao Tung University, Hsinchu, Taiwan, 30010 R. O. C.

13:30 **MoS2 nanoflakes modified TiO2 nanoparticles for enhanced photocatalytic and photoelectrochemical performance** **F PII.7**
Manan Mehta1,4, Aadesh P. Singh2, Sandeep Kumar3, Satheesh Krishnamurthy4 and Suddhasatwa Basu1
1 Department of Chemical Engineering, Indian Institute of Technology, Hauz Khas, New Delhi-110016, India. 2 Department of Physics, Indian Institute of Technology, Hauz Khas, New Delhi-110016, India. 3 Department of Chemistry, Indian Institute of Technology, Hauz Khas, New Delhi-110016, India. 4 Materials Engineering, The Open University, Milton Keynes, MK7 6AA, United Kingdom.

13:30 **High-throughput reusable graphene nanofibers for enhanced photocatalytic activity** **F PII.8**
Soumitra Satapathi
Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247667, India

13:30 **Sustainable hydrogen and chemical production via photo-electrochemical reforming of biomass-derived alcohols** **F PII.35**
Liping Zhang, Bin Liu
Energy Research Institute@NTU, Interdisciplinary Graduate School, Nanyang Technological University, Singapore

13:30 **Electrochemical Reduction of Carbon Dioxide (CO2) by Using Reduced Graphene Oxide/Copper Nanoparticle Electrode** **F PII.10**
Liang-Wei Chao and Lih-Juann Chen*
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan (R.O.C.)

13:30 **Development of GaON/ZnO/FTO NRAs for effective photoelectrochemical water splitting** **F PII.11**
Ahsanulhaq Qurashi, Ibrahim Khan
Center of Excellence in Nanotechnology (CENT) and Chemistry derpartment King Fahd University of Petroleum and Minerals, Dhahran, 31261, Saudi Arabia.

13:30 **Doping-Dependent Adsorption and Photon-Stimulated Desorption of CO on GaN(0001)** **F PII.12**
Sebastian L. Kollmannsberger, Constantin A. Walenta, Andrea Winnerl, Saskia Weiszer, Rui N. Pereira, Martin Tschurl, Martin Stutzmann, Ueli Heiz
Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Experimental Semiconductor Physics, Walter Schottky Institute and Physics Department, TU Munich, Chair of Experimental Semiconductor Physics, Walter Schottky Institute and Physics Department, TU Munich, Chair of Experimental Semiconductor Physics, Walter Schottky Institute and Physics Department, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Experimental Semiconductor Physics, Walter Schottky Institute and Physics Department, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich

13:30 **X-ray absorption spectroscopy study of nanosized cupric oxide** **F PII.13**
A. Kuzmin (1), I. Jonane (1), A. Anspoks (1), A. Kalinko (2,3), R. Chernikov (3)
(1) Institute of Solid State Physics, University of Latvia, Kengaraga str. 8, LV-1063 Riga, Latvia, (2) Universität Paderborn, Naturwissenschaftliche Fakultät, Department Chemie, Warburger Straße 100, D-33098 Paderborn, Germany, (3) DESY Photon Science, Notkestrasse 85, D-22607 Hamburg, Germany

13:30 **Spray-flame synthesis of barium titanate nanoparticles for photocatalytic applications** **F PII.14**
Alexander Tarasov 1, Yan Xiong 2, Frank Marlow 2, Christof Schulz 1, Hartmut Wiggers 1
1 IVG ? Reactive Fluids and CENIDE, University of Duisburg-Essen, Germany, 2 Max-Planck-Institut für Kohlenforschung, Mülheim

13:30 **Approaches for the upscaling of solar water splitting photocathodes** **F PII.15**
Jan-Philipp Becker, Katharina Welter, Bugra Turan, Vladimir Smirnov, Félix Urbain, Johannes Wolff, Stefan Haas, Friedhelm Finger
IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, 52425, Jülich, Germany

13:30 **Perovskite oxynitride visible light photocatalysts as self-cleaning coatings.** **F PII.16**
Antonio Iborra, Geoffrey Hyett.
University of Southampton

13:30 **Enhanced Solar Photocatalytic Hydrogen Generation with HgS Nanoparticles on ZnO Nanowires** **F PII.17**
Yu-Sheng Huang and Lih-Juann Chen
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan (R.O.C.)

13:30 **Electron/energy transfer interplay in Quantum Dot-Ir(III) dyads: the role of the connecting unit.** **F PII.18**
Albert Ruggi
Université de Fribourg, Chemin du Musée 9 Fribourg (Switzerland)

13:30 **Fabrication and characterization of copper/cuprous oxide nanowire arrays** **F PII.19**
Yan Syun Huang, Chien Neng Liao
National Tsing Hua University (Taiwan)

13:30 **Formation and evolution of their performance with time of Pd/TiO2 and Pt/TiO2 Schottky diodes** **F PII.20**
Christian Zimmermann [1], Julie Bonkerud [1], Frank Herklotz [1],[2], Edouard Monakhov [1], Bengt Gunnar Svensson [1], Lasse Vines [1]
[1] University of Oslo, Department of Physics, Centre for Materials Science and Nanotechnology, PO Box 1048 Blindern, N-0316 Oslo, Norway [2] Department of Physics, Freie Universität Berlin, Arnimalle 14, 14195 Berlin, Germany

13:30 **Hematite photoanodes obtained by Aqueous Chemical Growth** **F PII.21**
D. Stanescu1, S. Stanescu2, A. Besson2, C. Mocuta2, A. Forget1, D. Colson1, H. Magnan1
1 Service de Physique de l?Etat Condensé, CEA, CNRS, Université Paris Saclay, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France, 2 Synchrotron SOLEIL, L?Orme des Merisiers, BP-48 Saint-Aubin, F-91192 Gif-sur-Yvette Cedex, France

13:30 **Influence of nanostructured surface on the catalytic properties of GaP based photocathodes.** **F PII.24**
J. Novák, A. Lauren?íková, S. Hasenohrl, P. Eliá?
Institute of Electrical Engineering SAS, Dubravska 9, 841 04 Bratislava, Slovakia

13:30 **Synthesis of a nanoporous transparent Li doped and Li-Co doped TiO2 xerogel and 7Li MAS NMR characterization** **F PII.25**
Enrico Greco (1), Enrico Ciliberto (1), Donatella Capitani (2), Valeria di Tullio (2), Ezio Viscuso (1)
(1) Department of Chemical Sciences, University of Catania, viale A. Doria 6, 95125, Catania, Italy, (2) Magnetic Resonance Laboratory ?Annalaura Segre?, Institute of Chemical Methodologies, CNR, Research Area of Rome 1, via Salaria km. 29.500, 00015 Monterotondo, Roma, Italy,

13:30 **Ab initio Assessment of Bi1-xRExCuOS (RE=La, Gd, Y, Lu) Solid Solution for Water Splitting** **F PII.26**
Sheikha Lardhi, Antton Curutchet, Moussab Harb, Tangui Le Bahers, Luigi Cavallo
King Abdullah University of Science and Technology (KAUST)-KAUST Catalysis Center (KCC)-KSA, Univ Lyon-ENS de Lyon-CNRS-Université Claude Bernard Lyon-Laboratoire de ChimieFrance

13:30 **Titanium compounds- synthesis in arc discharge in submerged water** **F PII.27**
Ioan Stamatin, Cristina Serban,Alexei Zubarev, Adriana Balan, Widad Hano Albanda, Catalin Ceaus, Stefan Marian Iordache, Serban N Stamatin (1,2), Eugen Vasile (3)
1) University of Bucharest, Physics, 3Nano-SAE Res Center 2) J. Heyrovsky Institute of Physical Chemistry of the CAS,Dept. Low-dimensional systems 3) Politechnica University of Bucharest

13:30 **TiO2 biocompatible nanoparticles decorated with noble metals for photocatalytic applications** **F PII.28**
M. Scarisoreanu1, C. Fleaca1, A. Ilie1,2, A.M. Banici1,3, I.P. Morjan1, C. Locovei1, E. Dutu1, L. Gavrila Florescu1, E. Vasile4, I. Fort5, M. Stan 6, F. Dumitrache1, I. Morjan1
1 National Institute for Lasers, Plasma and Radiation Physics, PO Box MG-36, 077125, Magurele-Bucharest, Romania, 2 University of Bucharest, Faculty of Physics, 405 Atomistilor Str,, Magurele-Bucharest, 077125, Romania, 3 University of Craiova, Faculty of Mathematics and Natural Sciences, RO-200585, Craiova, Romania, 4 ,,Politehnica? University of Bucharest, Faculty of Applied Chemistry and Materials Sciences,1-7 Gh. Polizu Str, Bucharest, Romania, 5 ,,Babes-Bolyai? University, Faculty of Chemistry and Chemical Engineering, Electrochemical Research Laboratory, 11 Arany Janos Str., Cluj-Napoca, 400028, Romania, 6University of Bucharest, Department of Biochemistry and Molecular Biology, 91- 95 Splaiul Independen?ei, 050095, Bucharest 5, Romania,

13:30 **Formation and properties of vanadium tetrasulfide films (VS4) for photo-assisted hydrogen generation** **F PII.29**
E. Flores, E. Muñoz-Cortés, C. Sánchez, J.R. Ares and I.J. Ferrer
Grupo MIRE, Dpto. de Física de Materiales, Universidad Autónoma de Madrid, C/ Tomás y Valiente 7, 28049, Madrid, España. Corresponding email: joser.ares@uam.es

13:30 **Electrical Tuning of the Photoelectrochemical Properties of Ferroelectric PVDF/Cu/PVDF-NaNbO3 Photoelectrochemical Cell** **F PII.30**
Simrjit Singh, Neeraj Khare
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India.

13:30 **CO2 photoreduction with TiO2 and Cu-TiO2** **F PII.31**
Maria Ana L.R.M. Cortes, Jeremy W.J. Hamilton, Preetam K. Sharma, Alan Brown, J. Anthony Byrne
Ulster University

13:30 **Study on photocatalytic activity of ZnO nanorod core/MeO shells structures obtained by spray pyrolysis method** **F PII.32**
T. Dedova, K. Balmassov, D. Klauson, I. Gromyko, V. Mikli
Department of Materials and Environmental Technology Tallinn University of Technology Ehitajate tee 5, 19086 Tallinn, Estonia

13:30 **Crystalized titanium dioxide and gold nanorods core-shell nanocomposites for efficient H2 production under UV-VIs-NIR light** **F PII.33**
Yanru Bu,Kang Liu, Yan Liang, Zhouyou Wang,Xiwang Zhang, Xuchuan Jiang, Aibing Yu and Huanting Wang
Chemical Engineering, Monash University, Australia

13:30 **Catalytic Effects of SnS2 Crystal Orientation for CO2 Reduction Reaction** **F PII.2**
Hsiao-Chien Wang, Tsu-Chin Chou, Kuei-Hsien Chen, and Li-Chyong Chen
Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan

16:00 **End of Poster Session II**

Thursday 25 May 2017

Water Splitting for Hydrogen Production II : Kevin Sivula

08:30 **Solar H2 production by 2-D organic Photocatalysts (Invited)** **F X.1**
Junwang Tang
Department of Chemical Engineering, University College London, UK

09:00 **Semiconductor Surface Photo-Reactivity: Understanding Mechanistic Pathways for Hydrogen Formation From Ethanol** **F X.2**
Constantin A. Walenta, Sebastian L. Kollmannsberger, Andrea Winnerl, Rui N. Pereira, Martin Tschurl, Martin Stutzmann, Ueli Heiz
Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Experimental Semiconductor Physics, Physics Department, Walter Schottky Institute, TU Munich, Chair of Experimental Semiconductor Physics, Physics Department, Walter Schottky Institute, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Experimental Semiconductor Physics, Physics Department, Walter Schottky Institute & Catalysis Research Center, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich

09:15 **Highly active and stable 3D carbon nanotubes-graphene-TiO2 nanohybrid: an efficient photocatalyst for water splitting** **F X.3**
Sankeerthana Bellamkonda, Nithya Chandrasekhar, Yusuf Hafeez, B. Neppolian and G. Ranga Rao
G. Ranga Rao, Department of Chemistry, Indian Institute of Technology Madras, Chennai - 600036, India, B. Neppolian, SRM Research Institute, SRM University, Kattankulathur, Chennai - 603203, India

09:30 **Photocatalytic water splitting over Inverse Opal TiO2 catalysts** **F X.4**
Roberto Fiorenza, Marianna Bellardita, Salvatore Sciré, Leonardo Palmisano,Bao-Lian Su
Roberto Fiorenza, Salvatore Sciré, Università degli studi di Catania, Catania (Italy) Marianna Bellardita, Leonardo Palmisano, Università di Palermo, Palermo (Italy) Bao-Lian Su, Laboratory of Inorganic Materials Chemistry, University of Namur, Namur (Belgium).

09:45 **Simple guidelines to develop water splitting photocatalysts using multi-scale simulations** **F X.5**
Angel T. Garcia-Esparza, Philippe Sautet, Kazuhiro Takanabe, Tangui Le Bahers
Angel T. Garcia-Esparza, Philippe Sautet, Tangui Le Bahers, Université de Lyon, Centre National de la Recherche Scientifique, École Normale Supérieure de Lyon, Université Lyon 1, Laboratoire de Chimie UMR 5182, F-69342 Lyon, France. Angel T. Garcia-Esparza, Kazuhiro Takanabe, King Abdullah University of Science and Technology (KAUST), KAUST Catalysis Center (KCC) and Physical Science and Engineering Division (PSE), Thuwal, 23955-6900, Saudi Arabia. Philippe Sautet, Department of Chemical and Biomolecular Engineering, University of California, Los Angeles, Los Angeles, California 90095, United States.

10:00 **Effect of Cocatalyst and Passivation on the Photoelectrochemical solar water splitting of Calcium Niobium Oxynitride** **F X.6**
Fatima Haydous, Daniele Pergolesi, Guzenko Vitality, Thomas Lippert, Alexander Wokaun
Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland

10:15 **Coffee Break**

Photoelectrodes for Hydrogen Production : Valerie Keller

10:45 **Semiconductor photocatalysts for a sun-driven water-splitting device (Invited)** **F XI.1**
S. Hernández (1,2) N. Russo (1) G. Saracco (1,2)
(1) Department of Applied Science and Technology (DISAT), Politecnico di Torino, Torino, Italy (2) Center for Sustainable Futures (CSF@POLITO), Istituto Italiano di Tecnologia, Torino, Italy * Email: simelys.hernandez@polito.it

11:15 **Achieving meaningful photoconversion efficiencies by tailoring morphology and interfaces on copper oxide based photocathodes** **F XI.2**
Matthew T. Mayer, Linfeng Pan, Jingshan Luo, Min-Kyu Son, Michael Grätzel
Laboratory of Photonics and Interfaces, Ecole polytechnique federale de Lausanne

11:30 **Ultra-thin Ti-based films for the stabilization and functionalization of photocathodes** **F XI.3**
Andrea Sartori, Michele Orlandi, Alberto Mazzi, Nicola Bazzanella, Serena Berardi, Stefano Caramori, Carlo A. Bignozzi, Antonio Miotello
Andrea Sartori, Michele Orlandi, Alberto Mazzi, Nicola Bazzanella, Antonio Miotello. Dipartimento di Fisica, Università degli Studi di Trento, I-38123, Povo (Trento), Italy. Serena Berardi, Stefano Caramori, Carlo A. Bignozzi. Dipartimento di Scienze Chimiche e Farmaceutiche, Università degli Studi di Ferrara, Via Fossato di Mortara 17-19, 44100, Ferrara, Italy.

11:45 **Unfolding photo-anodic water splitting mechanism on iron oxide surfaces via H2O2 reactions** **F XI.4**
Yotam Y. Avital, Hen Dotan, Bahava Gupta, Iris Visoly-Fisher, Avner Rothschild, Arik Yochelis
Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel, Department of Materials Science and Engineering, Technion—Israel Institute of Technology, Haifa 32000, Israel, Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel, Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel, Department of Materials Science and Engineering, Technion—Israel Institute of Technology, Haifa 32000, Israel, Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel,

12:00 **A facile pulsed-electrodeposition of catalytic nickel oxide films for highly efficient Si-based water splitting photoanode** **F XI.5**
Sol A Lee, Mi Gyoung Lee, Seokhoon Choi, Ho Won Jang*
Department of Materials Science and Engineering, Seoul National University, Seoul, 08826, Korea

12:15 **Photocatalytic activity of rutile and anatase TiO2 electrodes modified with plasmonic (nano)particles** **F XI.6**
Olga A. Krysiak, Piotr J. Barczuk, Krzysztof Biekowski, Jan Augusty?ski
Olga A. Krysiak, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw, Poland and College of Inter-Faculty Individual Studies in Mathematics and Natural Sciences, University of Warsaw, Banacha 2c, 02-097, Warsaw, Poland Piotr J. Barczuk, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw Krzysztof Bie?kowski, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw Jan Augusty?ski, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw

12:30 **Lunch**

Photocatalytic combinations : Hernandez Simelys

14:00 **Insights into the Performance of CoxNi1-x Titanates as Photo- and Electro-Catalysts for Sun-Driven Water Oxidation (Invited)** **F XII.1**
S. Murcia-López1, M. Moschogiannaki2,3, V. Binas2,3, T. Andreu1,4, P-Y. Tang1,5, J. Arbiol5,6, G. Kiriakidis2,3, J.R. Morante1,4
1. Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930, Sant Adrià de Besós, Spain 2. Institute of Electronic Structure and Laser (IESL-FORTH), Vasilika Vouton GR-71110, Heraklion, Greece 3. University of Crete, GR-70013, Heraklion, Greece 4. University of Barcelona (UB), Marti i Franquès 1, 08028, Barcelone, Spain 5. Catalan Institute of Nanoscience and Nanotechnology (ICN2), Campus UAB, Bellaterra, 08193, Barcelona, Spain 6. Institució Catalana de Recerca i Estudis Avançats (ICREA), Passeig Lluis Companys 23, 08010, Barcelone, Spain

14:30 **Photocatalytic and Photoelectrolytic Disinfection of Water** **F XII.2**
J Anthony Byrne(a), Brenda R. Cruz-Ortiz(b), Jeremy W.J. Hamilton (a), Cristina Pablosc, Preetam K. Sharma (a), María Castro-Alférez (e), Pilar Fernández-Ibañez (a), Patrick S.M. Dunlop (a), Lourdes Díaz-Jiménez (d), Dora A. Cortés-Hernández (d), J. Marugánc, R. van Grieken (c), Dion D. Dionysiou (f)
(a) Ulster University, UK, (b) Autonomous University of Coahuila, México, (c) Universidad Rey Juan Carlos, Spain, (d) CINVESTAV-Unidad Saltillo, México, (e) Plataforma Solar de Almeria, Spain, (f) University of Cincinnati, United States.

14:45 **Designing mesopores in oxynitride single crystals for enhanced photocatalytic and photoelectrochemical activity** **F XII.3**
S. Pokrant (1), S. Dilger (2), S. Landsmann (2), M. Trottmann (3)
(1) School of Engineering, University of Applied Sciences, Goebenstrasse 40, 66117 Saarbrücken, Germany, (2) Laboratory Materials for Energy Conversion, Empa, Überlandstrasse 129, 8600 Dübendorf, Switzerland, (3) Laboratory of Advanced Analytical Technologies, Empa, Überlandstrasse 129, 8600 Dübendorf, Switzerland

15:00 **Development by Low-Frequency PECVD process of Nitrogen-doped TiO2 Thin Films for Water Photo-oxidation by Solar Energy** **F XII.4**
Loraine YOUSSEF, Stéphanie ROUALDÈS, Joëlle BASSIL, Mirvat ZAKHOUR, Michel NAKHL, Vincent ROUESSAC, André AYRAL
Loraine YOUSSEF, European Membrane Institute, University of Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, FRANCE and Laboratory of Physical Chemistry of Materials /Platform of Research in Nanosciences, Lebanese University, B.P.90656 Fanar-Jdeidet el Metn, LEBANON, Stéphanie ROUALDÈS, European Membrane Institute, University of Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, FRANCE, Joëlle BASSIL, Lebanese University, B.P.90656 Fanar-Jdeidet el Metn, LEBANON, Mirvat ZAKHOUR, Laboratory of Physical Chemistry of Materials /Platform of Research in Nanosciences, Lebanese University, B.P.90656 Fanar-Jdeidet el Metn, LEBANON, Michel NAKHL, Laboratory of Physical Chemistry of Materials /Platform of Research in Nanosciences, Lebanese University, B.P.90656 Fanar-Jdeidet el Metn, LEBANON, Vincent ROUESSAC, European Membrane Institute, University of Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, FRANCE, André AYRAL, European Membrane Institute, University of Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, FRANCE.

15:15 **Multi-material titania-based photocatalytically active thin films on model surfaces and textiles prepared by LbL self-assembly** **F XII.5**
Marvin Motay, David Martel, Olivier Felix, Charline Soraru, Valérie Keller, Lydie Ploux, Lavinia Balan, Gero Decher, Nicolas Keller
Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé (ICPEES), CNRS, Strasbourg University, 25 rue Becquerel 67087 Strasbourg, France, Institut Charles Sadron (ICS), CNRS, Strasbourg University, 23 rue du Loess 67034 Strasbourg, France, Institut des Sciences des Matériaux de Mulhouse (IS2M), CNRS, Haute-Alsace University, 15 rue Jean Starcky 68057 Mulhouse, France

15:30 **Coffee Break**

Improving Catalytic Performance : Junwang Tang

16:00 **Identification and Characterization of Particulate Metal-Oxide Photocatalysts by Energy-resolved Distribution of Electron Traps (Invited)** **F XIII.1**
Bunsho Ohtani, Akio Nitta, Masanori Nagao, Mai Takase, Mai Takashima
Institute for Catalysis, Hokkaido University, Graduate School of Environmental Science, Hokkaido University, Graduate School of Engineering, Muroran Institute of Technology

16:30 **Carbon nanotubes modified metal oxide nanocomposites for enhanced Photoelectrochemical water splitting and Photocatalysis** **F XIII.2**
Deepti Chaudhary, Neeraj Khare, V. D. Vankar
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India

16:45 **CO2 photoreduction products and reaction kinetics observed with modified photocatalysts** **F XIII.3**
Jeremy W.J. Hamilton*,1 Maria Ana L.R.M. Cortes,1 Preetam K. Sharma,1 Alan Brown,1 J. Anthony Byrne,1 M. Nolan,2 K.A. Gray,3 J. Notestein,3 E. Weitz3
1 Ulster University, NIBEC, UK, 2 Tyndall National Institute, Cork, Ireland, 3 Northwestern University, Evanston, IL, USA

17:00 **Investigating the catalytic oxygen activation over Pt-TiO2/SiO2 binary oxide catalysts under dark and light conditions** **F XIII.4**
Wibawa Hendra Saputera, Jason Scott*, Emma Lovell, Donia Friedmann, Rose Amal*
Particles and Catalysis Research Group, School of Chemical Engineering, University of New South Wales, Australia

17:15 **Multicomponent Metal-Metal Oxide Mesocrystals: Synthesis, Formation Mechanism and Photocatalytic Applications** **F XIII.5**
Darinka Primc
Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, London, Laboratory for Multifunctional Materials, Department of Materials, ETH Zurich, 8093 Zurich, Switzerland.

Photoelectrodes for Water Splitting : Bunsho Ohtani

08:30 **Photo-electrochemical studies (M,N) of co-alloyed TiO2-NTs with improved visible light absorption. (Invited)** — **F XIV.1**
Thomas Cottineau, Thomas Favet, Valérie Keller
CNRS / Université de Strasbourg. Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé

09:00 **Effects of SnO2 buffer layer thickness on materials and photoelectrocatalytic properties of BiVO4-based photoanode** — **F XIV.2**
Segi Byun, Bumsoo Kim, Seokwoo Jeon, Byungha Shin
Korea Advanced Institute of Science and Technology (KAIST)

09:15 **Elucidating the dynamics of photogenerated holes and charge separation in WO3/BiVO4 heterojunction photoanodes** — **F XIV.3**
Carles Rafols i Belles, Andreas Kafizas, Ehsan Ahmad
Department of Chemistry, Imperial College London, Kensington, London SW7 2AZ

09:30 **TiO2-carbon dots hybrid materials for electrophotocatalysis applications** — **F XIV.4**
Delphine Schaming, Baptiste Notebaert, Souad Ammar
ITODYS, University Paris Diderot, Sorbonne Paris Cité, UMR 7086 CNRS, 13 rue Jean-Antoine de Baïf, 75013 Paris, France

09:45 **Sonochemically Assisted In situ Electrochemical Synthesis of Ag/a-Fe2O3/TiO2 Nanotube-Arrays for Solar Mediated PEC Water Splitt** — **F XIV.5**
Ibrahim Khan, Ahsaulhaq Qurashi
Department of Chemistry, King Fahd University of Petroleum & Minerals (KFUPM), KSA, Center of Research Excellence in Nanotechnology, King Fahd University of Petroleum & Minerals (KFUPM), KSA

10:00 **Incident angular and intensity illumination dependence of integrated photoelectrochemial water splitting devices** — **F XIV.6**
Katharina Welter 1, Vladimir Smirnov 1, Jan-Philipp Becker 1, Wolfram Jaegermann 2, Friedhelm Finger 1
1 IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, D-52425, Jülich, Germany, 2 Institute of Materials Science, TU Darmstadt, D-64287 Darmstadt, Germany

10:15 **Coffee Break**

Photoreactors and Photocatalytic Materials : Thomas Cottineau

10:45 **Transient phenomena in photocatalysis, as studied by ultrafast FTIR measurements (Invited)** — **F XV.1**
Yaron Paz
Department of Chemical Engineering, Technion, Haifa 32000, Israel

11:15 **The impact of copper on the anatase to rutile transition in titanium dioxide and the photocatalytic properties** — **F XV.2**
Ciara Byrne (1&2), Lorraine Moran (3), Michael Nolan (4), Daphne Hermosilla (5), Steven Hinder (6), Suresh Pillai (1&2)
1. Nanotechnology and Bio-engineering Research Group, Department of Environmental Science, Institute of Technology Sligo, Sligo, Ireland, 2. Center for Precision Engineering, Materials and Manufacturing Research (PEM), Institute of Technology Sligo, Sligo, Ireland, 3. Department of Life Sciences, Institute of Technology Sligo, Sligo, Ireland, 4. Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland, 5. Department of Agricultural and Forest Engineering, University of Valladolid, Campus Duques de Soria, 42005 Soria, Spain, 6. The Surface Analysis Laboratory, Faculty of Engineering and Physical Sciences, University of Surrey, Guildford, Surrey, GU2 7XH, United Kingdom

11:30 **Optical penetration in a flow photocatalytic reactor** — **F XV.3**
Hoai Nga Le, Supreeth Venkatraman, Frank Babick, Klaus Kühn, Michael Stintz, Gianaurelio Cuniberti
Institute for Materials Science and Max Bergmann Center of Biomaterials, Technische Universität Dresden (TUD), Germany, Institute of Urban and Industrial Water Management, TUD, Germany, Institute of Process Engineering and Environmental Technology, TUD, Germany, Institute for Materials Science and Max Bergmann Center of Biomaterials, TUD, Germany, Institute of Process Engineering and Environmental Technology, TUD, Germany, Institute for Materials Science and Max Bergmann Center of Biomaterials, TUD, Germany

11:45 **Application and modelling of a new fixed-bed photocatalytic membrane reactor (FPMR)** — **F XV.4**
PHAN Duy Dung, Frank Babick, Michael Stintz
Institute of process engineering and environmental technology, Technische Universität Dresden, 01062 Dresden, Germany

12:00 **Effect of graphene size on the photocatalytic activity of TiO2 based composite films** — **F XV.5**
Y. Song, F. Massuyeau, P. Le Rendu, L. Yang , Y. Dan , T. P. Nguyen
Y. Song a,b , F. Massuyeau a, P. Le Rendu a, L. Yang b, Y. Dan b, T. P. Nguyen a* a Institut des Matériaux Jean Rouxel, 2 rue de la Houssinière, BP32229, 44322 Nantes, France b State Key Laboratory of Polymer Materials Engineering of China, Polymer Research Institute of Sichuan University, Chengdu 610065, PR China

12:15 **Order of magnitude increase in photocatalysis for hierarchically porous anatase thin films** — **F XV.6**
Nathanya J Platt, Karl M Kaye, Gregory J Limburn, Samuel D Cosham, Alexander N Kulak, Robert G Palgrave, Geoffrey Hyett*
University of Southampton, Southampton, UK UCL, London, UK University of Leeds, Leeds, UK

12:30 **Best Poster Awards**

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM G

Materials for improving energy storage battery technologies

Symposium Organizers :

Belabbes MERZOUGUI, Hamad Ben Khalifa University, Doha, Qatar

Joan Ramon MORANTE, IREC Catalonia Institute for Energy Research, Spain

Mike L. PERRY, United Technologies Research Center, Silver Lane, USA

Minhua SHAO, The Hong Kong University of Science and Technology, Kowloon, Hong Kong

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Monday 22 May 2017

Sodium Ion Batteries. : J.R.Morante and Belabbes A. Merzougui

09:00 **All-solid-state sodium ion batteries with NaSICON and ß”-alumina solid electrolytes** — G MM.1
P. Kehne, C. Guhl, Q. Ma, Frank Tietz, P. Komissinskiy, R. Hausbrandt
Department of Materialsciences, TU-Darmstadt, Advanced thin film technology, Department of Materialsciences, TU-Darmstadt, Surface science, Materials Development, Forschungszentrum Jülich, 52425 Jülich, Gemany, Helmholtz-Institute Münster, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany, Department of Materialsciences, TU-Darmstadt, Advanced thin film technology, Department of Materialsciences, TU-Darmstadt, Surface science,

09:30 **Structural and Electronic Properties of NaVOPO4 polymorphs as Cathode Materials for Na-Ion Batteries** — G MM.2
Pablo A. Aparicio (1), Saiful Islam (2), Nora de Leeuw (1,3)
(1) School of Chemistry, Cardiff University, Main Building, Park Place, Cardiff CF10 3AT, United Kingdom, (2) Department of Chemistry, University of Bath, Claverton Down, Bath BA2 7AY, United Kingdom, (3) Department of Chemistry, University College London, 20 Gordon Street, London, United Kingdom

09:45 **Synthesis and electrochemistry of sodium iron fluorophosphate synthesized by combustion method for rechargeable sodium batteries** — G MM.3
Lalit Sharma, Sylvain Franger, Prabeer Barpanda
Lalit Sharma, Faraday Materials Laboratory, Materials Research Center, Indian Institute of Science, Bangalore, India , Sylvain Franger, Institut de Chimie Moléculaire et des Matériaux d'Orsay Université Paris Sud / Université Paris-Saclay, Orsay, France, Prabeer Barpanda, Faraday Materials Laboratory, Materials Research Center, Indian Institute of Science, Bangalore, India

10:00 **The Effects of RuO2 Catalyst on Na-O2 Battery Electrochemistry** — G MM.4
Mohammad Fathi Tovini, Eda Yilmaz
Institute of Materials Science and Nanotechnology, National Nanotechnology Research Center (UNAM), Bilkent University, Ankara, Turkey 06800

10:15 **Carbon coated Ultrafine Fe2O3 Nanoparticles Embedded in Ordered Mesoporous Carbons (CMK-8) Framework for Sodium-Ion Batteries** — G MM.5
Purna Chandra Rath, Hsien Ming Kao
National Central University

10:30 **coffee break**

Sodium and Lithium ion Batteries : J.R.Morante and Belabbes A. Merzougui

11:00 **Hierarchical Architectures of Various Metal Oxides Decorated Ultrathin 2D Nanosheets for High-Performance Li- and Na-Ion Storage** — G MMa.1
Dezhi Kong, Ye Wang, Hui Ying Yang
Pillar of Engineering Product Development, Singapore University of Technology and Design, 8 Somapah Road, Singapore 487372, Singapore

11:30 **Na7V4(P2O7)4PO4 as an Amphoteric Active Phase in Sodium Ion Batteries** — G MMa.2
Soo Yeon Lim, Jang Wook Choi*
Graduate School of Energy, Environment, Water, and Sustainability (EEWS), Korea Advanced Institute of Science and Technology (KAIST) Republic of Korea

11:45 **Various WS2/carbonaceous Hierarchical Architectures for High-performance Rechargeable Lithium-ion and Sodium-ion Batteries** — G MMa.3
Ye Wang, Dezhi Kong, Hui Ying Yang
Pillar of Engineering Product Development, Singapore University of Technology and Design

12:00 **Facile, energy-savvy synthesis of Ti-based anodes for Li and Na ion batteries-Study of electrochemical and diffusion mechanism** — G MMa.4
A. Daya Mani*, P. Barpanda
Dr. A. Daya Mani- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012. Dr. P. Barpanda- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012.

12:15 **Lunch**

Sodium and Lithium ion Batteries II : J.R.Morante and Belabbes A. Merzougui

14:30 **Silicon Framework Allotropes for Li-ion and Na-ion Batteries: New Insights for a Reversible Capacity** — G MA.1
Asma Marzouk (a), Fernando A. Soto (b), Juan Carlos Burgos (b), Perla B. Balbuena (b), Fadwa El-Mellouhi (a)
(a) Qatar Environment and Energy Research Institute (QEERI), Hamad Bin Khalifa University, PO BOX 34110, Doha, Qatar , (b) Department of Chemical Engineering, Texas A&M University, College Station, Texas 77843, United States

15:00 **CNF/Metal Nanoparticle Hybrid Nanostructured Anodes for High Performance Alkali-ion Batteries** — G MA.2
Serap Hayat Soytas, Serkan Unal, Yusuf Z. Menceloglu
Sabanci University Nanotechnology Research and Application Center (SUNUM), Tuzla 34956 Istanbul, Turkey, Sabanci University Nanotechnology Research and Application Center (SUNUM), Tuzla 34956 Istanbul, Turkey, Faculty of Engineering and Natural Sciences, Sabanci University, Tuzla 34956 Istanbul, Turkey

15:15 **Novel Aluminum-Doped Mesoporous Titanium Dioxide Microspheres with Enhanced Electrochemical Properties for Lithium Ion Batteries** — G MA.3
Ce Zhang, Yunchuan Qi, Wei Yao and Fangming Cui
Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology (CAST) No.104 Youyi Street, Haidian District, Beijing 100094, China

15:30 **Garnet-type ionic conductors for all-solid-state lithium ion batteries** — G MA.4
Jian-Fang Wu, Lu Wei, Xin Guo*
Laboratory of Solid State Ionics, School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhan 430074, P.R. China

15:45 **Degradation of polyethylene separator with PVdF-HFP coating after ageing in a Li-ion battery: impact on performances** — G MA.5
X. Fleury, S. Geniès, P. X. Thivel
CEA/LITEN, F-38054 Grenoble, France and Univ. Grenoble Alpes, LEPMI, F-38000 Grenoble, France , CEA/LITEN, F-38054 Grenoble, France , Univ. Grenoble Alpes, LEPMI, F-38000 Grenoble, France

16:00 **coffee break**

Alternatives to Li ion batteries for higher energy densities : J.R.Morante and Belabbes A. Merzougui

16:30 **Controlling Li2O2 morphologies via NiFeOx nanofibers for high-performance Li-O2 batteries** — G MAa.1
Jiaqiang HUANG, Baoling HUANG, Jang-Kyo KIM
Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology, Clearwater Bay, Kowloon, Hong Kong, P.R. China

17:00 **Graphene coating of silicon nanoparticles with CO2 enhanced chemical vapor deposition for high volumetric energy density LIB** — G MAa.2
In Hyuk Son□, Ju-Myeung Lee, Sungsoo Han, Seok-Gwang Doo
Energy Material Lab, Material Research Center, Samsung Advanced Institute of Technology, Samsung Electronics Co., LTD, 130 Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-803, Republic of Korea. □Corresponding authors. E-mail: inhyuk74.son@samsung.com (I. H. S.)

17:30 **Effect of oxygen vacancy in electrochemical performance of CoMn2O4 cathode for Li-O2 battery** — G MAa.3
Zoya Sadighi, Jiaqiang Huang, Lei Qin, Shanshan Yao, Jiang Cui, Jang-Kyo Kim
Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong

Tuesday 23 May 2017

Characterization and modeling of electrochemical batteries : J.R.Morante and Belabbes A. Merzougui

08:30 **An operando XAFS method to quantitatively estimate valences of 3d metals in a cathode of lithium-ion battery** — G TM.1
Takeshi Kobayashi, Yasutaka Ohno, Tohru Yamamoto, Hiroyuki Yoshida, Yo Kobayashi, Hajime Miyashiro, and Yuichi Mita
Central Research Institute of Electric Power Industry

09:00 **Defect chemistry of solid electrolyte Li4P2S6 by first-principles calculations** — G TM.2
Marcel Sadowski, Sabrina Sicolo, Karsten Albe
Technische Universität Darmstadt

09:15 **Computational approaches to mass and ion diffusion in battery materials** — G TM.3
Timothy Flack (1), Salah Eddine Boulfelfel (2), Stefano Leoni (1)
(1) Materials Discovery Group. School of Chemistry, Cardiff University, Park Place, CF10 3AT UK (2) Georgia Institute of Technology, School of Chemical & Biomolecular Engineering, Atlanta, GA 30332-0100, USA

09:30 **Enhanced Potassium Diffusion on Phosphorene as an Anode Material** — G TM.4
Anass Sibari, Zineb Kerrami, Omar Mounkachi, Abdelilah Benyoussef, Mohammed Benaissa
Laboratory of Magnetism and Physics of High Energies, Department of Physics, Faculty of Sciences, University Mohammed V Rabat, Morocco, Laboratory of Magnetism and Physics of High Energies, Department of Physics, Faculty of Sciences, University Mohammed V Rabat, Morocco, Institute of Nanomaterials and Nanotechnology MAScIR Rabat, Morocco, Laboratory of Magnetism and Physics of High Energies, Department of Physics, Faculty of Sciences, University Mohammed V Rabat, Morocco, Laboratory of Magnetism and Physics of High Energies, Department of Physics, Faculty of Sciences, University Mohammed V Rabat, Morocco.

09:45 **coffee break**

Alternative battery components and supercapacitors. : J.R.Morante and Belabbes A. Merzougui

10:15 **Designing Redox-active Polymers for Safe and Low-cost Energy Storage** — G TMa.1
Yanking Liang and Yan Yao
Department of Electrical and Computer Engineering, University of Houston, Houston, Texas, 77204, USA

10:45 **Optical spectroscopy investigation of polymers for electrochemical energy storage** — G TMa.2
Davide Moia1, Alexander Giovannitti2, Anna Szumska1, Matyas Zetek1,3, Elham Rezasoltani1, Iain McCulloch2, Piers R. F. Barnes1, Jenny Nelson1
1 Department of Physics Imperial College London, Prince consort road, London, SW7 2AZ, UK 2 Department of Chemistry Imperial College London, Exhibition road, London, SW7 2AZ, UK

11:15 **Silicon Incorporation in Carbon Nanofibers through Polymer Chemistry** — G TMa.3
Ali Ansari Hamedani, Serap Hayat Soytaş
Materials Science and Nano Engineering Program, Sabanci University, Orhanli, Tuzla, Istanbul 34956, Turkey Sabancı University Nanotechnology Research and Application Center (SUNUM), Orhanli, Tuzla, Istanbul 34956, Turkey

11:30 **Enhanced anode material for Metal-Free Redox Flow Batteries** — G TMa.4
Javier Vazquez-Galvan, [a] *, Joan Ramon Morante [a,b] and Cristina Flox [a]
[a] Department of Advanced Materials for Energy Catalonia Institute for Energy Research Jardins de les Dones de Negre, 1, 08930 Sant Adria de Besos, Barcelona. [b] Departament d'Electronica, Facultat de Fisica, Universitat de Barcelona, Spain. fjvazquez@irec.cat

11:45 **Graphene based flowable electrodes for supercapacitors** — G TMa.5
Michaela Meyns (1), Avireddy Hemesh (1), Junfeng Liu (1), Andreu Cabot (1,2), Cristina Flox (1), Joan Ramon Morante (1,3)
(1) Catalonia Institute for Energy Research (IREC), 08930 Sant Adrià de Besòs, Barcelona, Spain, (2) ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain, (3) Departament d'Electronica, Universitat de Barcelona, 08028 Barcelona, Spain.

12:00 **Rational tailoring of electrospun electrodes towards ultra-high charge-discharge supercapacitors** — G TMa.6
Hemesh Avireddy [a,b], Cristina Flox [a], PengYi Tang [a,c] Jordi Arbiol [c,d], Joan Ramon Morante [a, b]
[a] IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain. [b] Faculty of Physics, University of Barcelona, Barcelona, Spain. [c] Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain [d] ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Catalonia, Spain Address – IREC, Jardins de les dones de Negre 1, 08930 Sant Adrià del Besos, Barcelona, Spain Corresponding author email - ahemesh@irec.cat

12:15 **Lunch**

Characterization and Operando procedures for batteries : J.R.Morante and Belabbes A. Merzougui

14:30 **Acoustic emission and thermal flow measurement as in-operando techniques for battery monitoring and safety issues prevention** — G TA.1
Nicolas Guillet 1, Clément Primot 1, Florence Degret 2, and Pierre-Xavier Thivel 2
1- Univ. Grenoble Alpes, INES, F-73375 Le Bourget du Lac, France CEA, Liten, F-38054 Grenoble, France 2- Univ. Grenoble Alpes, CNRS, LEPMI, F-38000 Grenoble, France

15:00 **Tracking structural changes upon cycling using quantitative electron diffraction** — G TA.2
Olesia M. Karakulina1, Artem M. Abakumov12, Joke Hadermann1
1 EMAT, University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium, 2 Skoltech Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Nobel str. 3, 143026 Moscow, Russia

15:15 **Operando X-ray diffraction studies of high-capacity electrode materials using capillary based micro-battery cells** — G TA.3
Rune E. Johnsen, Poul Norby
Technical University of Denmark, Department of Energy Conversion and Storage, Frederiksborgvej 399, DK-4000 Roskilde, Denmark

15:45 **Structural complexity in SOFC nickelate-based cathode material studied by non-ambient in-situ single crystal x-ray diffraction** — G TA.4
Mr. Rajesh Dutta, Dr. Avishek Maity, Dr. Monica Ceretti, Dr. Antoine Villesuzanne, Prof. Werner Paulus
ICMCB, UPR 9048, University Bordeaux, 33600 Pessac, France, Institut Charles Gerhardt, UMR 5253, CNRS-University Montpellier, 34095 Montpellier, France

16:00 **Structural, dielectric and AC conductivity studies of polycrystalline Ni1-xCoxFe2O4 spinel ferrites** — G TA.5
Brajesh Nandan, Subhash C. Kashyap, and M. C. Bhatnagar
Department of Physics, Indian Institute of Technology Delhi, New Delhi – 110016, India

16:15 **coffee break**

Poster Session : J.R.Morante and Belabbes A. Merzougui

16:30 **Microwave Assisted Synthesis of RGO/MoS2 Nanocomposite Material as Anode Material in Lithium Ion Batteries** — G TAa.1
M. Jeevan Kumar Reddy, A. M. Shanmugharaj, Sung Hun Ryu*
Department of Chemical Engineering, Kyung Hee University

16:30 **Supramolecular Hydrogels Directed Self-assembly of C, N-doping Hollow CuO as High-performance Anode Materials for Li-ion Batteri** — G TAa.2
Fucong Lyu, Zhouguang Lu, Yangyang Li, Jian Lu.
City University of Hong Kong, Hong Kong SAR.

16:30 **Flake NiFe2O4 Anode with Enhanced Lithium Storage Properties for Lithium-Ion Battery** — G TAa.3
Xianhua Hou, Junwei Mao, Lina Qu, Xiaoqiao Hu
Guangdong Engineering Technology Research Center of Efficient Green Energy and Environment Protection Materials, Guangzhou 510006, PR China. Guangdong Provincial Key Laboratory of Quantum Engineering and Quantum Materials, School of Physics and Telecommunication Engineering, South China Normal University, Guangzhou 510006, PR China.

16:30 **Performance of Fe2O3/Carbon Aerogel Anodes Materials for Lithium-ion Batteries** **G TAa.4**
Qian Sun, Kam Chun Sing, Aleksandra B. Djurišić, Xiang Liu, Mao Hai. Xie, Alan Man Ching Ng, Hangkong Li, Kaimin Shih
Qian Sun,Kam Chun Sing, Aleksandra B. Djurišić, Xiang Liu, Mao Hai. Xie, Department of Physics, The University of Hong Kong, Hong Kong, China, Alan. M. C. Ng, Department of Physics, South University of Science and Technology of China, Shenzhen, China, Hangkong Li, Kaimin Shih, Department of Civil Engineering, The University of Hong Kong, Hong Kong, China.

16:30 **Ionic Conduction in Nanodimensional 30Na2O.70SiO2 Glasses Grown within Mesoporous Silica** **G TAa.5**
Soumi Chatterjee1, 2, *, Shyamal Kumar Saha2, Dipankar Chakravorty1
1 MLS Professor's Unit, Indian Association for the Cultivation of Science, 2A and 2B Raja S. C. Mullick Road, Kolkata 700032, India 2 Department of Materials Science, Indian Association for the Cultivation of Science, 2A and 2B Raja S. C. Mullick Road, Kolkata 700032, India *mssc3@iacs.res.in

16:30 **FeS nanoparticles wrapped N- and S co-doped three dimensional carbon as a high performance lithium-ion battery anode material** **G TAa.6**
Jae Hyun Kim, Prakash Ramakrishnan, Seong-Ho Baek, and Yiseul Park
Smart Textile Convergence, Daegu Gyeongbuk Institute of Science and Technology (DGIST), 333, Techno Jungang Daero, Hyeonpung-myeon, Dalseong-gun, Daegu, 42988, Republic of Korea

16:30 **Preparation of a-TiO2/c-RuO2 Hybrid Cathode for Non-Aqueous Li-Air Battery** **G TAa.7**
Mihye Wu, Jisu Kim, Sungho Choi, Yongku Kang, Ha-Kyun Jung*
Advanced Materials Division, Korea Research Institute of Chemical Technology

16:30 **Electrochemical Deposition of MnO2 Nanosheets on Au Nanothorns Covered Carbon Fiber and Application for Li-ion Battery** **G TAa.8**
Wei-Ming Lin, Yu-Lin Tsai, Chi-Young Lee, Hsin-Tien Chiu
Department of Applied Chemistry, National Chiao Tung University, Hsinchu, Taiwan, R.O.C.

16:30 **Graphene-reduced graphene oxide composite for the application in energy storage system** **G TAa.9**
Taeseup Song1, Su Mi Park1, Haekyoung Kim1, Yeon-Gil Jung2 and Je-Hyun Lee2
1School of Materials Science and Engineering, Yeungnam University, Gyeongsan, 712-749, Korea 2School of Nano and Advanced Materials Engineering, Changwon National University, Changwon 641-773, South Korea e-mail address: tsong@yu.ac.kr

16:30 **A metal-organic framework-deposited felt electrode for vanadium redox flow batteries** **G TAa.10**
Jung Hoon Yang, Jung Jin Park, Nari Yoon
Conversion Materials Laboratory, Korea Institute of Energy Research (KIER), 152 Gajeong-ro, Yuseong-gu, Daejeon, 34219, Republic of Korea, Department of Chemical and Biomolecular Engineering, Korea Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon, 34141, Republic of Korea, Conversion Materials Laboratory, Korea Institute of Energy Research (KIER), 152 Gajeong-ro, Yuseong-gu, Daejeon, 34219, Republic of Korea

16:30 **Electrodeposited hierarchical metal and metal oxide foams with superior performance for lithium–oxygen battery cathodes** **G TAa.11**
Kyoung Hwan Kwak, Yongku Kang, Jungdon Suk
Advanced Materials Division, Korea Research Institute of Chemical Technology

16:30 **First principle analysis of catalytic activity of phosphide surfaces** **G TAa.12**
Kapil Gupta, Ki-Ha Hong, Seung-Cheol Lee
Indo-Korea Science and Technology Center, Hanbat University, Indo-Korea Science and Technology Center

16:30 **Polyimides containing amino-quinone to improve the electrochemical performances of tin-based anode in lithium ion batteries** **G TAa.13**
Jihye Park, Jinmin Kim, Yongku Kang, Jungdon Suk, Mijeong Han
Advanced Materials Division, Korea Research Institute of Chemical Technology

16:30 **Hydrogenated V2O5 Nanosheets for Superior Lithium Storage Properties** **G TAa.14**
Xiang Peng, Paul K. Chu
Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China

16:30 **High-performance colossal permittivity materials of (Nb Er) co-doped TiO2 for large capacitors and high-energy-density storage** **G TAa.15**
Mei-Yan Tse a, Xianhua Wei ab, Jianhua Hao a
a: Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Hong Kong, P. R. China. E-mail: jh.hao@polyu.edu.hk, Fax: 852 23337629, Tel: 852 27664098 b: State Key Laboratory Cultivation Base for Nonmetal Composites and Functional Materials, Southwest University of Science and Technology, Mianyang 621010, P. R. China

16:30 **Effect of substitution La by Mg on electrochemical and electronic properties in La2-xMgxNi7: a combined experimental and ab init** **G TAa.16**
M. Werwinski *a, M. Nowak #, A. Szajek *, A. Marczynska *, L. Smardz * and M. Jurczyk #* Institute of Molecular Physics, Polish Academy of Sciences, Smoluchowskiego 17, 60-179 Poznan, Poland, # Institute of Materials Science and Engineering, Poznan University of Technology, Jana Pawla II No 24, 61-138 Poznan, Poland, a corresponding author - E-mail: werwinski@ifmpan.poznan.pl

16:30 **Solar energy storage system with recycled hydrogen carriers** **G TAa.17**
Yoshio Ohshita, Hideaki Machida, Toshikazu Takada, Atsushi Ogura
Toyota Techonological Institute, Gas-Phase Growth Ltd., Meiji University, Meiji University

16:30 **Electrodeposited Sn-Ni alloy as anode material for 3D Lithium-Sulfur battery** **G TAa.18**
A. Adi, B. Tolegen, A. Aishova, A. Nurpeissova, Z. Bakenov
Institute of Batteries, Block 13, 53 Kabanbay Batyr Ave., Astana 010000, Kazakhstan Nazarbayev University Research and Innovation System, 53 Kabanbay Batyr Ave., Astana 010000, Kazakhstan School of Engineering, Nazarbayev University, 53 Kabanbay Batyr Ave., Astana 010000, Kazakhstan

16:30 **Hydroquinone based fluorinated sulfonated copolytriazoles for proton exchange membrane application** **G TAa.19**
Asheesh Singh, Susanta Banerjee
Materials Science Centre, Indian Institute of Technology, Kharagpur 721302, India Tel.: +913222-283-272 , Fax: +91-322-255303.

16:30 **Building Conducting Redox Polymer Batteries** **G TAa.20**
Christian Strietzel, Rikard Emanuelsson, Maria Strømme, and Martin Sjödin
Nanotechnology and Functional Materials, Department of Engineering Sciences The Ångström Laboratory, Uppsala University, Box 534, SE-751 21 Uppsala, Sweden

16:30 **Electrochemical Characterization of Conducting Redox Polymers – Redox Matching and Mass Transport** **G TAa.21**
Mia Sterby, Rikard Emanuelsson, Maria Strømme, Martin Sjödin
Nanotechnology and Functional Materials, Department of Engineering Sciences The Ångström Laboratory, Uppsala University, Box 534, SE-751 21 Uppsala, Sweden

16:30 **Ordered, tunable silicon nanotube arrays as a lithium ion battery material** **G TAa.22**
Ying Zhuo, Gunther Möller, Julien Bachmann
Department of Chemistry and Pharmacy, Friedrich-Alexander Universität Erlangen-Nürnberg, Germany

16:30 **Mesoporous C-coated SnOx nanosheets on copper foil as flexible and binder-free anodes for superior sodium-ion batteries** **G TAa.23**
Haidong Bian, Xufen Xiao, Shanshan Zeng, Muk-Fung Yuen, Zebiao Li, Wenpei Kang, Denis Y.W.Yu, Zhengtao Xu,*, Jian Lu, Yang Yang Li*
Center of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, Kowloon, Hong Kong, China, Department of Biology and Chemistry, City University of Hong Kong, Kowloon, Hong Kong, China, Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong, China

16:30 **Tailoring Kirkendall effect on Fe-Fe2O3 core-shell incorporated on porous CNFs towards high power Supercapacitors** **G TAa.24**
Hemesh Avireddy [a,b], José Miguel Delgado Galindo [a,b], Cristina Flox [a], Cristian Fabrega Gallego [b], PengYi Tang [a,c] Jordi Arbiol [c,d], Joan Ramon Morante [a, b] [a] IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain. [b] Faculty of Physics, University of Barcelona, Barcelona, Spain. [c] Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain [d] ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Catalonia, Spain Corresponding author email - ahemesh@irec.cat Address – IREC, Jardins de les dones de Negre 1, 08930 Sant Adrià del Besos, Barcelona, Spain

16:30 **Electrochemical performance of Terephthalate-Functionalized Poly(3,4-ethylenedioxythiophene) conducting redox polymer** **G TAa.25**
Huan Wang, Xiao Huang, Maria Strømme, and Martin Sjödin
Nanotechnology and Functional Materials, Department of Engineering Sciences The Ångström Laboratory, Uppsala University, Box 534, SE-751 21 Uppsala, Sweden

16:30 **Enhancing the performance of 5.2 V spinel electrodes by fluorination** **G TAa.26**
Anna Windmüller (1,2), Chih-Long Tsai (1,2), Sören Möller (1), Matthias Balski (3), Yoo Jung Sohn (1,2), Sven Uhlenbruck (1,2), Olivier Guillon (1,2)
1) Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK), 52425 Jülich, Germany, 2) Jülich Aachen Research Alliance: JARA-Energy, 3) Forschungszentrum Jülich GmbH, Central Institute for Engineering, Electronics and Analytics (ZEA-3), 52425 Jülich, Germany

16:30 **One-dimensional reduced graphene oxide/V2O5 nanobelts as a cathode material for lithium-ion batteries** **G TAa.27**
Won G. Hong1, Sang Moon Lee1, Jin Bae Lee1, Byung Hoon Kim2 and Hae Jin Kim1*
1 Division of Electron Microscopy Research, Korea Basic Science Institute, Daejeon 305-333, Republic of Korea 2 Department of Physics, Incheon National University, Incheon 406-772, Republic of Korea

16:30 **Electrode Materials for Lithium and Post-lithium Ion Batteries** **G TAa.28**
Charaf Cherkouk1, Max Stöber1, Tina Nestler1, Tilmann Leisegang1, Matthias Schelter2, Jens Zosel2, Slawomir Prucnal3, Dirk C. Meyer1
1. Institute for Experimental Physics, TU Bergakademie Freiberg, Leipziger Straße 23, 09596 Freiberg, Germany 2. Kurt-Schwabe Institute for Measuring and Sensor Technology Meinsberg, Fabrikstraße 69, 04720 Ziegra-Knobelsdorf, Germany 3. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden Rossendorf, Bautzner Landstraße 400, 01314 Dresden, Germany

16:30 **NaMnO2 cathodes for sodium ion batteries** **G TAa.29**
Mustafa Zaid Abdullah1, 2, Muhammad Al-Timimi1, 3, Elena Cristina Serban1, Ioan Stamatin1
1.University of Bucharest, Physics Department, 3 Nano-SAE Research Center, Bucharest, Romania 2.Ministry Of Science and Technology, Directorate of Materials Research, Baghdad, Iraq 3.University of Diyala, College of Science, Physics Department, Baquba, Iraq

16:30 **Morphology controlled Ti doping of hematite as high performance negative electrodes in Lithium ion batteries** **G TAa.30**
Nan Shen1, Miriam Keppeler1, Barbara Stiaszny2, Holger Hain2, Filippo Maglia2, Madhavi Srinivasan1
1BMW-NTU Future Mobility Research Lab, Nanyang Technological University, School of Materials Science and Engineering and Energy Research Institute at Nanyang (ERI@N), Research Techno Plaza, X-Frontier Blk, 50 Nanyang Drive, Singapore 637553, Singapore 2BMW Group, Petuelring 130, 80788 München, Germany.

Semisolid and Flow Batteries : J.R.Morante and Belabbes A. Merzougui

09:00 **Improved slurries formulations for high-performance semi-solid flow batteries** **G WM.1**
Cristina Flox 1, Jordi Jacas 1, Miriam Gonzalez 1,Juan R. Morante 1,2
1. Catalonia Institute for Energy Research, IREC, Jardins de les Dones de Negre 1, 08930 Sant Adriá de Besós, Barcelona, Spain 2.Departament d'Electronica, Facultat de Fisica, Universitat de Barcelona, Martí i Franques 1,08028 Barcelona, Spain.

09:30 **Flow Batteries from Materials to Systems, Challenges and Opportunities** **G WM.2**
Rachid Zaffou and Belabbes Merzougui
Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Doha, Qatar

10:00 **An improved suspension recipe for Semi Solid Flow Batteries** **G WM.4**
Jordi Jacas Biendicho1*, Cristina Flox1 and Joan Ramon Morante1,2
1Catalonia Institute for Energy Research, Jardins de les Dones de Negre, 1, 08930 Sant Adrià del Besos (Spain),2Departament d'Electronica, Universitat de Barcelona, C. de Martí I Franquès, 1, 08028 Barcelona (Spain)

10:15 **Study of Slurry Electrode for Flow Cell Energy Storage Systems** **G WM.5**
Ahmed Sodiq, Belabbes Merzougui, Rachid Zaffou
College of Science and Engineering, Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Doha, Qatar

10:30 **coffee break**

Flow Redox Batteries and Air Metal Batteries. : J.R.Morante and Belabbes A. Merzougui

10:45 **Post thermal modification of rutile-TiO2 shell on graphite core structure for high-performance vanadium redox flow batteries** **G WMa.1**
Javier Vazquez-Galvan, [a]* Cristina Flox [a] and Joan Ramon Morante [a,b]
[a] Department of Advanced Materials for Energy Catalonia Institute for Energy Research. [b] Departament d'Electronica, Facultat de Fisica, Universitat de Barcelona, Spain. Jardins de les Dones de Negre, 1, 08930 Sant Adria de Besos, Barcelona. fjvazquez@irec.cat

11:00 **Vanadium Redox Flow Battery operation parameters optimization** **G WMa.2**
Seyedabolfazl Mousavihashemi (*a,b), Miriam González-Castano (b), Cristina Flox (b), Mir Ghasem Hosseini (a), Joan Ramón Morante (b).
a Department of Physical Chemistry, Electrochemistry Research Laboratory, University of Tabriz, Tabriz, Iran b IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain

11:15 **Carbon nitride species for VRFBs: synthesis method relevance** **G WMa.3**
M. González-Castaño, S. Murcia, C.Flox, J.R. Morante
IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain

11:30 **Sulfidation of NiMn Layered Double Hydroxides as Oxygen Evolution Reaction Catalyst for Rechargeable Zn–Air Batteries** **G WMa.4**
Afriyanti Sumboja (a), Jingwei Chen (b), Yun Zong (a*), Pooi See Lee (b*), and Zhaolin Liu (a*)
(a) Institute of Materials Research and Engineering (IMRE), A*STAR (Agency for Science, Technology and Research), 2 Fusionopolis Way, Innovis, #08-03, 138634, Singapore (b) School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Blk N4.1, 639798, Singapore *email: zl-liu@imre.a-star.edu.sg, pslee@ntu.edu.sg, y-zong@imre.a-star.edu.sg

12:00 **Mussel-Inspired Facile Synthesis of CoFe2O4/CoFe/C-PDA Porous Nanofibers as Efficient Oxygen Electrocatalyst for ZnABs** **G WMa.5**
Jia Ming Ang, Bing Li, Shibo Xi, Yonghua Du, Chenyang Zhao, Junhua Kong, Xuehong Lu
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798: Jia Ming Ang, Chenyang Zhao, Xuehong Lu Institute of Chemical and Engineering Sciences, A*STAR (Agency for Science, Technology and Research), 1 Pesak Road, Jurong Island, Singapore 627833: Shobo Xi, Yonghua Du Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), 2 Fusionopolis Way, Singapore 138634: Junhua Kong

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM H

Inorganic thermoelectrics - linking material properties and systems engineering for XXI century applications

Symposium Organizers :

Bertrand LENOIR, CNRS - Université Lorraine, Nancy, France

Jan D. KÖNIG, Fraunhofer IPM, Freiburg, Germany

Marisol MARTIN-GONZALEZ, Instituto de Microelectronica de Madrid, Spain

Min GAO, Cardiff University, U.K.

Tuesday 23 May 2017

Theory I : Zianni Xanthippi

08:30 **Electronic transport simulations in nanocomposites – exploring the features that optimize the thermoelectric power factor** — **H 1.1**
Samuel Foster, Mischa Thesberg, Hans Kosina, and Neophytos Neophytou
School of Engineering, University of Warwick, Institute for Microelectronics, Vienna University of Technology

09:00 **Giant Enhancement of Thermoelectric Figure-of-merit in Si-based Materials by Nanostructuring** — **H 1.2**
yanguang Zhou, Ming Hu
Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

09:15 **Hierarchical material design for thermoelectric materials: a multiscale computational and experimental paradigm** — **H 1.3**
Stefano Leoni (1), Luis Craco (2), Duncan Hardie (1)
1 School of Chemistry, Cardiff University, Cardiff, CF10 3AT, UK 2 Instituto de F´ısica, Universidade Federal de Mato Grosso, 78060-900, Cuiab´a, MT, Brazil

09:30 **Ab initio molecular dynamics study of thermal and dynamical properties of Ordered-Disordered Ag2Te** — **H 1.4**
Biyao Wu, Ming Hu
Institute of Mineral Engineering, RWTH Aachen University, Institute of Mineral Engineering, RWTH Aachen University

09:45 **Advanced materials with low-dimensional electronic transport for thermoelectric applications** — **H 1.5**
Daniel I. Bilc ^1, Calin G. Floare ^1, Liviu P. Zârbo ^1, Sorina Garabagiu ^1, Sebastien Lemal ^2, Philippe Ghosez ^2
^1 National Institute for Research & Development of Isotopic & Molecular Technologies, Ro-400293 Cluj-Napoca, Romania, ^2 Physique Théorique des Matériaux, Q-MAT, CESAM, Université de Liège, B-4000 Liège, Belgium

10:00 **Coffee break**

Therory II : Gao Min

10:30 **Resonant states: an alternative pathway to boost thermoelectric properties in doped materials** — **H 2.1**
S. Thébaud, Ch. Adessi , S. Pailhès , G. Bouzerar
Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière

10:45 **Designing energy filtering in nanocomposites for efficient thermoelectric energy conversion** — **H 2.2**
Xanthippi Zianni
Dept. of Aircraft Technology, Technological Educational Inst. of Sterea Ellada, 34400 Psachna, Greece

11:00 **On the maximization of the thermoelectric cooling of graded Peltier by analytical heat equation resolution.** — **H 2.3**
Etienne Thiébaut, Christophe Goupil, François Pesty, Yves D'Angelo, Guillaume Guegan, Philippe Lecoeur
Centre de Nanosciences et de Nanotechnologies (C2N), Orsay, France, Laboratoire Interdisciplinaire des Energies de Demain (LIED), Paris, France, Centre de Nanosciences et de Nanotechnologies (C2N), Orsay, France, Laboratoire de Mathématiques J.A. Dieudonné, Nice, France, STMicroelectronics, Tours, France, Centre de Nanosciences et de Nanotechnologies (C2N), Orsay, France

11:15 **Role of Rattlers in Engineering Thermoelectric Silicon Tetrahedral Cage Framework** — **H 2.4**
Jia-Yue Yang, Ming Hu
Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany

11:30 **First–Principles Study of the Transport Properties in Bulk and Monolayer MX3 (M = Ti, Zr, Hf and X = S, Se) Compounds.** — **H 2.5**
Yasir Saeed, Ali Kachmar, Marcelo A. Carignano
Qatar Environment and Energy Research Institute (QEERI), Hamad Bin Khalifa University (HBKU), Qatar Foundation, P.O. Box 5825, Doha, Qatar

11:45 **Enhanced thermoelectric efficiency of SnO2 at room temperature under biaxial strain** — **H 2.6**
Zineb Kerrami, Anass Sibari, Omar Mounkachi, Abdelilah Benyoussef, Mohammed Benaissa
Zineb Kerrami (Faculty of Sciences University Mohammed V Rabat, Morocco), Anass Sibari (Faculty of Sciences University Mohammed V Rabat, Morocco), Omar Mounkachi (Institute of Nanomaterials and Nanotechnology MAScIR Rabat, Morocco), Abdelilah Benyoussef (Institute of Nanomaterials and Nanotechnology MAScIR Rabat, Morocco, Hassan II Academy of Science and Technology Rabat, Morocco), Mohammed Benaissa (Faculty of Sciences University Mohammed V Rabat, Morocco)

12:00 **Lunch**

Advances in Chalcogenides : Benjamin Balke

13:30 **Detailed reinvestigation of the thermal properties of single-crystalline SnSe** — **H 3.1**
Dorra Ibrahim, Jean-Baptiste Vaney, Selma Sassi, Christophe Candolfi, Viktoriia Ohorodniichuk, Petr Levinsky, Philippe Masschelein, Anne Dauscher, Bertrand Lenoir
Institut Jean Lamour, UMR 7198 CNRS – Université de Lorraine, Parc de Saurupt, CS 50840, F-54011 NANCY Cedex, France

14:00 **In4Se3 as a thermoelectric material:** — **H 3.2**

approacH es in enabling H igH power conversion efficiency in polycrystalline system
Pankaj Kumar Rawat

14:15 **Selective chemical vapour deposition of the thermoelectric chalcogenides Bi2Te3 and Sb2Te3** — **H 3.3**
R. Huang and C.H. de Groot
Electronics & Computer Science and Chemistry, University of Southampton, SO17 1BJ Southampton, United Kingdom

14:30 **Effect of nanoinclusions on simultaneous improvement in electron transport and phonon scattering properties Bi2Te3 nanocomposite** — **H 3.4**
Khushboo Agarwal, Mujeeb Ahmad, Deepak Varandani and B. R. Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi New Delhi, 110016, India

14:45 **Screening of thermoelectric half-Heuslers using the figure-of-merit from first principles** — **H 3.5**
Ole Martin Løvvik, Kristian Berland
SINTEF Materials and Chemistry, Center for Materials and Nanotechnology, University of Oslo, Center for Materials and Nanotechnology, University of Oslo

15:00 **Enhanced thermoelectric properties in pulsed laser deposition-prepared Bi0.5Sb1.5Te3 thin films on solid and flexible substrate** — **H 3.6**
E. Symeou, Ch.Nicolaou, J. Giapintzakis
Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus

15:15 **New approach in the growth of thin films of Selenides (P and N Type) with high figures of merit** — **H 3.7**
J. A. Perez-Taborda, F. Briones and M S Martin-Gonzalez
Instituto de Microelectrónica de Madrid, CSIC, 28760 Tres Cantos, Madrid, Spain

15:30 **Ion-track etched templates for the high density growth of nanowire arrays of bismuth telluride alloys** — **H 3.8**
E. Koukharenko, N. M. White and I. S. Nandhakumar
School of Electronics and Computer Science, University of Southampton, Southampton, SO17 1BJ, UK School of Chemistry, University of Southampton, Southampton, SO17 1BJ, UK

15:45 **Improvement of Thermoelectric Performance of spark plasma sintered Sn doped Cu3SbSe4: a promising thermoelectric material** — **H 3.9**
Kriti Tyagi, Nagendra Singh Chauhan, Bhasker Gahtori, Bathula Sivaiah, Ajay Dhar and K. Sreenivas
Department of Physics, Delhi University, Delhi CSIR - National Physical Laboratory, New Delhi

16:00 **Coffee break**

16:30 **Strain effects on the electronic and thermoelectric properties of Bi2Te3: A first principal study** — H 4.1
M. Hajji (a,b) H. Labrim (b), H. Ez-Zahraouy (a), M.Benaissa (a) , A. Benyoussef (c,d)
(a) LMPHE, URAC-12,, Faculty of Sciences, Mohammed V University in Rabat, Morocco
(b) CNESTEN (National Centre for Energy, Sciences and Nuclear Techniques), route de Kenitra – Maamora (c) Hassan II Academy of Science and Technology, Rabat, Morocco
(d) Institute of Nanomaterials and Nanotechnologies, MAScIR, Rabat, Morocco

16:30 **High thermoelectric potential of PbTe doped with minute amount of Ti** — H 4.2
Genady Komisarchik, David Fuks, Yaniv Gelbstein
Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel. e-mail: genadyk@post.bgu.ac.il

16:30 **A Novel Graphene-copper Hybrid System for Future Interconnect** — H 4.3
YaWen Su
Assistant Researcher Fellow of National Nano Device Laboratories / National Applied Research Laboratories No.26, Zhanye 1st Rd., Science Park, Hsinchu City, Taiwan 30078

16:30 **Calculation of structural electronic and transport properties of Mg2Si (1-x) Snx** — H 4.4
Brahim MARFOUA1+, Brahim LAGOUN 2, Hamza LIDJICI 1,3
1Laboratoire d'étude et développement des matériaux semi-conducteurs et diélectriques, Université de Laghouat, Route de Ghardaïa B.P.37G. Laghouat. Algérie. 2Laboratoire de physique des matériaux, Université de Laghouat, Route de Ghardaia B.P.73G. Laghouat. Algérie. 3Laboratoire des Matériaux et Procédés, Université de Valenciennes et du Hainaut-Cambrésis, Z.I du Champ de l'Abbesse 59600 Maubeuge, France.

16:30 **Tailoring Thermal Transport in Half-Heusler TiNiSn/HfNiSn Superlattices** — H 4.5
Paulina Komar (1), Niklas Reuter (1), Emigdio Chavez-Angel (1), Sven Heinz (1), Benjamin Balke (2), Gerhard Jakob (1)
(1) Institute of Physics, Johannes Gutenberg University Mainz, 55099 Mainz, Germany, (2) Institute of Inorganic and Analytical Chemistry, Johannes Gutenberg University Mainz, 55099 Mainz, Germany

16:30 **Improved thermoelectric characteristics of n-type Mg2Si and surface passivation for oxidation perseverance** — H 4.6
Koki Kaita, Mitsunobu Nakatani, Yuma Nagatsuka, Kai Ikeda, Syoji Takemoto, An Ozeki, Atsuo Yasumori, Tsutomu Iida
Department of Materials Science and Technology, Tokyo University of Science, 6-3-1 Niijyuku, Katsushika-ku, Tokyo 125-8585, Japan

16:30 **High-performance Bi-Te based thick films and thermoelectric device prepared by screen printing technology** — H 4.7
Li-Chi Chen, Chien-Neng Liao
Department of Materials Science and Engineering, National Tsing Hua University

16:30 **Thermoelectric properties of Bi2Te2.7Se0.3 nanocomposites embedded with ZnO nanoparticles** — H 4.8
Sungjae Joo, Jihee Son, Bokki Min, Bongseo Kim, Sudong Park, Jieun Lee, Byungki Ryu, Heewoong Lee
Korea Electrotechnology Research Institute

16:30 **Formation of thermoelectric metal silicides by pack cementation** — H 4.9
A. Teknetzi1, E. Tarani1, D. Stathokostopoulos1, D. Chaliampalias1, S.A. Tsipas2, E. K. Polychroniadis1, E. Pavlidou1, K. Chrissafis1, E. Hatzikraniotis1, K.M. Paraskevopoulos1, G. Vourlias1
1Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2 Departamento de Ciencia e Ingeniería de Materiales e Ingeniería Química, IAAB, Universidad Carlos III de Madrid, Avda. de la Universidad, 30, 28911 Leganés, Madrid, Spain

16:30 **Size effects in thermoelectric power factor of nondegenerate and degenerate low-dimensional semiconductors** — H 4.10
Nguyen T. Hung, Ahmad R. T. Nugraha, Riichiro Saito
Department of Physics, Tohoku University, Sendai 980-8578, Japan

16:30 **Thermoelectric properties of monolayer group III chalcogenides from first-principles calculations and Boltzmann transport theory** — H 4.11
Ahmad R. T. Nugraha, Nguyen T. Hung, Riichiro Saito
Department of Physics, Tohoku University, Sendai 980-8578, Japan

16:30 **Effect of 2D MoS2 on the Electrical and Thermoelectric Properties of N-type Bismuth Telluride and P-type Antimony telluride** — H 4.12
Mujeeb Ahmad, Khushboo Agarwal, Deepak Varandani and B. R. Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi New Delhi, 110016, India

16:30 **Electronic and Thermoelectric Properties of Bi and Sn doped-Cu3SbSe4 from First Principles** — H 4.13
Gregorio García (a,b),Yu Liu (c), Silvia Ortega (c), Doris Cadavid (c), Pablo Palacios (a,d), Andreu Cabotc (c,e) and Perla Wahnón (a,b)
a. Instituto de Energía Solar, ETSI Telecomunicación, Universidad Politécnica de Madrid, 28040, Madrid, Spain.*email: perla@etsit.upm.es b. Departamento de Tecnología Fotónica y Bioingeniería, ETSI Telecomunicación, Ciudad Universitaria, s/n, 28040 Madrid, Spain. c. Catalonia Institute for Energy Research - IREC, 08930 Sant Adrià de Besòs, Barcelona, Spain *email: dcadavid@irec.cat, acabot@irec.cat d. Departamento de Física aplicada a las Ingenierías Aeronáutica y Naval. ETSI Aeronáutica y del Espacio, Pz. Cardenal Cisneros, 3, 28040 Madrid, Spain. e. ICREA, Pg. Lluis Companys 23, 08010 Barcelona, Spain

16:30 **FORMATION OF FILM MATERIAL ON CoSb3 BASED SKUTTERUDITE FOR THERMOELECTRIC DEVICES** — H 4.14
R.A. Shkarban, S.I. Sidorenko, Yu.N. Makogon
National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», 03056, Prospect Peremogy 37, Kyiv, Ukraine, e-mail: ruslan.shkarban@gmail.com

16:30 **Ternary Nanocrystals Based Porous SnSe1-xSx Nanosheets for Thermoelectric Applications** — H 4.15
Jooheon Kim
School of Chemical Engineering and Materials Science, Chung-Ang University

16:30 **DFT study of electronic properties of noble d-metallic low dimentional structures** — H 4.16
U.N. Kurelchuk, P.V. Borisyuk, Yu.Yu. Lebedinskii, O.S. Vasilyev,
National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

16:30 **High Thermoelectric Performance of p-type Bi0.5Sb1.5Te3 Bulk Alloys** — H 4.17
E. Symeou, I. Ioannou, Ch. Nicolaou, Th. Kyratsi, J. Giapintzakis
Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus

16:30 **Experimental and modeling evidence for enhanced thermoelectric performance by fine tuning the nano & micro-structural features** — H 4.18
E. Hatzikraniotis, G.S. Polymeris, K.M. Paraskevopoulos, Th. Kyratsi
Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, Institute of Nuclear Sciences, Ankara University, (AU – INS), 06100 Beşevler, Ankara, Turkey, Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, Department of Mechanical and Manufacturing Engineering, University of Cyprus, 1678 Nicosia, Cyprus

16:30 **Engineered ZnSb thin films grown by ns-PLD: a thermoelectric evaluation** — H 4.19
A. Bellucci (1), M. Girolami (1), M. Mastellone (1), S. Orlando (2), A. Mezzi (3), S. Kaciulis (3), R. Polini (1, 4), and D. M. Trucchi (1)
(1) Istituto di Struttura della Materia (ISM) del Consiglio Nazionale delle Ricerche (CNR) Sez. Montelibretti – Via Salaria km 29.300 00015 Monterotondo (RM), (2) Istituto di Struttura della Materia (ISM) del Consiglio Nazionale delle Ricerche (CNR) Sez. Tito Scalo – Contrada Santa Loja, 85050 Tito Scalo (Pz), (3) Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) del Consiglio Nazionale delle Ricerche (CNR) Sez. Montelibretti – Via Salaria km 29.300 00015 Monterotondo (RM), (4) Dipartimento di Scienze Tecnologie Chimiche, Università di Roma «Tor Vergata», Via della Ricerca Scientifica, 1, 00133 Rome, Italy

16:30 **Nanoscale and macroscale thermoelectric measurements of Bi2Te3 and Bi2Te3:G nanocomposite samples** — H 4.20
Khushboo Agarwal, Mujeeb Ahmad, Deepak Varandani and B. R. Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi New Delhi, 110016, India

16:30 **Effective decoupling of electrical and thermal conductivity by functional interfaces on Skutterudite/oxide nanocomposites** — H 4.21
M.Rull1, A.Moure2, B.Abad1, A.del Campo2, M.Muñoz1, M.H.Aguirre3-4, A.Jacquot5, J.F.Fernandez2, M.Martin-Gonzalez1
1.Instituto de Microelectrónica de Madrid, CSIC, C/ Isaac Newton 8. Tres Cantos, 28760 Madrid, Spain, 2.Instituto de Cerámica y Vidrio, CSIC, C/ Kelsen, 5 Madrid 28049, Spain, 3.LMA-Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Mariano Esquillor s/n, Zaragoza E-50018, Spain, 4.Dept. de Física de la Materia Condensada, Universidad de Zaragoza, Pedro Cerbuna 12, Zaragoza E-50009, Spain, 5.Fraunhofer-IPM, Thermoelectric Systems department, Heidenhofstraße 8, 79110 Freiburg,Germany

16:30 **Modeling and experimental characterization of thermoelectric devices in steady state and fast pulsed condition** — H 4.22
Alberto Ferrario, Stefano Boldrini, Alvise Miozzo,Monica Fabrizio
Institute of Condensed Matter Chemistry and Technologies for Energy - National Research Council of Italy, Corso Stati Uniti, 4 - 35127 Padova- Italy

Chalcogenides by electrodeposition : Marisol Martin Gonzalez

08:30 **Materials research, theoretical guidance and requirements for device development: New and traditional approaches with consistent requirements** — H 5.1
George S. Nolas
Department of Physics, University of South Florida

09:00 **Synthesis of one-dimensional thermoelectric Te-based nanostructures** — H 5.2
Stein N., Danine A., Thiebaud L., Legeai S., Boulanger C.
Institut Jean Lamour, UMR 7198 University of Lorraine-CNRS, France

09:15 **Figure of merit of Bi2Te3 thermoelectric nanowires** — H 5.3
Olga Caballero-Calero, Dieter Platzek, Begoña Abad, Miguel Muñoz-Rojo, Cristina Vicente Manzano, Pol Torres2, Xavier Álvarez, Marisol Martín-González
Instituto de Microelectrónica de Madrid (IMM-CSIC), Calle de Isaac Newton 8, Tres Cantos, 28760 Madrid, Spain Universidad Autónoma de Barcelona (UAB), Bellaterra, 08193 Barcelona, Spain Panco GmbH, Kärlicher Strasse 7, D56218 Mülheim, Germany

09:30 **Tuning the morphology and crystalline structure of Bi-Te Based Nanomaterials by Electrodeposition** — H 5.4
M.P. Proenca,1,2 M. Rosmaninho,1 P.M. Resende,1 C.T. Sousa,1 J. Ventura,1 J.P. Araújo,1 L. Fernandes,3 P. B. Tavares,3 and A. M. Pereira1,a)
1IFIMUP and IN-Institute of Nanoscience and Nanotechnology and Dep. Física e Astronomia, Universidade do Porto, Rua do Campo Alegre 687, 4169-007 Porto, Portugal 2Instituto de Sistemas Optoelectrónicos y Microtecnología (ISOM), Universidad Politécnica de Madrid, Avda. Complutense s/n, E-28040 Madrid, Spain 3Departamento de Química and CQ-VR, Universidade de Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal

09:45 **Characterization of thermoelectric bismuth telluride tridimensional nanostructures** — H 5.5
Alejandra Ruiz-Clavijo, Begoña Abad, Olga Caballero-Calero, Marisol Martín-González
Instituto de Microelectrónica de Madrid (IMM-CSIC), Calle de Isaac Newton 8, Tres Cantos, 28760 Madrid, Spain

10:00 **Coffee break**

Novel Approaches : Bertrand Lenoir

10:30 **Colusites Cu26A2E6S32 (A = Nb, Ta, E = Sn, Ge): promising environmentally-friendly thermoelectric materials** — H 6.1
Michihiro Ohta a), Yuta Kikuchi a), Yohan Bouyrie a), Koichiro Suekuni b), Priyanka Jood a), Atsushi Yamamoto a), Toshiro Takabatake c)
a) National Institute of Advanced Industrial Science and Technology (AIST), b) Kyushu University, c) Hiroshima University

10:45 **High thermoelectric performance of p-type solution processed SnTe nanocomposite through band engineering** — H 6.2
Maria Ibáñez(1,2), Roger Hasler (1), Beatriz Kuster (1), Andreu Cabot (3,4), and Maksym V. Kovalenko(1,2)
1- Institute of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, CH-8093, Switzerland 2- Empa - Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, CH-8600, Switzerland 3- Catalonia Institute for Energy Research – IREC, 08930 Sant Adrià de Besòs, Barcelona, Spain 4- Institució Catalana de Recerca i Estudis Avançats – ICREA, 08010 Barcelona, Spain

11:00 **Synergetic Combination Ion Beam Sputtering with Post-annealing Process: Towards High Efficiency Thermoelectric Materials** — H 6.3
A. L. Pires, I. F. Cruz, P. Resende, A. M. Pereira
IFIMUP and IN - Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia da Faculdade de Ciências da Universidade do Porto, Rua Campo Alegre, 687, 4769-007 Porto, Portugal pires.analuci@gmail.com

11:15 **Forest of Silicon Nanowires of Modulated Diameter for Thermoelectrics** — H 6.4
Dhruv Singhal* 1,2,3, Pascal Gentile 2, Dimitri Tainoff 1-3 , Olivier Bourgeois1-3 and Denis Buttard 2,4
1 Université Grenoble Alpes, Grenoble, France 2 INAC/PHELIQS/SiNaPS, CEA Grenoble, 17 Avenue des Martyrs, 38000 Grenoble, France 3 Institut Néel, CNRS, 25 Avenue des Martyrs, 38042 Grenoble, France 4 Université Grenoble Alpes/IUT-1, 17 quai C. Bernard, 38000 Grenoble, France * dhruv.singhal@cea.fr

11:30 **Engineering amorphous Silicon for thermoelectric performance improvement** — H 6.5
Debashree Banerjee, Subimal Majee, Zhi-Bin Zhang
Solid State Electronics, Department of Engineering Sciences, Ångströmlaboratoriet, Uppsala University, Uppsala, 75121, Sweden

11:45 **Effect of ultrashort laser surface nanostructuring on the evolution of thermoelectric properties of materials** — H 6.6
A.Talbi, T.T.D Huynh, A. Melhem, E. Millon, A. Stolz, C. Boulmer-Leborgne, GM. O'Connor, N. Semmar
GREMI-UMR 7344-CNRS-University of Orleans, 14 rue d'Issoudun, BP6744, 45071 Orleans Cedex2, France, NCLA/Inspire Laboratories, School of Physics, National University of Ireland Galway, University Road, Galway, Ireland

12:00 **Lunch**

Update on devices in Japan and Novel Materials : Jose Ramon Ares

13:30 **Resent progress of thermoelectric devices or modules in Japan** — H 7.1
Yoshikazu Shinohara, Yoshiki Takagiwa, Masahiro Goto
National Institute for Materials Science

14:00 **Quest for n-type Zintl Thermoelectrics** — H 7.2
Prashun Gorai, Brenden Ortiz, Eric S. Toberer, Vladan Stevanovic
Colorado School of Mines, Golden, CO 80401, USA National Renewable Energy Laboratory, Golden, CO 80401, USA

14:15 **Enhancing the Thermoelectric Performance of Bornite by Parent Element Doping.** — H 7.3
S. Long
Prof. A. Powell, Dr. P. Vaqueiro, Dr. S. Hull

14:30 **Mg ion implantation of ScN thin film for reduced thermal conductivity and improved Seebeck coefficent** — H 7.4
Nina Tureson1, Marc Marteau2, Thierry Cabioch2, Ngo Van Nong3, Jens Jensen1, Daniele Fournier4, Laurent Belliard4, Arnaud le Febvrier1, Per Eklund1
1Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden 2Institut Pprime, UPR 3346, Université de Poitiers, SP2MI-Boulevard 3, Téléport 2-BP 30179, 86962 Futuroscope Chasseneuil Cedex, France 3Department of Energy Conversion and Storage, Technical University of Denmark, Risø Campus, Fredriksborgsvej 399, Building 779, 4000 Roskilde, Denmark 4Institut des NanoSciences de Paris, Sorbonne Universités, UPMC Universités Paris 06, UMR 7588, Paris F-75005, France

14:45 **A New Nanostructuring Approach: Bismuth based nanocomposite thermoelectrics** — H 7.5
Klaartje De Buysser, Koen Van Daele, Pascal Van der Voort
SCRIPTS - Ghent University COMOC - Ghent University

15:00 **Insights into the thermoelectric properties of the Cu2Ge(S1-xSex)3 solid solutions** — H 7.6
Stéphane Jacob, Bruno Delatouche, Daniel Péré, Alain Jacob, Radoslaw Chmielowski, Gilles Dennler
IMRA EUROPE SAS 220, rue Albert Caquot 06904 Sophia Antipolis Cedex France

15:15 **Coffee break**

16:15 **Plenary Session**

Thursday 25 May 2017

New approaches and Half-Heusler : Michihiro Ohta

08:30 **Tailoring Electronic and Phononic Properties of Nanomaterials: Towards Improved Thermoelectricity** — **H 8.1**
Olga Caballero-Calero, Roberto D'Agosta
Spain

09:00 **Material design of thermoelectrically highly efficient Heusler compunds for the XXI century:Upscaling and economic point of view** — **H 8.2**
Benjamin Balke, Daniel Zuckermann
Institute for Materials Science, University of Stuttgart, Stuttgart, Germany, Isabellenhütte Heusler GmbH & Co. KG, Dillenburg, Germany

09:15 **Enhanced Thermoelectric Performance of Half-Heusler Compounds via Nanostructuring** — **H 8.3**
Wenjie Xie, Tianhua Zou, Xingxing Xiao, Marc Widenmeyer, Anke Weidenkaff
Institute for Materials Science, University of Stuttgart, Heisenbergstr. 3, DE-70569, Stuttgart, Germany

09:30 **Acoustic phonons lifetime and thermal conductivity in complex thermoelectric crystal structure** — **H 8.4**
S. Pailhès(1), V. Giordano(1), S. Turner(1), P-F Lory(4), M. De Boissieu(3)
1. Institute of Light and Matter, UMR5586, CNRS, University Lyon , Villeurbanne, France. 3. Univ. Grenoble Alpes, SIMAP, Grenoble, France. 4. Institut Laue-Langevin, Grenoble, France.

09:45 **Solution-Based Synthesis and Processing of Doped Cu-based Nanocrystals, Nanomaterials and Thermoelectric Generators** — **H 8.5**
Yu Liu1, Gregorio García 2,3, Silvia Ortega1, Doris Cadavid 1, Pablo Palacios 2,4, Perla Wahnón 2,3 and Andreu Cabot 1,5
1. Catalonia Institute for Energy Research - IREC, 08930 Sant Adrià de Besòs, Barcelona, Spain *email: dcadavid@irec.cat, acabot@irec.cat 2. Instituto de Energía Solar, ETSI Telecomunicación, Universidad Politécnica de Madrid, 28040, Madrid, Spain. *email: perla@etsit.upm.es 3. Departamento de Tecnología Fotónica y Bioingeniería, ETSI Telecomunicación, Ciudad Universitaria, s/n, 28040 Madrid, Spain. 4. Departamento de Física aplicada a las Ingenierías Aeronáutica y Naval. ETSI Aeronáutica y del Espacio, Pz. Cardenal Cisneros, 3, 28040 Madrid, Spain. 5. ICREA, Pg. Lluis Companys 23, 08010 Barcelona, Spain

10:00 **Coffee break**

Theory and measurements : Nicolas Stein

10:30 **Phenomenological Thermoelectric Property Diagram (PTPD) for accelerated discovery of new thermoelectric materials** — **H 9.1**
Gao Min
School of Engineering, Cardiff University The Parade, Cardiff, UK, CF24 3AA

10:45 **Means to an end: low dimensionality and disorder for low thermal conductivity.** — **H 9.2**
Robin Lefèvre, Franck Gascoin, David Berthebaud, Olivier Pérez, Denis Pelloquin, Oleg Lebedev, Sylvie Hébert.
Laboratoire CRISMAT UMR6508 6 Blvd du Maréchal Juin 14050 Caen Cedex 4, France

11:00 **Towards an enhancement on the efficiency of thin film thermoelectric generators (TFTG) by using poor thermal conductors substrat** — **H 9.3**
C. Morales*, J.M. Clamagirand, E. Flores, J.R. Ares, C. Sánchez and I.J. Ferrer
Grupo MIRE, Dpto. de Física de Materiales, Universidad Autónoma de Madrid, C/Tomás y Valiente 7, 28049, Madrid, España *Departamento de Física Aplicada, Universidad Autónoma de Madrid, C/Tomás y Valiente 7, 28049, Madrid, España

11:15 **Chemical and Transport Properties of p-Type Polycrystalline Si-Ge for the High Temperature Seebeck Coefficient NIST SRM®** — **H 9.4**
Joshua Martin, Winnie Wong-Ng, Dezhi Wang, Zhifeng Ren
Joshua Martin, Material Measurement Laboratory, National Institute of Standards and Technology, 100 Bureau Drive MS8520, Gaithersburg, MD 20899, Winnie Wong-Ng, Material Measurement Laboratory, National Institute of Standards and Technology, 100 Bureau Drive MS8520, Gaithersburg, MD 20899, Dezhi Wang, Department of Physics and TcSUH, University of Houston, Science and Research Building 1, 3507 Cullen Blvd., Houston, Texas 77204, Zhifeng Ren, Department of Physics and TcSUH, University of Houston, Science and Research Building 1, 3507 Cullen Blvd., Houston, Texas 77204

11:30 **3w SThM: Thermal Conductivity of TiO2 Nanotubes Filled with Polycarbonate** — **H 9.5**
Liliana Vera, Pedro Resende, Ruy Sanz, Marisol Martín-González
Instituto de Microelectrónica de Madrid (CSIC), Tres Cantos, Spain.

11:45 **Hybrid inorganic-organic materials for a new generation of thermoelectric devices** — **H 9.6**
Mario Culebras, José F. Serrano-Claumarchirant, Ana. M. Igual, Andrés Cantarero, Clara M. Gómez
Mario Culebras,Materials Science Institute, University of Valencia, Cat Jose Beltran, 2 46980 Paterna Valencia, Spain, José F. Serrano-Claumarchirant, Materials Science Institute, University of Valencia, Cat Jose Beltran, 2 46980 Paterna Valencia, Spain, Ana. M. Igual,Materials Science Institute, University of Valencia, Cat Jose Beltran, 2 46980 Paterna Valencia, Spain, Andrés Cantarero,Molecular Science Institute, University of Valencia, PO Box 22085, 46071 Valencia, Spain, Clara M. Gómez,Materials Science Institute, University of Valencia, Cat Jose Beltran, 2 46980 Paterna Valencia, Spain

12:00 **lunch**

21st century devices and applications : Jan König

13:45 **The challenge of Infusing New Thermoelectric Materials into Next Generation Space Power Systems** — **H 10.1**
Jean-Pierre Fleurial
Jet Propulsion Laboratory, California Institute of Technology

14:15 **Fabrication of thermoelectric far-infrared sensors based on SiGe membranes** — **H 10.2**
P. O. Vaccaro (1,2), J. Gutiérrez (1), M. I. Alonso (1), M. Garriga (1), and A. R. Goñi (1,2)
(1) Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Spain (2) ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Spain

14:30 **Large Area Termoelectric Generators Composed by Fabrics of Silicon-Germanium Nanotubes** — **H 10.3**
Alex Morata, Gerard Gadea, Mercé Pacios, Cristina Flox, Albert Tarancón
IREC, Catalonia Institute for Energy Research, Dept of Advanced Materials for Energy Applications, Jardins de les Dones de Negre 1, Planta 2, 08930, Sant Adriá del Besós, Barcelona, Spain.

14:45 **Thermoelectric bolometers based on heavily doped ultra-thin silicon membranes** — **H 10.4**
Aapo Varpula, Andrey V. Timofeev, Andrey Shchepetov, Kestutis Grigoras, Juha Hassel, Jouni Ahopelto, Markku Ylilammi, Mika Prunnila
VTT Technical Research Centre of Finland Ltd, Tietotie 3, 02150 Espoo, Finland

15:00 **LOW-DIMENSIONAL AND NANOSTRUCTURED THERMOELECTRICS FOR LARGE-AREA SENSING APPLICATIONS** — **H 10.5**
T. Juntunen, M. Ruoho, H. Jussila, Z. Sun, and I. Tittonen
Department of Electronics and Nanoengineering, Aalto University, P.O. Box 13500, FI-00076 Aalto, Finland

15:15 **Nanomaterial-solutions to shape-adaptable thermoelectric devices** — **H 10.6**
Silvia Ortega 1, Albert Massaguer 2, Toni Pujol 2, Andreu Cabot 1,3, Doris Cadavid 1
1 Catalonia Institute for Energy Research – IREC, 08930 Sant Adrià de Besòs, Barcelona, Spain 2 Departament d'Enginyeria Mecànica i de la Construcció Industrial, Universitat de Girona, 17003 Girona, Spain 3 Catalan Institution for Research and Advanced Studies – ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain

15:30 **Thermoelectric nanogenerator networks: a viable source of power for connected sensors?** — **H 10.7**
D. Tainoff, C. Tur, T. Crozes, S. Dufresnes, D. Bourgault, O. Bourgeois.
Institut NEEL CNRS/UGA UPR2940, 25 rue des Martyrs BP 166, 38042 Grenoble cedex 9

15:45 **Thermoelectric properties of the layered rhodates K(x)RhO(2) and Na(x)RhO(2)** — **H 10.8**
U. Schwingenschlögl, Y. Saeed, N. Singh
King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Thuwal 23955-6900, Saudi Arabia

16:00 **Coffee break**

Advances in Oxides : Anke Weidenkaff

16:15 **Impact of the microstructure on the thermoelectric performance of La(1-x)Sr(x)CoO3** — **H 11.1**
Z. Viskadourakis (a), G.I. Athanasopoulos (b), E. Kasotakis (c), J. Giapintzakis (b),
(a) Crete Center for Quantum Complexity and Nanotechnology, University of Crete, P.O. Box 2208, GR7-1003 Heraklion, Greece, (b) Department of Mechanical and Manufacturing Engineering, University of Cypruss, 75 Kallipoleos Avenue, P.O. Box 20537, 1678 Nicosia, Cyprus, (c) Department of Materials Science and Technology, University of Crete, P.O. Box 2208, GR7-1003 Heraklion, Greece

16:30 **La and Sm Co-Doped SrTiO3-δ Thermoelectric Ceramics** **H 11.2**
Adindu C. Iyasara, Whitney L. Schmidt, Rebecca Boston, Derek C Sinclair ,Ian M. Reaney
Functional Materials and Devices Group, Department of Materials Science and Engineering, University of Sheffield, Sheffield, S1 3JD, UK.

16:45 **An Alternative Composite Approach to Tailor the Thermoelectric Properties of SiAlON** **H 11.3**
Pinar Kaya, Giuliano Gregori, Petar Yordanov, Erhan Ayas, H. Ulrich Habermeier, Joachim Maier, Servet Turan
Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Department of Materials Science and Engineering, Anadolu University, Iki Eylul Campus, 26550 Eskisehir, Turkey, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Department of Materials Science and Engineering, Anadolu University, Iki Eylul Campus, 26550 Eskisehir, Turkey

17:00 **Thermoelectric Properties of the Layered Samarium Chromium Oxyselenide Enhanced by Codoping** **H 11.4**
Xian Zhang
Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology, Beijing 100094, China

17:15 **Self-doping in the triangular lattice of the CoO2 layer in misfit thermoelectric Bi2Sr2Co2Oy thin film** **H 11.5**
Arindom Chatterjee, Jose Manuel Caicedo Roque, Clivia M Sotomayor Torres, Jose Santiso, Lucia Iglesias, Francisco Rivadulla
Arindom Chatterjee, Jose Manuel Caicedo Roque, Jose Santiso, Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain Lucia Iglesias, Francisco Rivadulla, Materials Centro de Investigación en Química Biolóxica e Materiais Moleculares, Universidade de Santiago de Compostela, 15782-Santiago de .comoostela,, Spain Clivia M Sotomayor Torres, ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain, Catalan Institute of Nanoscience and Nanotechnology (ICN2) and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain

17:30 **Growth of nanopatterend transferable and flexible Ca3Co4O9 thin films for wearble thermoelectrics** **H 11.6**
Biplab Paul, Jun Lu, Per Eklund
Thin Film Physics Division, Department of Physics, Chemistry, and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden

17:45 **Oxide Thermoelectrics Nanostructured by Spinodal Decomposition** **H 11.7**
A. VERCHERE, S. MISHRA, S. LE FLOCH, G. FANTOZZI, S. DANIELE, S. PAILHES
Université de Lyon, IRCELyon, CNRS, UMR 5256, F-69626 Villeurbanne, France Université de Lyon, ILM, CNRS, UMR 5306, F-69622 Villeurbanne, France INSA-LYON, MATEIS, CNRS, UMR 5510, F-69621 Villeurbanne, France

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM I

Organic bioelectronics

Symposium Organizers :

Akio YASUDA, SONY Corporation, Stuttgart, Germany

George MALLIARAS, Ecole Nationale Supérieure des Mines, Gardanne, France

Sabine SZUNERITS, University Lille, Villeneuve d'Ascq, France

Wolfgang KNOLL, AIT Austrian Institute of Technology, Vienna, Austria
and CEST Competence Center for Electrochemical Surface Technology,
Wiener Neustadt, Austria

Be published in the journal BioInterphases (Royal Society of Chemistry).

Monday 22 May 2017

Monday afternoon : Wolfgang Knoll

14:00 **Panbio-electronics** **I I–1.1**
Daniel Simon
Linkoping University, Sweden

14:30 **Bioelectronics meets Microfluidics: integrated in line sensors at the interface with biology** **I I–2.1**
Vincenzo F. Curto, Magali Ferro, George Malliaras, Roisin M Owens
Ecole des Mines de Saint-Etienne Department of Bioelectronics (BEL) 880, route de Mimet 13541 Gardanne

14:45 **Melanins in bioelectronics: a survey of the role of these natural pigments from bio-interfaces to (opto)electronic devices** **I I–3.1**
Paola Manini, Valeria Criscuolo, Ludovico Migliaccio, Carmela Tania Prontera, Alessandro Pezzella, Orlando Crescenzi, Marco d'Ischia, Silvia Parisi, Mario Barra, Antonio Cassinese, Pasqualino Maddalena, Maria Grazia Maglione, Paolo Tassini, Carla Minarini
Department of Chemical Sciences, University of Naples «Federico II», Napoli, IT (Paola Manini, VC, LM, CTP, AP, OC, MdI), Department of Molecular Medicine and Medical Biotechnology, University of Naples "Federico II", Napoli, IT (SP), CNR-SPIN and Department of Physics, University of Naples Federico II, Napoli, IT (MB, AC, PM), Laboratory of Nanomaterials and Devices, ENEA C. R. Portici, Portici, IT (MGM, PT, CM)

15:00 **Tailor-Made Organic Semiconductors for Bioelectronic Applications** **I I–4.1**
Christian Nielsen
Materials Research Institute and School of Biological and Chemical Sciences, Queen Mary University of London, Mile End Road, London E1 4NS, United Kingdom

15:15 **Orientation selectivity with organic photodetectors and an organic electrochemical transistor** **I I–5.1**
Paschalis Gkoupidenis, Shahab Rezaei-Mazinani, Christopher M. Proctor, Esma Ismailova, and George G. Malliaras
Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE

15:30 **Coffe Break**

16:00 **Materials for Printed Biodegradable Light-Emitting Devices** **I I–6.1**
Anthony Morfa, Johannes Zimmermann, Nils Jürgensen, Serpil Tekoglu, Gerardo Hernandez-Sosa*
Light Technology Institute, Karlsruhe Institute of Technology, Engesserstraße 13, 76131 Karlsruhe, Germany InnovationLab, Speyererstraße 4, 69115 Heidelberg, Germany

16:30 **Physical modelling of bio sensors based on Organic Electrochemical Transistors** **I I–8.1**
Shirinskaya Anna, Horowitz Gilles, Bonnassieux Yvan
LPICM, CNRS, Ecole Polytechnique, Université Paris Saclay, 91128, Palaiseau, France

16:45 **Radiation-sensitive OFET based on the generation of mobile protons and anions in polymeric gate dielectrics** **I I–9.1**
KATSOGRIDAKIS C.I. 1, KAPETANAKIS E. 2, DOUVAS A.M. 1, PSYCHARIS V. 1, DIMOTIKALI D 3, ARGITIS P. 1, NORMAND P. 1,
1. Demokritos National Centre for Scientific Research, Institute of Nanoscience and Nanotechnology, Athens, Greece, 2. School of Applied Sciences, Technological Educational Institute of Crete, 73133 Chania, Greece, 3. National Technical University of Athens, Department of Chemical Engineering, Athens, Greece,

17:00 **Direct electron transfer to cyt c encapsulated within organically-modified silica: Platform to highly efficient biosensors** **I I–10.1**
Sara López-Bernabeu, Francisco Huerta, Emilia Morallón, Johan Bobacka, Francisco Montilla
Sara López-Bernabeu, Emilia Morallón, Francisco Montilla Instituto Universitario de Materiales de Alicante Universidad de Alicante Francisco Huerta Dpto. de Ingeniería Textil y Papelera Universidad Politécnica de Valencia Johan Bobacka Åbo Akademi University Department of Chemical Engineering Turku, Finland

17:15 **All-inkjet-printed flexible Organic Electrochemical Transistors for the detection of biological molecules in liquid media.** **I I–11.1**
G. Mattana1, S. Delile1, L. Fillaud1, B. Piro1, V. Noël1
[1] Université Paris Diderot, Sorbonne Paris Cité, ITODYS, UMR 7086 CNRS, 15 rue J-A de Baïf, 75205 Paris Cedex 13, France

17:30 **Conjugated polymers mediate effective activation of the Mammalian Ion Channel Transient Receptor Potential Vanilloid 1** **I I–12.1**
Francesco Lodola, Guglielmo Lanzani, Maria Rosa Antognazza
Francesco Lodola, Center for Nano Science and Technology, IIT@PoliMi, via Pascoli 70/3, 20133, Milano, Italy, Guglielmo Lanzani, Center for Nano Science and Technology, IIT@PoliMi, via Pascoli 70/3, 20133, Milano, Italy. Politecnico di Milano, Dipartimento di Fisica, Piazza L. Da Vinci 32, 20133, Milano, Italy, Maria Rosa Antognazza, Center for Nano Science and Technology, IIT@PoliMi, via Pascoli 70/3, 20133, Milano, Italy.

17:45 **Inexpensive polymer-based Surface Acoustic Wave device with high operating frequency for disposable applications** **I I–13.1**
Soumya Dutta, Arvind Kumar
Department of Electrical Engineering, IIT Madras, Chennai, India

Tuesday 23 May 2017

Tuesday morning : George Malliaras

09:00 **Electrical and metabolic cell activity recording by means of an organic device** **I I-14.2**
Annalisa Bonfiglio
Dept of Electrical and Electronic Engineering, University of Cagliari

09:30 **Extracellular signal recordings using conducting polymer based electrodes: Driving down the detection limits to nanovolt range** **I I-15.2**
Pedro M. C. Inácio 1,2, Ana L.G. Mestre 1,2, Sanaz Asgarifar1,2, Inês M. Araújo 3,4, Fabio Biscarini 5, Maria C. R. Medeiros 6,7 and Henrique L. Gomes1,2
1 Instituto de Telecomunicações, Av. Rovsico Pais 1, Lisboa, Portugal 2 Universidade do Algarve, Departamento de Engª Electrónica e Informática 3 Universidade do Algarve, Department of Biomedical Sciences and Medicine, 8005-139 Faro Portugal 4 Centre for Biomedical Research, CBMR, Universidade do Algarve, 8005-139 Faro. 5 Life Science Department, University of Modena and Reggio Emilia,Via Campi 103, I-41125 Modena, Italy. 6 Instituto de Telecomunicações, Universidade de Coimbra, Portugal. 7 Universidade de Coimbra, Departamento de Engenharia Eletrotécnica Computadores, 4, 3030-290 Coimbra, Portugal.

09:45 **Crystallized Conducting Polymer-Based Electrochemical Transistors with Excellent Water Stability and Electrical Performance** **I I-16.2**
Myung-Han Yoon, Seongmin Kim
School of Materials Science and Engineering Gwangju Institute of Science and Technology

10:00 **Organic electrochemical transistor as a tool for monitoring toxic agents effects on in vitro cell tissue** **I I-17.2**
Marta Tessarolo 1-2, Francesco Decataldo 2, Vito Vurro 2, Marianna Barbalinardo 3, Denis Gentili 3, Francesco Valle 3, Massimiliano Cavallini 3, Beatrice Fraboni 2
1 Interdepartmental Centre for Industrial Research – Advanced Mechanics and Materials (CIRI – MAM), University of Bologna, Bologna, Italy, 2 Department of Physics and Astronomy, University of Bologna, Bologna, Italy, 3 National Research Council (CNR), Institute for the Study of Nanostructured Materials (ISMN) Bologna, Italy,

10:15 **Organic Cell Stimulating and Sensing transistor architecture for the study of neural cells** **I I-18.2**
Michele Muccini1, Stefano Toffanin1 and Valentina Benfenati2
1CNR-ISMN, Istituto per lo Studio dei Materiali Nanostrutturati, Consiglio Nazionale delle Ricerche 2CNR-ISOF, Istituto per la Sintesi Organica e la Fotoreattività, Consiglio Nazionale delle Ricerche Via P. Gobetti 101, 40129 Bologna, Italy

10:30 **Coffe Break**

11:00 **Nanopatterned conducting polymers for low impedance contacts and cell guidance** **I I-19.2**
Mohammed ElMahmoudy, Adel Hama, Vincenzo Curto, George G. Malliaras, and Sébastien Sanaur
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint-Etienne, 13541 Gardanne, France, Department of Flexible Electronics, Ecole Nationale Supérieure des Mines de Saint-Etienne, 13541 Gardanne, France

11:15 **EGOFET-based aptasensors for ultra-sensitive detection of biorecognition events** **I I-20.2**
Carlo A. Bortolotti, Marcello Berto, Chiara Diacci, Michele Di Lauro, Simone L. Marasso, Matteo Cocuzza, Denis Perrone, Andrea Cossarizza, Elena Bianchini, Marcello Pinti, Candido F. Pirri, Magnus Berggren, Daniel Simon, Fabio Biscarini
Dipartimento di Scienze della Vita, Università di Modena e Reggio Emilia, Modena, Italy (Bortolotti, Berto, Diacci, Di Lauro, Pinti, Biscarini), Dipartimento di Scienza Applicata e Tecnologia , Politecnico di Torino,Torino, Italy (Marasso, Cocuzza), Istituto Italiano di Tecnologia, Center for Sustainable Futures, Torino, Italy (Perrone, Pirri), Dipartimento di Scienze Mediche e Chirurgiche Materno-Infantili e dell'Adulto, Università di Modena e Reggio Emilia, Modena, Italy (Cossarizza, Bianchini), Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, Norrköping, Sweden (Berggren, Simon)

11:30 **Modelling of conducting polymer/electrolyte interface for extracellular signal recordings** **I I-21.2**
João Reis, Pedro M. C. Inácio, Ana L.G. Mestre, Maria C. R. de Medeiros and, Henrique L. Gomes
Instituto de Telecomunicações - Pólo de Coimbra, Instituto de Telecomunicações - Pólo de Lisboa, Instituto de Telecomunicações - Pólo de Lisboa, Instituto de Telecomunicações - Pólo de Coimbra, Department of Electrical and Computer Engineering, University of Coimbra, Instituto de Telecomunicações - Pólo de Lisboa, University of Algarve

11:45 **The utilization of divinylsulfone as an effective cross-linker for PEDOT:PSS using low temperatures** **I I-22.2**
Daniele Mantione a,Isabel del Agua a,b, Ilke Uguz b, Mohammed ElMahmoudy b, Ana Sanchez-Sanchez a, Haritz Sardona a,George G. Malliaras b,David Mecerreyes a, c
a POLYMAT University of the Basque Country UPV/EHU, Joxe Mari Korta Center, Avda. Tolosa 72, 20018 Donostia-san Sebastian, Spain b Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE, MOC, 13541 Gardanne, France c Ikerbasque, Basque Foundation for Science, E-48011 Bilbao, Spain

12:00 **Lunch**

Poster Session

13:00 **Direct and selective detection of bacteria using surface-enhanced Raman Scattering (SERS) imaging** **I P-12.3**
Cristina-Cassiana Andrei1, Anne Chantal Gouget-Laemmel1, Anne Moraillon1, Rabah Boukherroub2, François Ozanam1 and Sabine Szunerits2
1 Physique de la Matière Condensée, Ecole Polytechnique-CNRS , Université Paris Saclay, 91128 Palaiseau, France 2 Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, UMR 8520 - IEMN, F-59000 Lille, France

13:00 **Flexible polyimide electrodes for ECoG in chicken embryos** **I P-13.3**
Siriana Paonessa, Francesco Pieri, Stefano Di Pascoli
All authors at: University of Pisa, Dipartimento Ingegneria della Informazione.

13:00 **The impact of pH variations on the transport efficiency of Organic Electronic Ion Pumps** **I P-1.3**
M. Seitanidou, JF. Franco-Gonzalez, D. Simon, M. Berggren
Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, 60174 Norrköping, Sweden

13:00 **Designing microfluidic platform detection chamber for cancer cells label free detection Lab-on-a-chip** **I P-2.3**
Catalin Marculescu 1, Vasilica Tucureanu 1,2, Andrei Marius Avram 1, Tiberiu Burinaru 1,3, Bianca Tincu 1, Marioara Avram 1
1 National Institute for Research and Development in Microtechnologies, Romania 2 Department of Materials Science, Transilvania University of Brasov, Romania 3 Faculty of Veterinary Medicine, USAMVB, Romania

13:00 **DNA sensor on sapphire substrate polypyrrole chip** **I P-3.3**
V. Blashuk, O. Ivanyuta, S. Kratko
Taras Shevchenko National University of Kyiv 64/13, Volodymyrska Str., Kyiv, 01601, Ukraine

13:00 **Injectable, self-opening, and freestanding retinal prosthesis for fighting blindness made of conjugated polymers** **I P-4.3**
Marta Airaghi Leccardi (1), Laura Ferlauto (1), Kevin Sivula (2), Diego Ghezzi (1)
(1) Medtronic Chair in Neuroengineering, Center for Neuroprosthetics, Interfaculty Institute of Bioengineering, School of Engineering, École Polytechnique Fédérale de Lausanne, Switzerland (2) Laboratory for Molecular Engineering of Optoelectronic Nanomaterials, Institute of Chemical Sciences and Engineering, School of Basic Science, École Polytechnique Fédérale de Lausanne, Switzerland

13:00 **A Medical Emergency Alert and Warning Wrist Band based on Photoplethysmography with Color Adaption Feature** **I P-5.3**
Hikmet Hakan Gurel, Sairam Vakkalanka, Ranjith Engu
Kocaeli University, Technology Faculty, Department of Information Systems Engineering, Kocaeli, Turkey,Department of Computer Science and Engineering Baba Institute of Technology and Sciences Andhra Pradesh, Vizag, India, Human Resources Hays Stockholm, Sweden

13:00 **3D multi-layer probe for application in neuroprosthetics** **I P-6.3**
Marta Airaghi Leccardi, Vivien Gaillet, Bastien Duckert, Diego Ghezzi
Medtronic Chair in Neuroengineering, Center for Neuroprosthetics, Interfaculty Institute of Bioengineering, School of Engineering, École Polytechnique Fédérale de Lausanne, Switzerland

13:00 **A 3D model for bone tissue engineering** **I P-7.3**
Donata Iandolo,[a] Magali Ferro,[a] Charalampos Pitsalidis,[a] Sahika Inal,[b] Adel Hama,[a] Roisin Owens [a]
[a] Department of Bioelectronics, Centre Microélectronique de Provence, Gardanne, France. [b] Biological and Environmental Science and Engineering Division, KAUST, Saudi Arabia.

13:00 **Towards reliable electronic biosensors: Using a graphene-based liquid-gated field-effect transistor platform for label-free DNA** **I P-8.3**
Johannes Bintinger(1,2,5), Teresa Berninger(1), Andrea Rozzi(1,3), Paolo Rudatis(4), Natallia Yelavik(5), Roberto Corradini(3), Dominik Eder(4), Hannes Mikula(5), Wolfgang Knoll(1,2)
1, Austrian Institute of Technology, Biosensor Technologies, Muthgasse 11, 1190 Vienna, Austria 2, Center for Electrochemical Surface Technologies, Viktor Kalpan Strasse 22, 2700 Wr. Neustadt, Austria 3, University of Parma, Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale- Università di Parma, Parco Area delle Scienze 17/A, I43100 Parma, Italy 4, Vienna University of Technology, Institute of Materials Chemistry, Getreidemarkt 9, 1060 Vienna, Austria 5, Vienna University of Technology, Institute of Applied Synthetic Chemistry, Getreidemarkt 9, 1060 Vienna, Austria

13:00 **High performance electrolyte-gated field-effect transistors processed by a solution shearing technique** **I P-9.3**
Francesca Leonardi, Qiaoming Zhang, Stefano Casalini, Inés Temiño, Sergi Galindo, Marta Mas-Torrent
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) and CIBER-BBN, Campus de la UAB, 08193, Bellaterra, Spain

13:00 **Highly Sensitive Nano-Biosensor with DNA-Templated Conductive Nanowires** **I P-10.3**
Hyung Jin Kim1*, Jong Seob Choi1, and Byungyou Hong2
1 Convergence Medical Device Research Center, Gumi Electronics and Information Technology Research Institute, Gumi 730-701, Republic of Korea 2 College of Information and Communication Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea

13:00 **Body energy harvesting and conversion for backup electronic power supplies** **I P-11.3**
George Claudiu Zarnescu, Stamatin Ioan
University of Bucharest, Faculty of Physics, 3NanoSAE Reseach Center

13:00 **Smart sensor tags: a flexible RFID device integrated with a freshness evaluation sensor for food safety** **I P-14.3**
S.-M. Iordache(1*), S. Caramizoiu(2), A.-M. Iordache(1*), V. Garleanu(1), I. Stamatin(1)
(1) 3Nano-SAE Research Center, Faculty of Physics, University of Bucharest, 405 Atomistilor Str., Magurele, 077125, Romania (2) OPTOELECTRONICA 2001 S.A., 409 Atomiştilor Str., Măgurele, 077125, Romania. * corresponding authors

13:00 **A non-enzymatic electrochemical sensor based on porphyrins for histamine evaluation** **I P-15.3**
S.-M. Iordache(1*), A. M. Iordache(1*), V.Garleanu(1), S.Caramizoiu(2), E. Fagadar-Cosma(3), I.Stamatin(1)
(1) 3Nano-SAE Research Center, Faculty of Physics, University of Bucharest, 405 Atomistilor Str., Magurele, 077125, Romania (2) OPTOELECTRONICA 2001 S.A., 409 Atomiştilor Str., Măgurele, 077125, Romania. (3) Institute of Chemistry Timisoara of Romanian Academy, M. Viteazul Ave. 24, 300223-Timisoara, Romania * corresponding authors

Tuesday afternoon : Sabine Szunerits

14:30 **Organic Bioelectronics for Medicine** **I I-23.4**
Luke Lee Pyung-Se
National University of Singapour, Singapour

15:00 **An optical bio-sniffer for exhaled acetone as a potential biomarker of lipid metabolism** **I I-24.4**
Po-Jen Chien, Ming Ye, Masato Tsujii, Takuma Suzuki, Koji Toma, Takahiro Arakawa, Kohji Mitsubayashi
Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University

15:15 **Carbon-based Flexible Sensing Electronics for Health Monitoring** **I I-25.4**
Xuewen Wang, Ting Zhang, Zheng Liu
School of Materials Science and Engineering, Nanyang Technological University, Singapore.

15:30 **Engineering rapid and sensitive semiconductor-based diagnostic technologies for malaria** **I I-26.4**
K. S. Malpartida, L. S. Yu, M. Delves, J. Rodriguez-Manzano, P. Georgiou, J. Baum
Department of Chemistry Imperial College London, Department of Electrical and Electronic Engineering Imperial College London,Department of Life Sciences Imperial College London, Department of Electrical and Electronic Engineering Imperial College London, Department of Electrical and Electronic Engineering Imperial College London, Department of Life Sciences Imperial College London

15:45 **Graphene FETs and Plasmonic Optics for sensing** **I I-27.4**
Patrik Aspermair (1,2), Johannes Bintinger (2), Rabah Boukherroub (1), Wolfgang Knoll (2), Sabine Szunerits (1)
(1) Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, UMR 8520 - IEMN, F-59000 Lille, France, (2) Austrian Institute of Technology, Biosensor Technologies, Muthgasse 11, 1190 Vienna, Austria

16:00 **Detection of bacteria by analysis in spectroscopy of absorbance or fluorescence of volatile metabolites trapped by functionalize** **I I-28.4**
Emilie PERRET, Marjorie VRINAUD, Pierre R. MARCOUX, Jean HUE, Isabelle TEXIER-NOGUES
CEA-Leti, DTBS, GRENOBLE, France

16:15 **Coffee Break**

16:45 **Ultra-sensitive bio-markers detection with an electrolyte gated organic transistor** **I I-29.4**
Eleonora Macchia,1 Amber Tiwari,1 Kyriaki Manoli,1 Brigitte Holzer,1 Cinzia Di Franco,2 Matteo Ghittorelli,3 Fabrizio Torricelli,3 Giuseppe Felice Mangiatordi,4 Gaetano Scamarcio,2,5 Gerardo Palazzo1,6and Luisa Torsi1*
1 Dipartimento di Chimica - Università degli Studi di Bari “Aldo Moro” - Bari (I) 2 CNR - Istituto di Fotonica e Nanotecnologie, Sede di Bari (I) 3 Dipartimento Ingegneria dell’Informazione - Università degli Studi di Brescia - Brescia (I) 4 Dipartimento di Farmacia - Scienze del Farmaco - Università degli Studi di Bari “Aldo Moro” - Bari (I) 5Dipartimento di Fisica “M. Merlin” - Università degli Studi di Bari – “Aldo Moro” - Bari (I) 6CSGI (Center for Colloid and Surface Science) – Bari (I)

17:00 **Correlation between thin-film 3D growth modality and mobility in high performance n-type molecular water-gated OFETs** **I I-30.4**
Federico Prescimone, Emilia Benvenuti, Marco Natali, Andrea Lorenzoni, Zhihua Chen, Franco Dinelli, Fabiola Liscio, Silvia Milita, Francesco Mercuri, Michele Muccini, Antonio Facchetti, Stefano Toffanin
Federico Prescimone Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Emilia Benvenuti Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Marco Natali Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Andrea Lorenzoni Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Zhihua Chen Northwestern University Evanston, IL 60208-3113 (USA), Franco Dinelli Istituto Nazionale di Ottica (INO) - Consiglio Nazionale delle Ricerche (CNR), Pisa, Italy, Fabiola Liscio Istituto per la Miscroscopia e i Microsistemi (IMM) -Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Silvia Milita Istituto per la Miscroscopia e i Microsistemi (IMM) -Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Francesco Mercuri Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Michele Muccini Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Antonio Facchetti Northwestern University Evanston, IL 60208-3113 (USA), Stefano Toffanin Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy.

17:15 **Novel light-responsive biocompatible hydrogels produced by initiated Chemical Vapor Deposition** **I I-31.4**
Anna Maria Coclite
Institute of Solid State Physics, Graz University of Technology, Graz, Austria

17:30 **The influence of side chain engineering on the performance of n-type polymers in organic electrochemical transistors (OECTs)** **I I-32.4**
Alexander Giovannitti(1), Anna-Maria Pappa(2), Sahika Inal (2,5), Roisin Owens(2), George G. Malliaras(2), Jonathan Rivnay(3,4), Iain McCulloch(1,5)
(1) Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, United Kingdom. (2) Department of Bioelectronics, École Nationale Supérieure des Mines, CMP-EMSE, MOC Gardanne, 13541, France. (3) Palo Alto Research Center, Palo Alto, CA 94304, USA. (4) Northwestern University, 2145 Sheridan Road, Evanston, IL 60208-3109. (5) King Abdullah University of Science and Technology, SPERC, Thuwal 23955-6900, Saudi Arabia.

19:30 **Dinner with invited speakers**

Wednesday morning : Akio Yasuda

09:00 **Skin-Inspired Pressure Sensors and Applications** I I-33.5
Zhenan Bao
Department of Chemical Engineering, and by courtesy Chemistry, Material Science and Engineering Stanford University

09:30 **All PEDOT:PSS Organic Electrochemical Transistor for the selective detection of dopamine** I I-34.5
Marta Tessarolo, Isacco Gualandi, Erika Scavetta, Marco Marzocchi, Beatrice Fraboni
Department of Physics and Astronomy, University of Bologna, Bologna, Italy Interdepartmental Centre for Industrial Research – Advanced Mechanics and Materials (CIRI – MAM), University of Bologna, Bologna, Italy Department of Industrial Chemistry «Toso Montanari», University of Bologna, Bologna, Italy

09:45 **Flexible Sensors with Stretchable PEDOT:PSS Electrodes** I I-35.5
Hidenori Okuzaki, Takahiro Kondo, Masaki Sato
Graduate Faculty of Interdisciplinary Research, University of Yamanashi

10:00 **Ultra-Flexible yet Robust Nonlinear Framework for Zero-Gap Design on Biointerface** I I-36.5
Junsoo Kim, Sol Yee Im, Jung Yoon Kwon, Jaewoo Lee, Jong Pil Im, Seung-Min Lee, Seung Eon Moon*
ICT Materials Research Group, Electronics and Telecommunications Research Institute, Daejeon 34129, Republic of Korea

10:15 **Printable Carbon Nanotubes & Graphene Conducting Elastomers for Wearable Biomechanical Sensor** I I-37.5
Hin Chun Yau, Hannah Leese, Milo Shaffer,
Department of Chemistry and Materials, Imperial College London, South Kensington Campus, London, SW7 2AZ, UK

10:30 **Coffee Break**

11:00 **On the transient response of organic electrochemical transistors** I I-38.5
Gregorio Couto Faria, Duc Trong Duong, Alberto Salleo
Gregorio Couto Faria São Carlos Physics Institute, University of São Paulo, PO. Box: 369, 13560-970, São Carlos, SP, Brazil Duc Trong Duong, Alberto Salleo Department of Materials Science and Engineering, Stanford University, Stanford, California 94305, USA

11:15 **New process for a fully stretchable Organic Electrochemical Transistor** I I-39.5
Bastien MARCHIORI, Roger DELATTRE, Marc RAMUZ
Department of Flexible Electronics, Ecole Nationale Supérieure des Mines, Centre Microélectronique de Provence CMP-EMSE, F-13541 Gardanne, France

11:30 **A 24 um-pitch Microelectrode Array with 6912-channel Readout at 12 kHz by Highly Scalable Implementation.** I I-41.5
Jun Ogi1, Yuri Kato1, Yoshihisa Matoba1, Chigusa Yamane1, Kazunori Nagahata1, Yusaku Nakashima2, Takuya Kishimoto2, Shigeki Hashimoto2, Koichi Maari3, Yusuke Oike1, and Takayuki Ezaki1
1 Research Division, Sony Semiconductor Solutions Corporation, Kanagawa, Japan, 2 Bio-Medical Research and Development Division, R&D Platform, Sony Corporation, Tokyo, Japan, 3 Sony Semiconductor Solutions Corporation, Kanagawa, Japan

11:45 **Surface enhanced Raman scattering for direct ex-vivo diagnostic in comparative medicine** I I-40.5
C. Rizea1, I.A. Birtoiu2, L.O. Scoicaru3, M.I. Rusu3, C. R. Iordanescu3, B. A. Vitalaru2, M. V. Udrea4, B. Chiricuta4, L. Braic3, A. Parau3, M. Tautan3, A. Tonetto5, R. Notonier5
1.ROXY VETERINARY S.R.L. Magurele, Romania, 2. .Faculty of Veterinary Medicine-University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania,
3. National Institute of Research and Development for Optoelectronics INOE 2000, Magurele, Romania, 4. APEL LASER S.R.L., Bucharest, Romania, 5. Aix-Marseille Universite´, Centrale Marseille, CNRS, Federation Sciences Chimiques Marseille (FR 1739) - PRATIM, Marseille, France

12:00 **Fluidic Reservoir Ion Pump Probes for Controlling Epileptiform Activity** I I-42.5
Christopher M. Proctor, Adam Williamson, Anna Maria Pappa, Vincenzo Curto, Ilke Uguz, Christophe Bernard, George Malliaras
Proctor, Pappa, Uguz, Malliaras Department of Bioelectronics Ecole Nationale Supérieure des Mines CMP-EMSE, MOC 13541 Gardanne , France E-mail: Malliaras@emse.fr Williamson, Bernard Aix Marseille Université INS, 13005 Marseille, France, Inserm UMR_S 1106 , 13005 Marseille , France

12:15 **Fabrication of efficient electronic junction between photosynthetic reaction center protein and metals, polymer and solid semiconductors** I I-43.1
Hani Barhum, Chanoch Carmeli, Itai Carmeli
Tel Aviv University and Bar Ilan University Israel

12:30 **Lunch**

16:15 **Plenary Session**

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM J

Electronic textiles

Symposium Organizers :

Esma ISMAILOVA, Ecole Nationale Supérieure des Mines, Gardanne, France

Tobias CRAMER, University of Bologna, Italy

John DE MELLO, Imperial College London, U.K.

Daniel T. SIMON, Laboratory of Organic Electronics, Norrköping, Sweden

Smart Fabrics and Interactive Textiles : Luigi Occhipinti

14:00 **How to Make Reliable, Washable and Wearable Monitoring Underwear** **J 1.1**
Xuyuan TAO 1, Vladan KONCAR 1, Tzu-Hao HUANG 2, Chien-Lung SHEN 2,3, Ya-Chi KO 2, Gwo-Tsuen JOU 3
1 Ecole Nationale Supérieure des Arts et Industries Textiles, 2 allée Louise et Victor Champier, 59056 Roubaix Cedex 1, France 2 Department of Products, Taiwan Textile Research Institute, No.6, Chengtian Rd., Tucheng Dist. New Taipei City, 23674, Taiwan (R. O.C.) 3 Department of Bissness and Planning, Taiwan Textile Research Institute, No.6, Chengtian Rd., Tucheng Dist. New Taipei City, 23674, Taiwan (R. O.C.) 4 Department of Biomedical Engineering, National Yang-Ming University, No.155, Sec.2, Linong Street, Taipei,112 Taiwan (R.O.C.)

14:30 **Formation of Multi-purpose Stretchable and Transparent, Large-Area Heaters with Wireless Operations using Metal Nanofibers** **J 1.2**
Jiuk Jang, Byung Gwan Hyun, Sangyoon Ji, Eunjin cho, Jang-Ung Park
School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Republic of Korea

14:45 **Heatable Textiles With Silver Nanowires** **J 1.3**
Doga Doganay, Sahin Coskun, Sevim Polat, Husnu Emrah Unalan
Department of Metallurgical and Materials Engineering, Middle East Technical University, Ankara 06800, Turkey

15:00 **Machine Washable PEDOT:PSS Dyed Silk Yarns for Wearable Thermoelectrics** **J 1.4**
Jason D. Ryan, Desalegn A. Mengistie, Anja Lund, Roger Gabrielsson, Christian Müller
Jason D. Ryan, Desalegn A. Mengistie, Anja Lund, Christian Müller Department of Chemistry and Chemical Engineering, Chalmers University of Technology, 412 96 Göteborg, Sweden Roger Gabrielsson IFM, Linköping University, 58183 Linköping, Sweden

15:15 **Smart textiles as materials for continuous health monitoring** **J 1.5**
Luciano F. Boesel
Empa Swiss Federal Laboratories for Materials Science and Technology
Lerchenfeldstrasse 5 9014 St. Gallen Switzerland

15:30 **Metatextiles: design, characterization and applications** **J 1.6**
Ariana S. Levitt A, Chelsea Knittel A, Daniel Christie B, Dani Liub B, Yuqiao Liu C, Kapil Dandekar C, Caroline Schauer A, Antonios Kontsos B and Genevieve Dion D,*
A Department of Materials Science and Engineering, Drexel University, Philadelphia, United States B Department of Mechanical Engineering and Mechanics, Drexel University, Philadelphia, United States C Department of Electrical and Computer Engineering, Drexel University, Philadelphia, United States D Department of Design, Drexel University, Philadelphia, United States

16:00 **Coffee break**

Poster Session : Annalisa Bonfiglio

16:30 **Fabrication of all-organic humidity sensors using direct patterned conducting ink on textile substrates.** **J 2.1**
Usein ISMAILOV, Esma ISMAILOVA
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne.

16:30 **High-Spatial-Resolution Touch and Pressure Sensing Fibers and Textiles by Thermal Drawing Technique** **J 2.2**
Tung Nguyen-Dang, Alexis Page, Yunpeng Qu, Wei Yan, Marco Volpi, Nadege Guedon, Prof. Fabien Sorin
Laboratoire des Fibres et Materiaux Photoniques - Institut des Materiaux - Ecole Polytechnique Federale de Lausanne - Lausanne - Switzerland.

16:30 **Stretchable All Polymer-Based Organic Field-Effect Transistors Containing Semiconducting Polymer-Embedded Rubbery Layers** **J 2.3**
Mingyuan Pei, Joong Se Ko, and Hoichang Yang
Department of Applied Organic Materials Engineering, Inha University, Incheon 22212, Korea

16:30 **Design concept of smart optical textiles** **J 2.4**
Amine HAJ TAIEB, Slah MSAHLI
Institut Supérieur des Arts et Métiers de Sfax, Laboratoire Génie Textile, Institut Supérieur des Etudes Technologiques de Ksar Hellal

16:30 **A Flexible Smart Tattoo for Epidermal Sensing** **J 2.5**
Keana De Guzman, Aoife Morrin
Keana De Guzman, School of Chemical Sciences, Dublin City University, Ireland, Aoife Morrin,School of Chemical Sciences, Dublin City University Ireland, INSIGHT Centre for Data Analytics, National Centre for Sensor Research,

16:30 **Polarization switching and charging effects in electrospun PVDF fibres** **J 2.6**
Francesco Calavalle, Marco Zaccaria, Oliviero Bocchi, Tobias Cramer, Davide Fabiani, Beatrice Fraboni
Department of Physics and Astronomy, University of Bologna, Italy, Department of Electrical, Electronic and Information Engineering, University of Bologna, Italy, Centre for Advanced Applications in Mechanical Engineering and Materials Technology, University of Bologna, Italy,

Tuesday 23 May 2017

Technology Transfer : Christine Kallmayer

09:00 **Electronics and Fabrics, the Development of Garment Based Wearables** **J 3.1**
Rebeccah Pailes-Friedman
IDSA

09:30 **The 1D-NEON project: challenges and opportunities of e-fibres in smart textiles** **J 3.2**
Luigi G. Occhipinti, and Jong Min Kim
University of Cambridge, Department of Engineering Electrical Engineering Division, 9 JJ Thomson Avenue, Cambridge CB3 0FA United Kingdom

10:00 **Coffee break**

Textile Energy Harvesting and Storage : Janos Vörös

10:30 **High Performance Thin-film Li-ion Microbatteries** **J 4.1**
Thierry Djenizian
Flexible Electronics Department, Ecole Nationale Supérieure des Mines de Saint-Etienne

11:00 **A viscose fiber based organic solar cell** **J 4.2**
B. Friedel1, R. Schennach2
1 Energy Research Center, Vorarlberg University of Applied Sciences, Dornbirn, Austria, 2 Institute of Solid State Physics, Graz University of Technology, Austria

11:15 **Textile piezoelectrics for energy harvesting – a case study** **J 4.3**
Karin Rundqvist (1), Erik Nilsson (2), Christian Müller (3), Anja Lund (1,3)
(1) The Swedish School of Textiles, University of Borås, Borås, Sweden, (2) Textiles and plastics, Swerea IVF, Mölndal, Sweden, (3) Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Göteborg, Sweden,

11:30 **Piezoelectric melt spun mono or tri-component poly(vinylidene fluoride) fibres for energy scavenging** **J 4.4**
Anaëlle TALBOURDET, François RAULT, Cédric COCHRANE, Aurélie CAYLA, Guillaume LEMORT, Eric DEVAUX, Anne GONTHIER, Christine CAMPAGNE
A Talbourdet(1,2), F Rault(1,2), A Cayla(1,2), C Cochrane(1,2), E Devaux(1,2), A. Gonthier(3), G Lemort(1), C Campagne(1,2) (1)ENSAIT, GEMTEX, 2 Allée Louise et Victor Champier 59100 Roubaix, France (2)Université Lille Nord de France, Cité Scientifique 59655 Villeneuve-d'Ascq, France anaelle.talbourdet@ensait.fr (3)CETI, 41 rue des métissages 59200 Tourcoing, France

11:45 **Flexible Thermoelectric Zinc Oxide – Organic Superlattices on Cotton Textile Substrates** **J 4.5**
Antti J. Karttunen, Liisa Sarnes, Riikka Townsend, Jussi Mikkonen, Maarit Karppinen
Department of Chemistry and Materials Science, Aalto University, FI-00076 Aalto, Finland, Department of Design, Aalto University, FI-00076 Aalto, Finland

12:00 **MXene Fibers and Composites for Wearable Energy Storage** **J 4.6**
Yury Gogotsi1, Asia Sarycheva1, Tyler Mathis1, Babak Anasori1, Zehang Zhou2, Shu Yang2
1Department of Materials Science & Engineering and A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, Pennsylvania 19104, United States
2Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, Pennsylvania 19104, United States

12:30 **Lunch**

Materials For Functional Fibers 1 : Vladan Koncar

14:00 **Meter scale large area electric textile for wearable and automotive applications** **J 5.1**
Toshihiro ITOH
Graduate school of frontier sciences, The University of Tokyo

14:30 **Toward Light-Responsive Textiles for Transdermal Delivery Systems Utilizing Surface Initiated ARGET-ATRP** **J 5.2**
Anja C. Pauly, Katrin Schöller, Lukas Baumann, Lukas J. Scherer, René M. Rossi, Luciano F. Boesel
Empa - Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Protection and Physiology, Lerchenfeldstrasse 5, CH-9014 St. Gallen, Switzerland.

14:45 **A fiber based waterproof interconnector for E-textile devices** **J 5.3**
Byungwoo Choi, Jaehong Lee, Heetak Han, and Taeyoon Lee
Nanobiodevice Laboratory, School of Electrical and Electronic Engineering, Yonsei University

15:00 **Water stable flexible PEDOT:PSS:DVS-coated textiles for wearable electronics** **J 5.4**
Isabel del Agua, Daniele Mantione, Ana Sanchez-Sanchez, Usein Ismailov, Esma Ismailova, David Mecerreyes, George G. Malliaras
Isabel del Agua, Daniele Mantione, Ana Sanchez-Sanchez,David Mecerreyes, POLYMAT University of the Basque Country UPV/EHU, Joxe Mari Korta Center, Avda. Tolosa 72, 20018 Donostia-San Sebastian, Spain Isabel del Agua, Usein Ismailov, Esma Ismailova, George G. Malliaras, Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE, MOC, 13541 Gardanne, France David Mecerreyes, Ikerbasque, Basque Foundation for Science, E-48011 Bilbao, Spain

15:15 **Thermally Drawn Multi-material Fibers: a Novel Opportunity for Advanced Electronic Fibers and Textiles.** **J 5.5**
Tung Nguyen-Dang, Alexis Page, Yungpeng Qu, Wei Yan, Prof. Fabien Sorin.
Laboratoire des Fibres et Matériaux Photoniques - Institut des Matériaux - Ecole Polytechnique Fédérale de Lausanne - Switzerland.

15:30 **Stretchable, Transparent Electrodes Based on Metallic Glasses with Superior Mechanical Properties and Thermal Stability** **J 5.6**
Byeong Wan An1, Young-Geun Park1, Jiuk Jang1, Jang-Ung Park1
School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, 44919, Republic of Korea

15:45 **Direct synthesis of conjugated polymers on textiles for an application in wearable electronic devices.** **J 5.7**
Usein ISMAILOV, Esma ISMAILOVA
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne

16:00 **Coffee break**

Materials For Functional Fibers 2 : Genevieve Dion

16:30 **Next generation Smart Textiles – morphing and actuating devices** **J 6.1**
Nils-Krister Persson, Ali Maziz, Ingrid Öberg, Isabella Christiansson Jonas Stålhand, Edwin Jager
Nils-Krister Persson(1), Ali Maziz (2), Ingrid Öberg(1), Isabella Christiansson (1), Jonas Stålhand (3), Edwin Jager(2) (1) Swedish School of Textiles (THS), Smart Textiles, University of Borås, 50190 Borås, Sweden. (2) Department of Physics, Chemistry and Biology (IFM), Biosensors and Bioelectronics Centre, Linköping University, 58183 Linköping, Sweden. (3)Department of Management and Engineering (IEI), Solid Mechanics, Linköping University, 58183 Linköping, Sweden.

17:00 **Electrospun mats of liquid crystal core fibers for non-electronic volatile organic compound (VOC's) and tensile sensing** **J 6.2**
Anshul Sharma, Catherine G. Reyes, Jan P.F. Lagerwall
Physics and Materials Science Research Unit, University of Luxembourg, Luxembourg, Europe

17:15 **Electrospinning Technique for Coaxial Semiconductive Organic Nanofibers for Flexible Electronic Devices** **J 6.3**
Mr. William Serrano-García, Dr. Sylvia Thomas
University of South Florida at Tampa, Florida, USA

17:30 **Printing of Sensors on Industrial Textile Fibers** **J 6.4**
Danick Briand, G. Mattana, A. Vasquez-Quintero, M. Camara
Ecole Polytechnique Fédérale de Lausanne EPFL-LMTS Maladière 71b P.O. Box 526 CH-2000 Neuchâtel Switzerland

17:45 **Polymeric Ionic Liquids for Fabric-based Gas Sensors** **J 6.5**
Maresova Eva1,2, Tudor Alexandru3, Glennon Thomas3, Vrnata Martin1, Fitl Premysl1, Bulir Jiri2, Lancok Jan2, Vlcek Jan1, Tomecek David1, Pokorny Petr2, Novotny Michal2, Florea Larisa3, Coyle Shirley3, Diamond Dermot3
1 University of Chemistry and Technology, Dep. Physics and Measurements, Prague 2 Institute of Physics ASCR, Dep. of Analysis of Functional Materials, Prague 3 Insight Centre for Data Analytics, National Centre for Sensor Research, DCU, Dublin

18:00 **Textile based electrical valves for microfluidics** **J 6.6**
Mahiar Max Hamedi
Department of Fibre and Polymer Technology, and Wallenberg Wood Science Centre, KTH Royal Institute of Technology, School of Chemical Science and Engineering Teknikringen 56, 10044 Stockholm, Sweden.

Wednesday 24 May 2017

Textile Sensors, Systems, Circuits 1 : Nils-Krister Persson

09:00 **Stretchable Electronics as a Route to Smart Fabrics and Interactive Textiles** **J 7.1**
John A. Rogers
Northwestern University

09:30 **Superelastic conductive fiber-based innovative electronic textiles for advanced wearable electronics** **J 7.2**
Jaehong Lee, Taeyoon Lee
Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University

09:45 **Wearable, transparent smart contact lens sensors for wireless ocular diagnostics** **J 7.3**
Joohee Kim, Jang-Ung Park*
School of Materials Science and Engineering, Wearable Electronics Research Group, Center for Smart Sensor Systems, Ulsan National Institute of Science and Technology (UNIST), Ulsan, 44919, Republic of Korea

10:00 **Coffee break**

Textile Sensors, Systems, Circuits 2 : Yury Gogotsi

10:30 **Electronic textiles for ambient and body monitoring** **J 8.1**
Annalisa Bonfiglio
Dept of Electrical and Electronic Engineering, University of Cagliari

11:00 **Cutaneous recording and stimulation of muscles using organic electronic textiles** **J 8.2**
Maria Papaiordanidou 1, Seiichi Takamatsu 2, Shahab Rezaei-Mazinani 3, Thomas Lonjaret 3,4, Alain Martin 5, Esma Ismailova 3
1. UMR7287, CNRS, Aix-Marseille University, 2. National Institute of Advanced Industrial Science and Technology, 3. Department of Bioelectronics, Ecole, Nationale Supérieure des Mines, CMP-EMSE, 4. MicroVitae Technologies, 5. INSERM U 1093, Cognition, Action et Plasticité Sensorimotrice, Université de Bourgogne

11:15 **A wearable electro-chemical sensor for the selective detection of redox-active biomolecules in sweat** **J 8.3**
Marta Tessarolo 1-3, Isacco Gualandi 2, Erika Scavetta 2, Dario Cavedale 3, Beatrice Fraboni 3
1 Interdepartmental Centre for Industrial Research – Advanced Mechanics and Materials (CIRI – MAM), University of Bologna, Bologna, Italy, 2 Department of Industrial Chemistry «Toso Montanari», University of Bologna, Bologna, Italy, 3 Department of Physics and Astronomy, University of Bologna, Bologna, Italy,

11:30 **Integration Technologies for Electronics and Sensors in Textiles** **J 8.4**
Christine Kallmayer, Malte von Krshiwoblozki, Christian Dils, Thomas Löher
Fraunhofer IZM, Fraunhofer IZM, Fraunhofer IZM, Technical University of Berlin

12:00 **Characterization of mechanical behavior of flexible electronics embedded onto textile for in-situ medical applications** **J 8.5**
Séverine DE MULATIER (a), David COULON (b), Roger DELATTRE (a), Marc RAMUZ (a)
a) Department of Flexible Electronics, Ecole Nationale Supérieure des Mines, Centre Microélectronique de Provence CMP-EMSE, F-13541 Gardanne, France. b) @-HEALTH, Europarc de Pichaury, 1330 Rue Jean René Guillibert Gauthier de la Lauzière, 13290 Aix-en-Provence, France.

12:15 **Stretchable electronics for biomedical applications** **J 8.6**
Janos Vörös
Laboratory of Biosensors and Bioelectronics, Institute for Biomedical Engineering, ETH Zurich, Switzerland

12:45 **Lunch**

SYMPOSIUM K

Bioinspired and biointegrated materials as new frontiers nanomaterials VII

Symposium Organizers :

Bo ZHU, Shanghai University, Shanghai, China

Donata IANDOLO, Dep; of Bioelectronics,
Microelectronique de Provence Gardanne, France

Eugenia BUZANEVA, TSN University of Kyiv, NASU, Ukraine

Giovanni MARLETTA, University of Catania, Italy

Peter SCHARFF, Technical University of Ilmenau, Germany

COLLABORATORS:

CLINAM (European Foundation for Clinical Nanomedicine)
CLINAM http://www.clinam.org

N.S. SOCIETY FOR BIOMATERIALS (SFB)
RESEARCH CENTER for APPLIED SCIENCES ACADEMIA SINICA, TAIWAN
Project LiNaBioFluid EU HORIZON 2020 FET Open Program

LiNaBioFluid HORIZON 2020
www.laserbiofluid.eu
EU COST Action MP 1301 NEWGEN
EU COST Action CA 15107 MULTICOMP WQ 3

cost
www.cost-newgen.org

Supporting publication "Materials Science and Engineering C: Materials for Biological Applications" (Elsevier)
http://www.journals.elsevier.com/materials-science-and-engineering-c

SYMPOSIUM K
TIMETABLE

	Monday May 22	Tuesday May 23	Wednesday May 24	Thursday May 25	Friday May 26
9:00 10:30	(09:10-10:20) Session I	(09:00-10:00) Session II	(09:00-10:15) Session III I	(08:30-10:10) Session IV	09:00-10:20) Session VI
10:00 10:30	Coffee break				
10:30 12:30	(10:40-13:00) Session I.I	(10:30-13:00) Session II.I	(10:30-12:00) Session II.I	(10:30-12:30) Session IV.I	(10:30-12:30) Session VI.I
12:30 14:00	Lunch break				
14:00 15:30	(14:00-15:30) Session I.2	(14:00-15:30) Session II.2	13:00-15:30) Session II.2	(13:30-15:45) Session V	
15:30 16:00	Coffee break		(15:40-16:15) Poster Session III	Coffee break	
16:00 17:30	(16:00-17:00) Session I.3 (17:00-18:30) Young Session I	(15:50-17:00) Session II.3 (17:00-18:30) Young Session I.I	16:15 - 18:30 Plenary Session	(16:00-17:30) Session V.I	
17:30 19:30	(18: 30-19:30) Young Poster Session 1 (18: 40-19:30) Poster Session 1	(18: 30-19:30) Young Poster Session 1.I (18: 40-19:30) Poster Session II		(17: 30-18:30) Poster Session IV (18: 40-18:30) Poster Session V	

Monday 22 May 2017

I. Cell &Tissue Nature Science, Growth at Surface/Interface, Inspired Repair & 3D/4D Imaging.

The Special Session & Young Investigator Forum are dedicated to the 2016 Nobel Laureate in Physiology or Medicine : Professor Yoshinori Ohsumi

Keynote Presentations Session. Chairs: Dr.D.Iandolo &Professors G.Marletta,T.Webster, Osamu Suzuki & Insung S.Choi

09:10 **Invited Lecture. Professor Thomas J. Webster. The impact of nano and picotechnology on medicine** **K I.1**
Professor Thomas J. Webster
Chemical Engineering, Northeastern University, Boston, MA 02115

09:40 **Mechanism of dissolution, hydrolysis and re-precipitation in OCP scaffold controlling cellular and tissue responses** **K I.2**
Prof. Osamu Suzuki, Takahisa Anada, Yukari Shiwaku
Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Sendai, Japan

10:00 **Nano-intelligent surfaces for cell-sheet based regenerative medicine** **K I.3**
Prof. Yoshikatsu AKIYAMA, Jun KOBAYASHI, Masayuki YAMATO, Tatsuya SHIMIZU and Teruo OKANO
Institute of Advanced Biomedical Engineering and Science, Tokyo Women?s Medical University, 8-1 Kawada-cho, Shinjuku-ku, Tokyo, Japan.

10:20 **Coffee Break. General Photo**

10:40 **Design of multi-functional soft-biomaterials based on the Intermediate Water Concept** **K I.4**
Prof. Masaru Tanaka1,2, Shingo Kobayashi1,2, Takashi Hoshiba 2, Kazuki Fukushima2, Fumihiro Aratsu1, Daiki Murakami1
1Institute for Materials Chemistry and Engineering, Kyushu University. 2Frontier Center for Organic Materials, Yamagata University. masaru_tanaka@ms.ifoc.kyushu-u.ac.jp tanaka@yz.yamagata-u.ac.jp http://www.soft-material.jp/ http://www.bio-material.jp/

11:00 **Artificial Spores: Chemical Sporulation and Germination** **K I.5**
Insung S. CHOI
Center for Cell-Encapsulation Research, Department of Chemistry, KAIST, Korea

11:20 **Smart peptides for Bioresponsive Surfaces** **K I.6**
Dr. Grazia Maria Lucia Messina
Laboratory for Molecular Surfaces and Nanotechnology - Dept. of Chemical Sciences, University of Catania, Viale A. Doria, 95125 Catania, Italy

11:40 **Bio-inspired structures and approaches in biomaterials research** **K I.7**
Prof. Fabio Variola
Department of Mechanical Engineering/Cellular and Molecular Medicine, University of Ottawa, Ottawa, Ontario, Canada.

12:00 **Biomimicry at the molecular level: molecularly imprinted polymers as synthetic antibody mimics** **K I.8**
Prof. Karsten Haupt
Sorbonne Universités, Compiègne University of Technology CNRS Institute for Enzyme and Cell Engineering, Compiègne, France

12:20 **Inorganic/ organic hybrids can match the mechanical properties of host tissues and have controlled biodegradation** **K I.9**
Prof. Julian R Jones
Department of Materials, Imperial College London, South Kensington Campus, London, SW7 2AZ

12:40 **The nanostructure of human teeth in health and disease** **K I.10**
Prof. Bert Müller
Biomaterials Science Center, University of Basel, Switzerland

13:00 **Lunch**

14:00 **Injectable calcium phosphate cement foams for bone repair: processing, microstructure, mechanical and biological properties** **K I.11**
Franck TANCRET, Jingtao ZHANG, Weizhen LIU, Olivier GAUTHIER, Sophie SOURICE, Paul PILET, Gildas RETHORE, Khalid KHAIROUN, Jean-Michel BOULER, Pierre WEISS
Université de Nantes, France Oniris, Nantes, France

14:15 **2-D & 3-D Oxygen Mapping in Tissue Engineering Constructs** **K I.12**
Paul Wolff(1), Laura Heimann(1), Gregor Liebsch (2), Robert J. Meier(2), Martijn van Griensven(1), Elizabeth R. Balmayor(1).
(1) Experimental Trauma Surgery, Klinikum rechts der Isar, Technical University of Munich, Munich, Germany. (2) PreSens Precision Sensing GmbH, Regensburg, Germany.

14:30 **Bioinspired mineralization of hydrogels** **K I.13**
Sindre H. Bjørnøy1, David C Bassett1, Manuel Schweikle2, Hanna Tiainen2, Berit Løkensgard Strand3, Seniz Ucar4, Jens-Petter Andreassen4, Pawel Sikorski1
1Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway. 2Department of Biomaterials, University of Oslo, Norway. 3Department of Biotechnology, Norwegian University of Science and Technology, Trondheim, Norway. 4Department of Chemical Engineering, Norwegian University of Science and Technology, Trondheim, Norway.

14:45 **Strategies for using biomaterials for targeting intracellular pathogens** **K I.14**
Rajeev Mudakavi, Surya Vanamali, Dipshikha Chakravortty, Ashok Raichur
Rajeev Mudakavi (+Presenter) Department of Materials Engineering, Indian Institute of Science, India, Centre for BioSystems Science and Engineering, Indian Institute of Science, India, Surya Vanamali, Department of Materials Engineering, Indian Institute of Science, India Dipshikha Chakravortty Microbiology and Cell Biology, Indian Institute of Science, India Centre for BioSystems Science and Engineering, Indian Institute of Science, India Ashok Raichur# Department of Materials Engineering, Indian Institute of Science, India, Centre for BioSystems Science and Engineering, Indian Institute of Science, India, #Corresponding author: amr@materials.iisc.ernet.in

15:00 **Carbohydrate functional layers at carbon and polymers: novel tools for surface biomimicry** **K I.15**
Leticia Esteban, M. Daniela Angione, Thomas Duff, Adam Myles, Joana Vasconcelos, Federico Zen, Eoin M. Scanlan, Paula E. Colavita
School of Chemistry and AMBER Research Centre, Trinity College Dublin, College Green, Dublin D2, Ireland

15:15 **Ultrafast laser processing of biomaterials** **K I.16**
Mitsuhiro Terakawa
Keio University

The H 2020 Project on Advanced Surface Laser Engineering for Biomimetics

15:30 **Keynote Introduction. Laser induced surface structures as biomimetic model of fluid transport and neural tissue engineering** **K I.17**
Emmanuel Stratakis
Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology-Hellas (FORTH), Heraklion, 71003, Greece, email: stratak@iesl.forth.gr 2 Materials Science and Technology Department, University of Crete, Heraklion, 71003, Greece

15:50 **Micro structures for control of wetting properties and transport of liquids inspired by body surface structures of animals** **K I.18**
Philipp Comanns (1), Kai Winands (2), Emmanuel Stratakis (3), Werner Baumgartner (4)
1 RWTH Aachen University, Institute for Biology II, Worringerweg 3, 52074 Aachen, Germany, 2 Fraunhofer Institute for Production Technology IPT, Steinbachstr. 17, 52074 Aachen, Germany, 3 Foundation for Research and Technology - Hellas, Institute of Electronic Structure and Laser, 71110 Heraklion, Greece, 4 JKU Linz, Institute of Biomedical Mechatronics, Altenberger Str. 69, 4040 Linz, Austria

16:05 **Flat bark bugs as biomimetic model for microstructure controlled wetting and fluid transport** **K I.19**
Johannes Heitz (a), Cristina Plamadeala (a), Florian Hischen (b), Gerda Buchberger (b), Werner Baumgartner (b)
(a) Institute of Applied Physics, Johannes Kepler University Linz, Austria, (b) Institute of Biomedical Mechatronics, Johannes Kepler University Linz, Austria

16:20 **Bioinspired morphologies generated on steel surfaces by ultrashort laser pulse irradiation mimicking the fluid transport of bugs** **K I.20**
S. V. Kirner (1), U. Hermens (2), K. Winands (2), H. Mescheder (2), C. Florian (3), J. Solis (3), J. Siegel (3), F. Hischen (4), W. Baumgartner (4), E. Skoulas (5), A. Mimidis (5), E. Stratakis (5), D. Spaltmann (1), J. Krüger (1), J. Bonse (1)
(1) Bundesanstalt für Materialforschung und -prüfung (BAM), Unter den Eichen 87, D-12205 Berlin, Germany (2) Fraunhofer Institute for Production Technology IPT, Steinbachstr. 17, D-52074 Aachen, Germany (3) Laser Processing Group, Instituto de Optica – CSIC, Serrano 121, E-28006 Madrid, SPAIN (4) Institute of Biomedical Mechatronics, Johannes Kepler University Linz, Altenberger Straße 69, A-4040 Linz, Austria (5) Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, GR-71110 Crete, Greece

16:35 **Biomimetic structures fabricated with femtosecond laser pulses** **K I.21**
Camilo Florian, Daniel Puerto, Yasser Fuentes-Edfuf, Evangelos Skoulas, Emmanuel Stratakis, Philipp Comanns, Javier Solis, Jan Siegel
Laser Processing Group, Instituto de Optica – CSIC, Serrano 121, E-28006 Madrid, SPAIN, Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, GR-71110 Crete, Greece, RWTH Aachen University, Institute of Biology II, Worringerweg 3, 52074 Aachen, Germany

16:50 **Mimicking lizard-like surface structures and their fluid transport upon ultrashort laser pulse irradiation of steel** **K I.22**
U. Hermens (1), S.V. Kirner (2), C. Emonts (3), P. Comanns (3), E. Skoulas (4), A. Mimidis (4), H. Mescheder (1), K. Winands (1), J. Krüger (2), E. Stratakis (4), J. Bonse (2)
(1) Fraunhofer Institute for Production Technology IPT, Steinbachstr. 17, D-52074 Aachen, Germany, (2) Bundesanstalt für Materialforschung und -prüfung (BAM), Unter den Eichen 87, D-12205 Berlin, Germany, (3) RWTH Aachen University, Institute of Biology II, Worringerweg 3, D-52074 Aachen, (4) Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, GR-71110, Crete, Greece

17:00 **Multifunctional bionanocomposite materials for wound healing** **K FI.2**
Federica Leone,1,2,3,4 Barbara Onida,1 Karen Wright,4 John G. Hardy2,3
1 Politecnico di Torino, Department of Applied Science and Technology, 10129, Italy, 2 Department of Chemistry, Lancaster University, LA1 4YB, UK. 3 Materials Science Institute, Lancaster University, LA1 4YB, UK. 4 Department of Biomedical and Life Sciences, Lancaster University, LA1 4YG, UK

Young Investigator Forum. Keynote Session : Organizers/Chairs-Federico Zen, PhD Student, Trinity College Dublin, Dublin, Ireland & Valentine Blashchuk Bach D Student, TSN University of Kyiv, Kyiv, Ukraine . Supervisor Professor Dr. Masaru Tanaka, Kyushu University & Yamagata University, Japan

17:00 **Spectral triangulation: a 3D method for locating single-walled carbon nanotubes in vivo** **K FI.1**
Ching-Wei Lin, Sergei M. Bachilo, Michael Vu, Kathleen M. Beckingham, R. Bruce Weisman
Department of Chemistry and the Smalley-Curl Institute, Rice University, Houston, TX, USA Department of Biosciences, Rice University, Houston, TX, USA

17:00 **Enhanced Mechanical Properties of Tendon Collagen by Vapour Phase Mineralization** **K FI.3**
Seung-Mo Lee, Do Van Lam, André Gjardy, Ingrid Zenke , Wolfgang Wagermaier, Peter Fratzl
Seung-Mo Lee, Do Van Lam Department of Nanomechanics, Korea Institute of Machinery and Materials (KIMM), 156 Gajeongbuk-ro, Yuseong-gu, Daejeon 34113, South Korea & Nano Mechatronics, Korea University of Science and Technology (UST), 217 Gajeong-ro, Yuseong-gu, Daejeon 34103, South Korea André Gjardy, Ingrid Zenke, Wolfgang Wagermaier, Peter Fratzl Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Research Campus Golm, 14424 Potsdam, Germany

17:00 **Development of gold-curcumin nanoconjuagtes for photodynamic therapy in cancer and multidrug resistance pathogen infections** **K FI.4**
Dr. Nanasaheb D. Thorat, Dr. Mohamed.Noor, Professor Tewfik.Soulimane and Professor Syed A.M. Tofail
Materials & Surface Science Institute, Bernal Institute, University of Limerick, Sreelane, Castletroy, Co. Limerick, IRELAND

17:00 **The dynamic response of enteric neurons on polymeric substrates** **K FI.5**
Dilara Jakupovic
University of Ottawa, Children's Hospital of Eastern Ontario

17:00 **The molecular and histological effects of the laser beam on the tissue after the physical method of tissue acellalurization** **K FI.6**
Roman Major1, Marek Sanak2, Mariusz Gajda3, Grzegorz Lis3, Krzysztof Czyz4, Marek Strzelec4, Roman Ostrowski4, Bogusław Major1
1 Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta St. 25, Cracow, PL. 2 Department of Medicine, Jagiellonian University Medical College, 8 Skawinska Street, 31-066 Cracow, PL. 3 Jagiellonian University Medical College, Department of Histology, Kraków, Poland. 4 Institute of Optoelectronics, Military University of Technology, Warszawa, Poland

17:00 **Interfacing Enzymes with Silicon Nanocrystals through Thiol-Ene Reaction** **K FI.17**
Christopher Jay T. Robidillo, Jonathan G.C. Veinot
Department of Chemistry University of Alberta

17:00 **Nano-bio interfaces for implant osseointegration** **K FI.7**
Luciana D. Trino 1 Erika S. Bronze-Uhle 1 Amsaveni Ramachandran 2 Mathew T. Mathew 3 Anne George 2 Paulo N. Lisboa-Filho 1
1 São Paulo State University (Unesp), School of Sciences, Bauru, SP, Brazil 2 University of Illinois at Chicago, Chicago, IL, USA 3 University of Illinois College of Medicine at Rockford, Rockford, IL, USA

17:00 **A fundamental investigation into the bioresponse of carbon-modified surfaces for the rational design of carbon-based biodevices** **K FI.8**
Joana M. Vasconcelos, Federico Zen, Daniela M. Angione, Ronan J. Cullen, Paula E. Colavita
School of Chemistry and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College Dublin, College Green, Dublin 2, Ireland.

17:00 **Cellular response to semi-ordered/biomimetic nanotubular surfaces** **K FI.9**
William Ho (Master's Student), Dr. Fabio Variola
University of Ottawa

17:00 **Injectable polyamidoamine-based hydrogels for biomedical applications** **K FI.10**
Leana Travaglini, Federica Fiorini, Giuseppe Alonci, Elena Longhi, Pietro Riva, Silvana Perretta, and Luisa De Cola
Leana Travaglini, Federica Fiorini, Giuseppe Alonci, Elena Longhi, Luisa De Cola Université de Strasbourg, CNRS, ISIS UMR 7006, 8 allée Gaspard MongeF-67000 Strasbourg, France Luisa De Cola Institut fur Nanotechnologie (INT) - Building 640, Karlsruhe Institute of Technology (KIT) - Campus Nord, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany Pietro Riva, Silvana Perretta IHU Strasbourg, University Hospital of Strasbourg, Place de l?Hôpital 1, 67091 Strasbourg, France

17:00 **Biomimetic surface structuring using cylindrical vector femtosecond laser beams** **K FI.11**
Skoulas.E, Mimidis.A, Stratakis.E
Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology - Hellas (FORTH). Materials Science and Technology Department - University of Crete.

17:00 **Bioinspired material design by hierarchical self-assembly on prepatterned surfaces** **K FI.12**
K. Brassat, A. Keller, G. Grundmeier, W. Bremser, O. Strube, J. K. N. Lindner
Department of Physics, Paderborn University, Paderborn, Germany, Department of Chemistry, Paderborn University, Paderborn, Germany, Center for Optoelectronics and Photonics Paderborn CeOPP, Paderborn, Germany

17:00 **Plasmachemical modified biodegradable electrospun nanofibers for tissue engineering** **K FI.13**
L. Zajickova, E. Kedronova, J. Medalova, P. Cernochova, A. Stoica, M. Michlicek, A. Manakhov
CEITEC Masaryk University, Brno, Czech Republic, CEITEC Masaryk University, Brno, Czech Republic, Faculty of Science, Masaryk University, Brno, Czech Republic, Faculty of Science Masaryk University, Brno, Czech Republic, CEITEC Masaryk University, Brno, Czech Republic, Masaryk University, Brno, Czech Republic, National University of Science and Technology, Moscow, Russia

17:00 **Interfacial Nanoshell Formation Using Ferric Ion and Tannic Acid for Cell Encapsulation** **K FI.14**
Beom Jin Kim1, Sol Han1, Kyung-Bok Lee2, Insung S. Choi1
1Center for Cell-Encapsulation Research, Department of Chemistry, KAIST, Daejeon 34141, Korea. 2Division of Bioconvergence Analysis, Korea Basic Science Institute, Daejeon 34133, Korea.

17:00 **The stimuli responsive sensor CNT&#8217,s nanostructures organized by biomolecular complex** **K FI.15**
V.Blashchuk1, D.Karpenko3, O.Ivanyuta1, N.Tsierkezos2, U.Ritter2, P.Scharff2, E.Buzaneva1
1Taras Shevchenko National University of Kyiv, Faculty of RadioPhysics Electronics and Computer Systems, Volodymyrska Str. 64/13, 01601 Kyiv, Ukraine, 2Institute for Chemistry and Biotechnology, 98684, Ilmenau, Germany, PF 100565, 3 NTU of Ukraine ?KPI?, Politechnichna14, 03056, Kyiv-56,Ukraine

17:00 **Bioinspired carbohydrate coatings: modulation of protein fouling and interfacial properties at carbon surfaces** **K FI.16**
Federico Zen, Vasilios D. Karanikolas, James Behan, Joana Vasconcelos, Jenny Andersson, Thomas Duff, Eoin M. Scanlan, Louise Bradley, Paula E. Colavita.
Federico Zen, James Behan, Joana Vasconcelos, Thomas Duff, Eoin M. Scanlan, Paula E. Colavita: School of Chemistry and AMBER Research Centre, University of Dublin Trinity College, College Green, Dublin, Ireland. Vasilios D. Karanikolas, Louise Bradley: School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), University of Dublin Trinity College, College Green, Dublin, Ireland. Jenny Andersson: Insplorion AB, Sahlgrenska Science Park, Medicinaregatan 8A, 413 90 Göteborg, Sweden.

Young Investigator Forum. Poster Session : Organizers/Chairs-Federico Zen, PhD Student, Trinity College Dublin, Dublin, Ireland & Valentine Blashchuk Bach D Student, TSN University of Kyiv, Kyiv, Ukraine . Supervisor Professor Dr. Masaru Tanaka, Kyushu University & Yamagata University, Japan

18:30 **Photophysical properties of peptide nanostructures induced by beta- sheets** **K FPI.1**
Nadezda Lapshina1, Tamara Shostak1, Amir Handelman1, 2, Tal Ellenbogen1 and Gil Rosenman1
1School of Electrical Engineering, Iby and Aladar Fleishman Faculty of Engineering, Tel Aviv University, Tel Aviv, Israel 2 Faculty of Engineering, Holon Institute of Technology, Holon, Israel

18:30 **Multifunctional biocompatible superparamagnetic nanoparticles encapsulated in a polymer matrix for cancer cell destruction and m** **K FPI.2**
Nanasaheb D. Thorat and Syed A.M. Tofail
Materials & Surface Science Institute, Bernal Institute University of Limerick, Ireland

18:30 **The dynamic response of enteric neurons on polymeric substrates** **K FPI.3**
Dilara Jakupovic (M.A.Sc. candidate)
University of Ottawa, Children's Hospital of Eastern Ontario

18:30 **Spectral changes of agarose-based ultrasonic tissue-mimicking gel under different temperatures** **K FPI.4**
Heng-Yin Chen, Nelson G. Chen
Institute of Biomedical Engineering, Department of Electrical and Computer Engineering, National Chiao Tung University, Hsinchu, Taiwan

18:30 **Toxicological Evaluation of TiO2 and ZnO Nanoparticles on Fibroblasts and Keratinocytes** **K FPI.12**
Archana Gautam, Luong T. H. Nguyen, Kee Woei Ng
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 Tel: +6587826653 Email: archana003@e.ntu.edu.sg

18:30 **Surface modification of metallic materials dedicated to the new generation of artificial heart valve** **K FPI.5**
Roman Major1, Malgorzta Gonsior2, Marek Sanak3, Roman Kustosz2, Juergen M. Lackner4
1 Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta St. 25, Cracow, PL. 2 Heart Prosthesis Institute, Artificial Heat Laboratory, Wolnosci 345A, 41-800 Zabrze, Poland 3 Department of Medicine, Jagiellonian University Medical College, 8 Skawinska Street, 31-066 Cracow, PL. 4 Joanneum Research Forschungs-GmbH, Materials – Functional Surfaces, Leoben, A.

18:30 **Multifunctional conductive bionanocomposite hydrogels for wound healing** **K FPI.6**
Federica Leone, Karen Wright, Luigi Manna, Barbara Onida, John G. Hardy
Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy, Department of Biomedical and Life Sciences, Lancaster University, Faculty of Health and Medicine, Lancaster University, Lancaster, Lancashire LA1 4YB, United Kingdom, Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy, Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy, Department of Chemistry, Lancaster University, Lancaster, Lancashire LA1 4YB, United Kingdom

18:30 **DNA carrier design for specific DNA sequence detection with nanopipettes** **K FPI.7**
Nur Sabrina Wahid, Amelia Loh, Tim Albrecht, Anthony Cass
Department of Chemistry, Imperial College London, Exhibition Road, London SW7 2AZ, U.K

18:30 **Tailored antidot patterns created by nanosphere lithography for bioapplications** **K FPI.8**
K. Brassat, A. Keller, G. Grundmeier, W. Bremser, O. Strube, J. K. N. Lindner
Nanostructures, Nanoanalysis and Photonic materials, Department of Physics, Paderborn University, Paderborn, Germany, Center for Optoelectronics and Photonics Paderborn CeOPP, Paderborn, Germany, Technical and Macromolecular Chemistry, Department of Chemistry, Paderborn University, Paderborn, Germany, Biobased and Bioinspired Materials, Department of Chemistry, Paderborn University, Paderborn, Germany,

18:30 **Tailoring mechano-sensitive liposomes for targeted vasodilation** **K FPI.9**
Marzia Buscema [1], Sofiya Matviykiv [1], Hans Deyhle [1], Thomas Pfohl [1], Andreas Zumbuehl [2] and Bert Müller [1]
[1] Biomaterials Science Center, University of Basel, Gewerbestrasse 14, 4123 Allschwil, Switzerland, [2] Department of Chemistry, University of Fribourg, Chemin du Musée 9, 1700 Fribourg, Switzerland

18:30 **Molecular models to nanoimages of nanostructures from CNT&#8217,s modified by the Cu organic complex-histidine molecules** **K FPI.10**
V.Blashchuk1, D.Karpenko3, O.Ivanyuta1, N.Tsierkezos2, U.Ritter2, P.Scharff2, E.Buzaneva1
1Taras Shevchenko National University of Kyiv, Faculty of RadioPhysics Electronics and Computer Systems, Volodymyrska Str. 64/13, 01601 Kyiv, Ukraine, 2Institute for Chemistry and Biotechnology, 98684, Ilmenau, Germany, PF 100565, 3 NTU of Ukraine ?KPI?, Politechnichna14, 03056, Kyiv-56,Ukraine

18:30 **Understanding carbon/lipid interaction for the rational design of biomaterials** **K FPI.11**
Joana M. Vasconcelos, Federico Zen, Daniela M. Angione, Ronan J. Cullen, Paula E. Colavita
School of Chemistry and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College Dublin, College Green, Dublin 2, Ireland

18:40 **Personalized Modification of Implant Surface Topography via Electrohydrodynamic Printing** **K PI.2**
Marek Pokorny, Jan Klemes, Ondrej Zidek, Camille Dollinger, Vladimir Velebny, Nihal Engin Vrana
Marek Pokorny, Jan Klemes, Ondrej Zidek, Vladimir Velebny: Contipro a.s., Dolni Dobrouc 401, 561 02, Czech Republic Camille Dollinger, Nihal Engin Vrana: PROTIP MEDICAL, 8 Place de l'Hôpital, F-67000 Strasbourg, France Nihal Engin Vrana: INSERMUMR1121, 11 rue Humann, F-67085 Strasbourg, France

POSTER SESSION.
Cell & Tissue Nature Science, Bioengineering & Investigations :
Chairs: Professors Grazia Maria Lucia Messina & Fabio Variola

18:40 **Enzyme-mimetic nanomaterials regulate the release of biochemical cues for tissue engineering** **K PI.1**
Jimin Park, Yu-Chan Kim, Myoung-Ryul Ok
Center for Biomaterials, Korea Institute of Science & Technology, South Korea

18:40 **Private view on circadian rhythms of brain activity.** **K PI.3**
Vdovenkova T.A.
Douglas Hospital Research Centre, Montreal, Quebec, Canada tvdovenk@connect.carleton.ca

18:40 **Bacterial and Mammalian Cell Behaviors on Peptide-grafted Nanopatterned Surfaces** **K PI.4**
Catherine Philippart, Karine Glinel
Institute of Condensed Matter & Nanosciences (Bio & Soft Matter), Université catholique de Louvain, Croix du Sud 1, box L7.04.02, 1348 Louvain-la-Neuve, Belgium

18:40 **Functionalization of PTFE surface after plasma immersion ion implantation treatment for cardiovascular application** **K PI.5**
Ang Gao1, Penghui Li2, Liping Tong2, Huaiyu Wang2, Paul K. Chu1
1 Department of Physics & Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, PR China 2 Institute of Biomedicine & Biotechnology, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, PR China

18:40 **Strategies for bone tissue engineering based on polymer-based magnetostrictive and magnetoelectric composites** **K PI.6**
C. Ribeiroa,b, S. Ribeiroa, D. M. Correiaa, R.J. Pereiraa, P. Martinsa and S. Lanceros-Mendeza,c,d
aDepartamento de Física, Universidade do Minho, 4710-057, Braga, Portugal bCenter of Biological Engineering, University of Minho, Braga 4710-057 Portugal cBCMaterials, Parque Científico y Tecnológico de Bizkaia, 48160-Derio, Spain. dIKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain.

18:40 **Polyvinylidene fluoride coatings optimization for improved osteoblast response** **K PI.7**
L.N. Dumitrescu1,2, P. Neacsu3, I. Tirca1,2, A. Bonciu1,4, V. Marascu1, V. Dinca1, A. Cimpean3 and M. Dinescu1
1National Institute for Laser and Radiation, Bucharest, Magurele, Romania. 2University of Craiova, Faculty of Sciences, Craiova, Romania. 3 Department of Biochemistry and Molecular Biology, Faculty of Biology, University of Bucharest, Bucharest, Romania
4University of Bucharest, Faculty of Physics, Bucharest, Romania

18:40 **Spatially controlled micro patterns obtained by laser methods for cellular behavior study** **K PI.15**
L. Rusen1, V. Dinca1*, L.E. Sima2, I. Anghel1, A. Bonciu1,3, M. Dinescu1, and P. Hoffmann4
1 NILPRP, National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-16, Zip RO-077125, Tel. 00402145744142, Magurele, Bucharest, Romania 2Institute of Biochemistry of the Romanian Academy, Bucharest, Romania
3University of Bucharest – Faculty of Physics, Bucharest, Romania

18:40 **Targeted nanomaterials for Parkinson's diagnosis** **K PI.14**
M. Muñoz Hernando (1), I. E. Dunlop (2), D. T. Dexter (3) and A. E. Porter (2)
(1) Department of Chemistry, Imperial College London, SW72AZ, London, UK (2) Department of Materials, Imperial College London, SW72AZ, London, UK (3) Parkinson's Disease Research Group, Centre for Neuroinflammation and Neurodegeneration, Division of Brain Sciences, Department of Medicine, Imperial College London, Hammersmith Hospital Campus, London W12 0NN, UK

18:40 **Characterization of dental clear aligner using nanoindentation technique** **K PI.8**
Eun-chae Jeon, PilJung Kim, Nari Kang, Ju-Young Kim, Ji-Young Jeong, Seung Hwan Moon, Tae-Jin Je
Department of Nanomanufacturing Technology, Korea Institute of Machinery and Materials, 34103 Daejeon, Korea, School of Materials Science and Engineering, UNIST, 44919 Ulsan, Korea

18:40 **Bio-inspired Materials for Single Cell Encapsulation** **K PI.9**
Sung Ho Yang
Department of Chemistry and Chemisty Education, Korea National University of Education

18:40 **A Facile Method for Preparing Temperature-Responsive Cell Culture Surfaces by Using a Thioxanthone Photo-initiator Immobilized o** **K PI.10**
Yoshikatsu AKIYAMA, Kazuhiro FUKUMORI, Masayuki YAMATO and Teruo OKANO
Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, 8-1 Kawada-cho, Shinjuku-ku, Tokyo, Japan.

18:40 **Hybrid organic/inorganic nano-biocatalysts. A new generation of empowered enzymes** **K PI.11**
Maria Rita Correro
University of Applied Sciences and Arts Northwestern Switzerland

18:40 **The roles of interfacial water on proteins and cell adhesions** **K PI.12**
Masaru Tanaka1,2, Shingo Kobayashi1,2, Takashi Hoshiba 2, Kazuki Fukushima2, Fumihiro Aratsu1, Daiki Murakami1
1Institute for Materials Chemistry and Engineering, Kyushu University. 2Frontier Center for Organic Materials, Yamagata University. masaru_tanaka@ms.ifoc.kyushu-u.ac.jp tanaka@yz.yamagata-u.ac.jp http://www.soft-material.jp/ http://www.bio-material.jp/

18:40 **The effect of surface topography on neural cell responses** **K PI.13**
Anthi RANELLA1 co-authors: Sirago Spanou, 1,2 Chara Simitzi, 1 Despoina Aggelaki, 1,3 Evi Kavatzikidou, 1 Kanelina Karali, 1 Costas Fotakis 1,3 and Emmanuel Stratakis 1,4
1 Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology-Hellas (FORTH), Heraklion, 71003, Greece 2Biology Department, University of Crete, Heraklion, 71003, Greece 3Physics Department, University of Crete, Heraklion, 71003, Greece 4Materials Science and Technology Department, University of Crete, Heraklion, 71003, Greece

II. Smart Stimuli Responsive Nanomaterials: from designed synthesized to biological & biomimetics.

The special Session & Young Investigator Forum are dedicated to the 2016 Nobel Laureates in Chemistry Professors : Jean-Pierre Sauvage, Sir J.Fraser Stoddart, Bernard L. Feringa

. Keynote Presentations Session. Chairs: Dr. D.Iandolo & Professors G.Marletta, H. Fenniri, Yury Gogotsi & Dr. Em.Gatto

09:00 **Keynote Lecture. Professor Jean-Pierre Sauvage. From Chemical Topology to Molecular Machines: The transition metal approach** — **K II.1**
Prof. Jean-Pierre Sauvage
Institut de Science et d&#8217,ingénierie Supramoléculaire de l'Université de Strasbourg. 8 allée Gaspard Monge, BP70028, 67083 STRASBOURG Cedex, France

09:40 **Supramolecular Nanomedicine** — **K II.2**
Prof. Hicham Fenniri
Northeastern University, 313 Snell Engineering Center, 360 Huntington Avenue, Boston, MA, USA.

10:00 **Coffee Break. General Photo**

10:30 **Supramolecular approaches to 2-D materials: from complex structures to sophisticated functions** — **K II.3**
Prof. Paolo Samorì
ISIS, Université de Strasbourg & CNRS, 8 allée Gaspard Monge, 67000 Strasbourg, France.

10:50 **Carbonaceous Nanomaterials For fast removal of Cytokines from Blood** — **K II.4**
Dr. Mykola Seredych, Prof. Yuri Gogotsi
Department of Material Science and Engineering, Drexel University, Philadelphia, PA 19104 A.J. Drexel Nanomaterials Institute

11:10 **Nanodiamonds as a platform for neuronal cell attachment and growth into functional networks** — **K II.5**
Prof. Richard B. Jackman
London Centre for Nanotechnology, University College London (UCL), 17-19 Gordon Street, London , WC1H 0AH, UK

11:30 **Interfacial Supramolecular Peptide Nanostructures** — **K II.6**
Dr. Emanuela Gatto
University of Rome Tor Vergata, via della Ricerca Scientifica, 00133 Rome, Italy

11:50 **Visible Peptide Nanodots** — **K II.7**
Professor Gil Rosenman
The Henry and Dinah Krongold Chair of Microelectronics, School of Electrical Engineering, Faculty of Engineering, Tel Aviv University gilr@eng.tau.ac.il

12:10 **Fluorescent carbon quantum dots as chemical messenger for molecular communication through body fluids** — **K II.8**
Nunzio Tuccitto, Graziana Messina, Giovanni Li-Destri, Antonino Licciardello, Giovanni Marletta
University of Catania, Dep. of Chemical Sciences and CSGI, ITALY

12:25 **Nanomaterials based Electrochemical Aptasensors** — **K II.9**
Arzum Erdem
Ege University, Faculty of Pharmacy, Analytical Chemistry Department 35100 Bornova, Izmir, TURKEY

12:45 **Full 3D simulations of the gas sensing process in butterfly wings** — **K II.10**
G. I. Márk^1, K. Kertész^1, G. Piszter^1, Zs. Bálint^2, and L. P. Biró^1
^1 Institute of Technical Physics and Materials Science, (MFA), Centre for Energy Research, Hungarian Academy of Sciences, Budapest, Hungary, http://www.nanotechnology.hu/ ^2 Hungarian Natural History Museum, Baross Utca 13, H-1088 Budapest, Hungary

13:00 **Lunch. General Photo.**

14:00 **Invited Lecture. Bio-inspiring design and modeling of the self-organized cyberphysical and biocyber systems from nano to mega scale** — **K II.11**
Heorhii Vorobets
Department of Computer Systems and Networks, Yuriy Fedkovych Chernivtsi National University, 2, Kotsyubynskyi str., Chernivtsi, 58000, Ukraine

14:20 **Organic Photodiodes from Homochiral L-Proline Derived Squaraine Compounds with Strong Circular Dichroism** — **K II.12**
Manuela Schiek,(1) Matthias Schulz,(2) Majvor Mack,(1) Oliver Kolloge,(1) Arne Lützen.(2)
(1) University of Oldenburg, (2) University of Bonn

14:35 **Photonic of Supramolecular Peptide Nanostructures** — **K II.13**
Dr. Emanuela Gatto,1 Marta De Zotti,2 Fernando Formaggio,2 and Mariano Venanzi.1
1 Department of Chemical Sciences and Technologies, University of Rome "Tor Vergata", 00133 Rome, Italy, 2 Institute of Biomolecular Chemistry, CNR, Padova Unit, Department of Chemistry, University of Padova, 35131 Padova, Italy

14:45 **Piezophotonic materials: development and applications towards biological membranes breaching** — **K II.14**
Carlos Serpa,1,2 Alexandre D. Silva,1 Gonçalo F. F. Sá,2 Luis G. Arnaut 1
1 CQC, Department of Chemistry, University of Coimbra, 3004-535 Coimbra, Portugal 2 LaserLeap Technologies, IPN, Rua Pedro Nunes, 3030-199 Coimbra, Portugal

15:00 **DNA-Based Polyelectrolytes for Organic Light Emitting Electrochemical Cells** — **K II.15**
Serpil Tekoglu[1-2]*, Guan Ni-Yeo [1-2], Markus Bender [3], Anthony Morfa[1-2], Uli Lemmer[1], Manuel Hamburger[3], Gerardo Hernandez-Sosa[1-2]
[1] Light Technology Institute, Karlsruhe Institute of Technology, Engesserstr 13, 76131, Karlsruhe, Germany, [2] InnovationLab GmbH, Speyerer Str 4, 69115, Heidelberg, Germany, [3] Institute of Organic Chemistry, Heidelberg University, D-69120 Heidelberg, Germany.

15:15 **Molecular wires based on bionic peptides** — **K II.16**
Marta De Zotti, Alessandro Moretto, Emanuela Gatto, Grazia M.L. Messina, Giovanni Marletta
Marta De Zotti, Alessandro Moretto: Department of Chemistry, University of Padova, via Marzolo 1, 35131 Padova (Italy). Emanuela Gatto: Department of Chemical Sciences and Technologies, University of Rome Tor Vergata, 00133 Roma (Italy). Grazia M.L. Messina, Giovanni Marletta: Laboratory for Molecular Surfaces and Nanotechnology, Dept. of Chemical Sciences, University of Catania, 95125 Catania, Italy.

15:30 **Coffee Break. General Photo**

15:50 **Polymorphic, Textured Squaraine Thin Films as Potential Neuronal Interface** — **K II.17**
F. Balzer, H. Kollmann, M. Silies, M. Schulz, A. Lützen, Ch. Lienau, M. Schiek
Mads Clausen Institute, University of Southern Denmark, DK-6400 Sønderborg, Denmark, Ultrafast Nanooptics, Institute of Physics, University of Oldenburg, D-26111 Oldenburg, Germany, Kekulé Institute for Organic Chemistry and Biochemistry, University of Bonn, Gerhard-Domagk-Str.1, D-53121 Bonn, Germany, Energy and Semiconductor Research Laboratory, University of Oldenburg, D-26111 Oldenburg, Germany

16:05 **Electronic Plants and Tapping into Photosynthesis via Organic Bioelectronics** — **K II.18**
Gábor Méhes, Mikhail Vagin, Eleni Stavrinidou, Eliot Gomez, Daniel Simon, Magnus Berggren
Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, 601 74 Norrköping, Sweden

16:20 **Highly sensitive hydrogen peroxide biosensing by enzyme-mimetic antioxidant luminescent nanoparticles** — **K II.19**
Anna Pratsinis, Georgios A. Kelesidis, Frank Krumeich, Jean-Christophe Leroux, Georgios A. Sotiriou
Drug Formulation and Delivery, Institute of Pharmaceutical Sciences, Department of Chemistry and Applied Biosciences, ETH Zurich, 8093, Zurich, Switzerland, Particle Technology Laboratory, Institute of Process Engineering, Department of Mechanical and Process Engineering, ETH Zurich, 8092 Zurich, Switzerland, Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, 17177 Stockholm, Sweden

16:30 **Invited Lecture. New Frontiers of Clathrate Hydrate Crystalline Systems and their Control by Interfacial Interactions** — **K II.20**
Prof. Carolyn A. KOH
Colorado School of Mines, Center for Hydrate Research, Chemical Engineering Dept., Golden, CO 80401, USA

17:00 **A conductive biomaterial: regenerated silk fibroin conductive film modified by poly(hydroxymethyl-3,4-ethylenedioxythiophene) through in situ chemical oxidative polymerization** — **K FII.8**
Ao Zhuang, Yongjun Bian, Jianwei Zhou, Huili Shao, Xuechao Hu, Bo Zhu*, Yaopeng Zhang
Donghua University PhD candidate in Materials Science State Key Laboratory for Modification of Chemical Fibers and Polymer Materials College of Materials Science and Engineering Donghua University Shanghai 201620, China Tel:+8621-67792948
E-mail: zhuangao1992723@163.com

17:00 **Smart Scaffolds for 3D models: Electroactive scaffolds for in vitro cells monitoring and stimulation** **K FII.2**
Donata Iandolo, [1] Magali Ferro,[1] Charalampos Pitsalidis,[1] Sahika Inal,[2] Adel Hama,[1] Roisin Owens [1]
[1] Department of Bioelectronics, Centre Microélectronique de Provence, Gardanne, France. [2] Biological and Environmental Science and Engineering Division, KAUST, Saudi Arabia.

17:00 **Fabrication and testing of topologically interlocked architectured ceramics with improved impact resistance** **K FII.3**
Mohammad Mirkhalaf, Amanul Sunesara, Behnam Ashrafi, Benoit Simard, and Francois Barthelat
M. Mirkhalaf, A. Sunesara, and B. Ashrafi are with the National Research Council of Canada, 5145 Decelles Avenue, Montreal, QC H3T 2B2 (phone: +1 (514) 283 9209, Fax: +1 (514) 283 9445, emails: mohammad.mirkhalaf@nrc-cnrc.gc.ca, Amanul. Sunesara@nrc-cnrc.gc.ca, Behnam.Ashrafi@nrc-cnrc.gc.ca) B. Simard is with National Research Council Canada, Room 1043-100 Sussex Drive Ottawa, ON K1A 0R6 (phone: 613-990-0977, fax: 613-991-2648, email: Benoit.Simard@nrc-cnrc.gc.ca) F. Barthelat is with the Department of Mechanical Engineering, McGill University, 817 Sherbrooke Street West, Montreal, QC H3A 2K6, Canada (phone: 514-398-6318, Fax.: 514-398-7365, email: francois.barthelat@mcgill.ca)

17:00 **Fabrication of microcapsules containing clove oil and its application for antibacterial purpose** **K FII.4**
Yong-Bing Chong, Chee-Yoon Yue, Jinglei Yang
School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, Department of Mechanical and Aerospace Engineering, Hong Kong University of Science and Technology, Hong Kong SAR, China.

17:00 **Polyelectrolyte and enzyme functionalized layered bionanomaterials for antioxidant applications** **K FII.5**
Paul Rouster, Marko Pavlovic, Istvan Szilagyi
Department of Inorganic and Analytical Chemistry / Laboratory of Colloid and Surface Chemistry, University of Geneva, 30 quai Ernest Ansermet, CH-1205, Geneva, Switzerland

17:00 **Hollow PLGA particles for encapsulation and delivery of GLP-1 to overcome the limitations of solid particles** **K FII.6**
Sharad Kharel, Say Chye Joachim Loo
1. School of Materials Science and Engineering, Nanyang Technological University, Singapore : 1.School of Materials Science and Engineering, Nanyang Technological University, Singapore 2. Singapore Centre on Environmental Life Sciences Engineering (SCELSE), Nanyang Technological University, Singapore

17:00 **Investigating structure-function properties of biosystems by Advanced Scanning Probe Microscopy** **K FII.7**
Chiara Musumeci [a], Olle Inganäs [b].
[a] NUANCE Center, Northwestern University, 60208-3113 Evanston IL, USA. e-mail: chiara.musumeci@northwestern.edu, [b] Biomolecular and Organic Electronics, Department of Physics, Chemistry and Biology (IFM), Linköping University, 58183 Linköping, Sweden.

17:00 **A DNA Assay on a string – Optimisation of sensing** **K FII.11**
Loh Yue Yan Amelia, Nur Sabrina Wahid, Dr Tim Albrecht, Professor Tony Cass
Department of Chemistry, Imperial College London (similar for all authors)

Young Investigator Forum.

Keynote Session : Organizers/Chairs-Federico Zen, PhD Student, Trinity College Dublin, Dublin, Ireland & Valentine Blashchuk Bach D Student, TSN University of Kyiv, Kyiv, Ukraine . Supervisor Professor Dr. Manuela Schiek, University of Oldenburg, Germany

17:00 **The interaction and differentiation of human Neural Stem cells on oxygenated nanodiamonds** **K FII.1**
Alice C. Taylor, Citalali Gonzalez, Barbora Vagaska, Patrizia Ferretti, Richard B. Jackman
London Centre for Nanotechnology and Department of Electronic and Electrical and Engineering, University College London, 17-19 Gordon Street, London, WC1H 0AH, UK. UCL Great Ormond Street Institute of Child Health, 30 Guildford Street, London WC1N 1EH, UK

17:00 **Adipose (fat tissue)-derived stem cell-nanodiamond interactions for the development of differing cell types** **K FII.9**
Despoina Paschou, Sungmyung Kang, Alice Taylor, Patrizia Ferretti and Richard B. Jackman
London Centre for Nanotechnology and Department of Electronic and Electrical and Engineering, University College London, 17-19 Gordon Street, London, WC1H 0AH, UK, UCL Great Ormond Street Institute of Child Health, 30 Guildford Street, London WC1N 1EH

17:00 **Assembly of Sub-Compartmentalized Microreactors and Hepatocytes for Bionic Tissue Formation** **K FII.10**
Yan Zhang, Brigitte Städler.
iNANO Interdisciplinary Nanoscience Centre, Aarhus University, Denmark e-mail: yanzhang@inano.au.dk

Young Investigator Forum. Poster Session : Organizers/Chairs-Federico Zen, PhD Student, Trinity College Dublin, Dublin, Ireland & Valentine Blashchuk Bach D Student, TSN University of Kyiv, Kyiv, Ukraine . Supervisor Professor Dr. Manuela Schiek, University of Oldenburg, Germany

18:30 **A 3D model for bone tissue engineering** **K FPII.1**
Donata Iandolo[1], Magali Ferro,[1] Charalampos Pitsalidis,[1] Sahika Inal,[2] Adel Hama,[1] Roisin Owens [1]
[1] Department of Bioelectronics, Centre Microélectronique de Provence, Gardanne, France. [2] Biological and Environmental Science and Engineering Division, KAUST, Saudi Arabia.

18:30 **Artificial Organic Photoreceptors for Photo-Electrical Stimulation of Neuronal Cells** **K FPII.2**
Oliya S. Abdullaeva,(1) Frank Balzer,(2) Karim Habashy,(1) Matthias Schulz,(3) Jürgen Parisi,(1) Arne Lützen,(3), Karin Dedek,(1) Manuela Schiek.(1)
(1) University of Oldenburg, (2) University of Southern Denmark, (3) University of Bonn

18:30 **Fractionation of cellulose nanocrystals: from liquid crystal self-assembly to the formation of structural films** **K FPII.3**
Camila Honorato-Rios, Jan Lagerwall
University of Luxembourg, Physics & Materials Science Research Unit, Experimental Soft Matter Physics Group

18:30 **Bioinorganic active cellular matrices: Preparation, mechanical characterization and cellular behaviour** **K FPII.4**
O. Deschaume (1), Y. de Coene(1), J. Ye (2), C. Bartic (1)
(1) Soft matter Physics and Biophysics unit, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D - box 2416, 3001 Leuven, Belgium, olivier.deschaume@kuleuven.be, (2) School of Biomedical Engineering, Shanghai Jiao Tong University, 1954 Huashan Road, Shanghai, 200030, China

18:30 **Bioinorganic platelet/fiber multilayered architectures: Organization in suspended and dried states** **K FPII.5**
O. Deschaume (1), S. Abakumov (1-2), O. Korculanin (1-2), C. Bartic(1) and M. P. Lettinga (1-2)
(1) Soft matter Physics and Biophysics unit, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D - box 2416, 3001 Leuven, Belgium, olivier.deschaume@kuleuven.be, (2) Forschungszentrum Jülich, Institute of Complex Systems (ICS-3), 52425 Jülich, Germany

18:30 **Development of magnetically-modified electrospun chitosan-based nanocomposite fibrous mats and their bioapplications** **K FPII.6**
Ioanna Savva 1, Theodora Krasia-Christoforou 1, Ivo Safarik 2-3, Kristyna Pospiskova 3, Eva Baldikova 2
1 University of Cyprus, Department of Mechanical and Manufacturing Engineering, 75 Kallilopeos Avenue, P.O.Box 20537, 1678, Nicosia, CYPRUS, 2 Department of Nanobiotechnology, Biology Centre, ISB, CAS, Na Sadkach 7, 370 05 Ceske Budejovice, Czech Republic, 3 Regional Centre of Advanced Technologies and Materials, Palacky University, Slechtitelu 27, 783 71 Olomouc, Czech Republic, * Corresponding author's e-mail address: joan.savva@gmail.com

18:30 **Exploring the interaction of DNA nanostructures with lipid bilayers** **K FPII.7**
M. Paez-Perez, O. Ces, S. Howorka
Department of Chemistry - Imperial College London, Department of Chemistry - Imperial College London, Department of Chemistry - University College London

18:30 **On the design of low rigidity biocompatible Ti-xNb (0 < x< 35) alloys by density functional theory calculations** **K FPII.8**
Julio Gutierrez Moreno1-2, Dimitris G. Papageorgiou 2, Georgios A. Evangelakis 3, Christina E. Lekka 2
1 Tyndall National Instute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland 2 Department of Materials Science and Engineering, University of Ioannina, Ioannina, 45110 Greece 3 Department of Physics, University of Ioannina, Ioannina, 45110 Greece

18:30 **Multifunctional Graphene-wrapped ZnO Nanocarriers for Chemo-Photothermal/ Photodynamic Cancer Therapy in Vitro** **K FPII.9**
Nirmalya Tripathy, Rafiq Ahmad, Jeong Eun Song, Hyun Park, Gilson Khang
Department of BIN Fusion Technology, Department of PolymerNano Science & Polymer BIN Research Center, Chonbuk National University, 567 Baekje-daero, Deokjin-gu, Jeonju-si, Jeollabuk-do, 54896 Republic of Korea School of Semiconductor and Chemical Engineering, Nanomaterials Processing Research, Chonbuk National University, 567 Baekje-daero, Deokjin-gu, Jeonju-si, Jeollabuk-do, 54896 Republic of Korea

18:30 **Elaboration and characterization of bare laser-synthesized silicon for biomedical tasks** **K FPII.10**
A. Al-Kattan(1), Y. Raybchikov(1), T. Baati(1), M.-A. Estève(2), M. Sentis(1), D. Braguer(2) and A. V. Kabashin(1)
(1) Aix-Marseille Université, CNRS, LP3 UMR 7341, Campus de Luminy, 163 Avenue de Luminy, Case 917, 13288, Marseille Cedex 9. (2) Aix-Marseille Université, INSERM, CRO2 UMR 911, Faculté de Pharmacie, 13385, Marseille Cedex 5.

18:30 **Polyamidoamine hydrogels for innovative biomedical applications** **K FPII.11**
Leana Travaglini, Federica Fiorini, Giuseppe Alonci, Pietro Riva, Silvana Perretta, Luisa De Cola
Leana Travaglini, Federica Fiorini, Giuseppe Alonci, Luisa De Cola Université de Strasbourg, CNRS, ISIS UMR 7006, 8 allée Gaspard MongeF-67000 Strasbourg, France Luisa De Cola Institut fur Nanotechnologie (INT) - Building 640, Karlsruhe Institute of Technology (KIT) - Campus Nord, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany Pietro Riva, Silvana Perretta IHU Strasbourg, University Hospital of Strasbourg, Place de l?Hôpital 1, 67091 Strasbourg, France

18:30 **Silk/Cellulose Nanocrystal Nanocomposite Films with Enhanced Barrier Properties** **K FPII.12**
Hong Joo An, Na Rae Kim, Min Eui Lee, Hyeon Ji Yoon, Jun Ho Choe, Young Soo Yun, Hyoung-Joon Jin
Hong Joo An, Na Rae Kim, Min Eui Lee, Hyeon Ji Yoon, Jun Ho Choe, Hyoung-Joon Jin Department of Polymer Science and Engineering, Inha University, Incheon 402-751, Republic of Korea Young Soo Yun Department of Chemical Engineering, Kangwon National University, Samcheok 245-711, South Korea

18:30 **Photodynamic activity of erythrosin: from Langmuir monolayers toward oropharyngeal cancer (HEp-2) cells** **K FPII.13**
Bistaffa, M.J., Souza, P.S.S., Toledo, K.A., Aoki, P.H.B.
Faculdade de Ciencias e Letras, UNESP Univ Estadual Paulista, Assis, SP, Brazil 19806-900

18:30 **Cellulose nanocrystal/poly(butylene succinate) nanocomposites: Influences on their mechanical properties and biodegradation** **K FPII.14**
Hyeon Ji Yoon, Soo Min Jung, Hong Joo An, Jun Ho Choe, Na Rae Kim, Min Eui Lee, and Hyoung-Joon Jin*
Hyeon Ji Yoo, Soo Min Jung, Hong Joo An, Jun Ho Choe, Na Rae Kim, Min Eui Lee, Hyoung-Joon Jin* Department of Polymer Science and Engineering, Inha University, Incheon 402-751, Republic of Korea

18:30 **Structure, mechanical properties and tunable degradation of electrospun PCL/ PEG nanofibers** **K FPII.15**
L. Zajickova, E. Kedronova, V. Kupka, L. Vojtova, M. Michlicek, E. Tihlarikova, V. Nedela, J. Schafer
CEITEC Masaryk University, Brno, Czech Republic, CEITEC Masaryk University, Brno, Czech Republic, Brno University of Technology, Czech Republic, Brno University of Technology, Czech Republic, Masaryk University, Brno, Czech Republic, Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, INP Greifswald, Germany

18:30 **Bioinspired silica-enzyme nanocomposite as a robust biocatalyst for biomimetic CO2 sequestration** **K FPII.16**
Byung Hoon Jo, Jeong Hyun Seo, Yun Jung Yang, Kyungjoon Baek, Yoo Seong Choi, Seung Pil Pack, Sang Ho Oh, Hyung Joon Cha
Division of Life Science and Research Institute of Life Science, Gyeongsang National University, School of Chemical Engineering, Yeungnam University, Department of Chemical Engineering, POSTECH, Department of Materials Science and Engineering, POSTECH, Department of Chemical Engineering, Chungnam National University, Department of Biotechnology and Bioinformatics, Korea University, Department of Materials Science and Engineering, POSTECH, Department of Chemical Engineering, POSTECH

18:30 **Cell Specific Electrode Array on All Biomimicking Polymers toward Long Term Stable Electrical Interfacing** **K FPII.17**
Si-Hao Qian, Yong He, Bo Zhu
Si-Hao Qian, State Key Lab for Modification of Chemical Fibers and Polymer Materials& College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Yong He, Center for Aviation Composites, College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China.

18:30 **Superparamagnetic nanoparticles: Characterising motion and velocity through a viscous medium for in-vivo applications** **K FPII.18**
Stephen J. Lyons, Dermot Brougham, Aoife Morrin.
Stephen J. Lyons, School of Chemical Sciences, National Centre for Sensor Research, Dublin City University, Ireland, Dermot Brougham, School of Chemistry, University College Dublin, Aoife Morrin, School of Chemical Sciences, INSIGHT Centre for Data Analytics, National Centre for Sensor Research, Dublin City University, Ireland.

18:30 **Dynamic response of Ti-based metallic glasses under Brazilian disc** **K FPII.19**
Ping Hong Lin1, Liren Tsai1*,Shih-Han Wang2
1National Kaohsiung University of Applied Sciences, Department of Mechanical Engineering 2National Yunlin University of Science and Technology, Department of Chemical Engineering

18:30 **On demand Drug-Eluting, Cancer Cell-Repellent Multifunctional Stent** **K FPII.20**
Sori Lee, Gyoyeon Hwang, Haeleen Hong, Jiyeon Lee and Tae-il Kim
M.A.Sc. candidate in Biomedical Engineering Sungkyunkwan University (SKKU), School of Chemical Engineering Suwon 440-746, Korea Tel: +82 10 6819 4010 Email: lovelylsr@skku.edu

18:30 **Patterned CNT growth with BNCD coatings for applications in neuronal intra–cellular recording** **K FPII.21**
Sungmyung Kang, Alice C. Taylor, Richard B. Jackman
London Centre for Nanotechnology and Department of Electronic and Electrical and Engineering, University College London, 17-19 Gordon Street, London, WC1H 0AH, UK.

18:40 **Photonics of cysteine molecules: emission spectra in compare with calculations.** **K PII.12**
O.Ivanyuta 1, E.Gogotsi 2, O .Kysil 3, U.Ritter 4, P.Scharff 4 and E.Buzaneva 1
1 - Taras Shevchenko National University of Kyiv, Ukraine, 2- IPMS NAS of Ukraine, Kyiv, Ukraine, 3-Institute of Biohysics, NAS of Ukraine, Kyiv, Ukraine, 4- TU Ilmenau, Institut fur Chemie und Biotechnology,Ilmenau, Germany.

18:40 **Peptide photonic: Modulating Peptide Fluorescence Properties by Different Aggregates Morphology** **K PII.2**
Dr. Emanuela GATTO,1 Ilaria Iacoboni,1 Ian W. Hamley2 and Mariano Venanzi1
1 Department of Chemical Sciences and Technologies, University of Rome “Tor Vergata“, 00133 Rome, Italy, 2 Department of Chemistry, University of Reading, Whiteknights, Reading RG6 6AD, United Kingdom

18:40 **Smart lipid biointerfaces for the detection of a tumor biomarker** **K PII.3**
E. Gatto,a R. Lettieri,a A. Colella,a F. Leonelli,b L. Stella,a M. Venanzi.a
a Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata, Roma, Italy b Dipartimento di Biologia Ambientale, Università degli Studi di Roma La Sapienza, Roma, Italy

POSTER SESSION.
Smart stimuli responsive nanomaterials :
Chair: Dr. Emanuela Gatto, University of Rome Tor Vergata, Rome, Italy

18:40 **Self-Assembled Organic Nanofibers: Optical Properties and Local Surface Potential of Functionalized Para-Quaterphenylenes** **K FPII.1**
F. Balzer, A. Lützen, M. Schiek
Mads Clausen Institute, University of Southern Denmark, Alsion 2, DK-6400 Sønderborg, Denmark, Kekulé Institute for Organic Chemistry and Biochemistry, University of Bonn, Gerhard-Domagk-Str.1, D-53121 Bonn, Germany, Energy and Semiconductor Research Laboratory, Institute of Physics, University of Oldenburg, D-26111 Oldenburg, Germany

18:40 **Analyte trace biosensing** **K PII.5**
Neng Yu,Tony cass,Joshua Edel
department of chemistry, imperial college london

18:40 **Nanophotonics in natural photosynthesis** **K PII.6**
Antonio Capretti, Andrew Ringsmuth, Julian van Velsen, Roberta Croce and Tom Gregorkiewicz
University of Amsterdam, VU Amsterdam, University of Amsterdam, VU Amsterdam, University of Amsterdam

18:40 **Sensors based on nano-Si for rapid identification of nitrogen, sulfur and carbon compounds** **K PII.7**
Maria Vorobets, George Vorobets
Yuriy Fedkovych Chernivtsi National University

18:40 **Shaping bioinspired photo-responsive microstructures through the light-driven modulation of selective interactions** **K PII.8**
Marta De Zotti, Giulia Marafon, Alessandro Moretto, Emanuela Gatto
M. De Zotti, G. Marafon and A. Moretto: Department of Chemical Sciences, University of Padova, 35131 Padova, Italy, E. Gatto: Department of Chemical Sciences and Technologies, University of Rome “Tor Vergata”, 00133 Rome, Italy.

18:40 **Corrosion Behavior and Bioacivity of Titanium Foam Developed by Powder Metallurgy Route** **K PII.9**
D. Dutta Majumdar1, 3, D. P. Mondal2, M. Ghosh3, A. Roy Choudhury3, H. Rao, and J. Dutta Majumdar1
1Department of Metallurgical and Materials Engineering, Indian Institute of Technology, Kharagpur 721302, India. 2Advanced Materials and Processes Research Institute, Council of Scientific and Industrial Research, Bhopal 462064, India. 3Indian Institute of Engineering, Science, and Technology, Howrah, India

18:40 **Performance of Carbohydrate Thin Film Coatings for Biofouling Mitigation in the Marine Environment** **K PII.10**
Adam Myles, M. Daniela Angione, Leticia Esteban-Tejeda, Michelle Browne, Damien Haberlin, Thomas Doyle, Eoin M. Scanlan, Paula E. Colavita.
School of Chemistry , Trinity College Dublin, College Green, Dublin 2, Ireland, Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College Dublin, Advanced Materials and BioEngineering Research (AMBER), Trinity College Dublin, University College Cork – National University of Ireland, National University of Ireland Galway, NUIG,

18:40 **Inhibition studies of beta-amyloid fibril formation monitored by the aggregation-intrinsic visible florescence** **K PII.11**
Carlos Serpa,1 João Pina,1 Jana Janočková,2 Danijela Rostohar,3 Ondrej Soukup2
1CQC, Department of Chemistry, University of Coimbra, 3044-535 Coimbra, Portugal, 2University Hospital Hradec Kralove, Biomedical Research Center, Sokolska 581, Hradec Kralove 50005, Czech Republic, 3HiLASE Centre, Institute of Physics ASCR, Za Radnicí 828, 25241 Dolní Břežany, Czech Republic

III. Smart Interfacial Materials Fundamentals, Engineering & Control, Elucidate Cellular Response Functionality in Progress. Bionic. Bioelectronic. :
Organizer/Chair Professor Bo Zhu (Shanghai University, China)

08:45 **Tutorial Lecture. Smart Interfacial Materials from Super-Wettability to Binary Cooperative Complementary Systems** **K III.1**
Lei Jiang
Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China, School of Chemistry and Environment, Beihang University, Beijing 100191, China

09:25 **Keynote Lecture. Aqueous-based spinning of artificial animal silk using a biomimetic apparatus** **K III.2**
Yaopeng Zhang *, Qingfa Peng, Li Lu, Huili Shao, Kankan Qin, Xuechao Hu, Xiaoxia Xia*
Donghua University, Donghua University, Donghua University, Donghua University, Shanghai Jiao Tong University, Donghua University, Shanghai Jiao Tong University

09:50 **Keynote Lecture. The physiological polymerization and biomedical applications of functional hydrogel/nanogel** **K III.3**
Qigang Wang
Chemical Science and Engineering, Tongji University, Shanghai 200092, China

10:15 **Coffee break**

10:30 **Keynote Presentation. Strategies to manipulate the surface properties of poly(3 4-ethylenedioxythiophene) thin films for detection applications** **K III.4**
Po-Chun Huang, Jhih-Guang Wu, Yue Chen, Shyh-Chyang Luo
Department of Materials Science and Engineering, National Taiwan University

10:50 **Keynote Presentation. Bioinspired and Biocompatible Conducting Polymers toward Implantable Bioelectronics** **K III.5**
Si-hao Qian
Si-hao Qian, Qichao Pan, Yongjun Bian, Yaqiong Zhang, State Key Lab for Modification of Chemical Fibers and Polymer Materials & College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Yong He, Center for Aviation Composites, College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China

11:10 **Invited Presentation. Template-free Assembling of Bio-functionalized Poly(3,4-ethylenedioxythiophene) with Controllable Nanostructures and their Applications in Tumor Cell Capturing** **K III.6**
Zhi Geng , Qichao Pan, Zhengwei You, Bo Zhu
Zhi Geng , Qichao Pan, Zhengwei You, State Key Lab for Modification of Chemical Fibers and Polymer Materials& College of Materials Science and Engineering, Donghua University 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China ce and Engineering Shanghai University 99 Shangda Road, BaoShan, Shanghai, 200444, China E-mail: bozhu@shu.edu.cn

11:25 **Oral Presentation. Sacrificial hydrogen bonding enables tough and biodegradable bioelastomers with shape memory properties** **K III.7**
Shuo Chen, Lijie Sun, Zenghe Liu, Ziying Lv, Zhengwei You
State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University

11:35 **Oral Presentation. A conductive biomaterial: regenerated silk fibroin conductive film modified by poly(hydroxymethyl-3,4-ethylenedioxythiophene)** **K III.8**
Ao Zhuang, Yaopeng Zhang*
State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China

11:45 **Oral Presentation. Bioinspired synthesis of polydopamine@TATB core-shell microparticles with highly enhanced mechanical properties** **K III.9**
Congmei Lin, Feiyan Gong, Guansong He, Liping Pan, Shijun Liu
Institute of Chemical Material, China Academy of Engineering Physics

12:00 **Lunch. General Photo.**

13:00 **Keynote Lecture. Engineering Biointerface with Controlled Cell Adhesion** **K III.10**
Shutao Wang
CAS Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

13:30 **Keynote Lecture. Functional bioelastomers for biomedical applications** **K III.11**
Zhengwei You
State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University

13:55 **Keynote Presentation. Bio-inspired Design of Strong, Tough and Active Conductive Polymers** **K III.12**
Fengxian Gao, Wanwan Li, Xiaoqian Wang, Ning Zhang, Mingming Ma
CAS Key Laboratory of Soft Matter Chemistry, iChEM (Collaborative Innovation Center of Chemistry for Energy Materials), Department of Chemistry, University of Science and Technology of China, Hefei, 230026, China

14:15 **Keynote Presentation. Multi-phase interfacial reactions of the construction of functional hydrogels** **K III.13**
Mingjie Liu
Professor of Chemistry School of Chemistry Beihang University 37 Xueyuan Road, Beijing, P. R. China Tel: +86-10-82621396 Email: liumj@buaa.edu.cn

14:35 **Keynote Presentation. Low-fouling and functional poly(carboxybetaine) coating via a photo-crosslinking process** **K III.14**
Jiashing Yu, Hsiu-Wen Chien, Po-Hsiu Cheng, Shao-Yung Chen,Wei-Bor Tsai
National Taiwan University, Dept. of Chemical Engineering, Taipei, Taiwan R.O.C.

14:55 **Invited Presentation. Bioinspired and biomimicking organic bioelectronic materials** **K III.15**
Mo-Yuan Shen, Hsiao-hua Yu
Institute of Chemistry, Academia Sinica

15:10 **Oral Presentation. 3-Dimensional Conducting Platform toward Efficient and Selective Capture of CTCs** **K III.16**
Qi-Chao Pan, Ya-Qiong Zhang, Hai-Chao Zhao, Yao-Peng Zhang, Bo Zhu
Qi-Chao Pan, Ya-Qiong Zhang, Yao-Peng Zhang, State Key Lab for Modification of Chemical Fibers and Polymer Materials& College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Haichao Zhao, Ningbo Institute of Industrial Technology (CNITECH), Chinese Academy of Sciences, 1219 Zhongguan West Road, Zhenhai, Ningbo, Zhejiang, 315201, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China d Engineering Shanghai University 99 Shangda Road, BaoShan, Shanghai, 200444, China E-mail: bozhu@shu.edu.cn

15:20 **Oral Presentation. A Reversibly Electro-Switchable PEDOT Material toward On-Demand Drug Delivery** **K III.17**
Ya-Qiong Zhang, Gao Qiu, Bo ZHU
Ya-Qiong Zhang, Gao Qiu, State Key Lab for Modification of Chemical Fibers and Polymer Materials& College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China Professor, PHD College of Materials Science and Engineering Shanghai University 99 Shangda Road, BaoShan, Shanghai, 200444, China E-mail: bozhu@shu.edu.cn

15:30 **Oral Presentation. Hierarchical tissue engineering scaffold with a biomimetic vascular network based on 3D printing technology** **K III.18**
Dong Lei*, Binqian Yang*, Wenhui Gong**, Sen Li**, Xiaofeng Ye**, Zhengwei You*
*State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Shanghai 201620, P. R. China, email: zyou@dhu.edu.cn? **Department of Cardiac Surgery, Ruijin Hospital, Shanghai Jiaotong University School of Medicine, No.197, Ruijin Er Road, Shanghai, 200025, P.R. China

15:40 **Low-fouling and functional poly(carboxybetaine) coating via a photo-crosslinking process** **K PIII.9**
Hsiu-Wen Chiena, Po-Hsiu Cheng, Shao-Yung Chen, Jiashing Yu, Wei-Bor, Tsai
Department of Chemical Engineering National Taiwan University Taipei, Taiwan, R.O.C.
E-mail: jiayu@ntu.edu.tw

POSTER SESSION : Professor Bo Zhu (Shanghai University, China)

15:40 **Glucose Oxidase-mimicking, magnetic nanochain-supported gold nanoparticles for Colorimetric Biosensing** **K PIII.1**
Peng Wang †,*, and Hongwei Duan *
† Nanyang Environment and Water Research Institute (NEWRI), Nanyang Technological University, 1 Cleantech Loop, Singapore 637141 * School of Chemical and Biomedical Engineering, Nanyang Technological University, 70 Nanyang Drive, Singapore 637457

15:40 **Extracellular electron transfer from aerobic bacteria to Au-doped TiO2 nanotubes in the dark** **K PIII.8**
Guomin Wang (1), Hongqing Feng (1,2), Ang Gao (1), Weihong Jin (1), Qi Hao (1), Xiang Peng (1), Wan Li (1), Guosong Wu (1), Paul K Chu (1)
(1) Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China, (2) Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences and National Center for Nanoscience and Technology (NCNST), Beijing 100083, P. R. China

15:40 **Biomimetic Catalysis Based on Two-Dimensional Metalloporphyrinic Metal-Organic Framework Nanosheets and Their Hybrids** **K PIII.2**
Ying Huang, Hua Zhang
School of Materials Science and Engineering Nanyang Technological University 50 Nanyang Avenue, Singapore 639798, Singapore

15:40 **Material Strategies for Bending Applicable Tactile Sensor** **K PIII.3**
Ningqi Luo, Yan Huang, Ching-Ping Wong, Yuanting Zhang, and Ni Zhao
Department of Electronic Engineering, The Chinese University of Hong Kong, New Territories, Hong Kong SAR, China

15:40 **Cell Specific Electrode Array on All Biomimicking Polymers toward Long Term Stable Electrical Interfacing** **K PIII.4**
Si-Hao Qian, Yong He, Bo Zhu
Si-Hao Qian Donghua University PhD candidate State Key Lab for Modification of Chemical Fibers and Polymer Materials& College of Materials Science and Engineering Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China E-mail: sihaoseeker@gmail.com? Bo ZHU Shanghai University Professor, PHD College of Materials Science and Engineering Shanghai University 99 Shangda Road, BaoShan, Shanghai, 200444, China E-mail: bozhu@shu.edu.cn

15:40 **Assembly of Sub-Compartmentalized Microreactors and Hepatocytes for Bionic Tissue Formation** **K PIII.5**
Yan Zhang, Brigitte Städler.
iNANO Interdisciplinary Nanoscience Centre, Aarhus University, Denmark e-mail: yanzhang@inano.au.dk

15:40 **Systematic study of the bacteria killing process of magnesium-based biomaterials** **K PIII.6**
Guomin Wang (1), Hongqing Feng (1, 2), Weihong Jin (1), Xuming Zhang (1), Yifan Huang (1), Ang Gao (1), Hao Wu (1), Guosong Wu (1), and Paul K. Chu (1)
(1) Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China, (2) Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences and National Center for Nanoscience and Technology (NCNST), Beijing 100083, P. R. China

15:40 **Thermoformed platform with thin-film electronics for soft and smart contact lens applications** **K PIII.7**
Andrés Vásquez Quintero, Rik Verplancke, Herbert De Smet, Jan Vanfleteren
Centre for Microsystems Technology (CMST), imec and Ghent University, Technologiepark 15, 9052 Gent, Belgium

16:15 **PLENARY SESSION**

IV. New Frontiers in Nanocarbons: 2D Materials, 3D Architecture Structures, Polycrystalline Graphene & Bio (synthesized, printed, immobilized, integrated) Nanocarbons Multifunctionality.

Keynote Session. : Organizers/Chairs Dr. Nikos G. Tsierkezos (TU Ilmenau, Germany), Dr. Oleksand Ivanyuta (TSN University of Kyiv, Ukraine) and Professor Silvia Giordani (University of Turin, IIT, Genova, Italy, COST Action CA 15107 WG3 Chief)

08:30 **3D Structured Diamond Electrodes: from Fabrication to Application** **K IV.1**
Fang Gao 1, Christoph E. Nebel 2
1. Max Planck Institute of Microstructure Physics, Weinberg 2, 06120 Halle, Germany, 2. Fraunhofer Institute for Applied Solid State Physics, Tullastrasse 72, 79108 Freiburg, Germany

08:50 **Charge transport in polycrystalline graphene** **K IV.2**
Aron W. Cummings, Stephan Roche
Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, 08193 Barcelona, Spain ICREA - Institució Catalana de Recerca i Estudis Avançats, 08010 Barcelona, Spain

09:05 **Composition dependent properties of graphene (oxide)-alginate biopolymer nanocomposites** **K IV.3**
a,d Karolis Vilcinskas, b Kaspar M.B. Jansen, a Fokko M. Mulder,a Ger J.M. Koper, a Ben Norder, c Jure Zlopasa, a Stephen J. Picken
a Department of Chemical Engineering, Delft University of Technology, Delft, The Netherlands, b Faculty of Industrial Design Engineering, Delft University of Technology, Delft, The Netherlands, c Department of Biotechnology, Delft University of Technology, Delft, The Netherlands, d current address: KTP Associate - Polymer Engineering at University of Bradford/BNL Bearings, United Kingdom

09:20 **Fullerene and pillar[5]arene scaffolds for the preparation of bioactive multifunctional compounds** **K IV.4**
Jean-François Nierengarten
Laboratoire de Chimie des Matériaux Moléculaires, Université de Strasbourg et CNRS (UMR 7509), ECPM, 25 rue Becquerel, 67087 Strasbourg, France

09:35 **Nanocarbons for Optoelectronic Applications** **K IV.5**
Dirk M. Guldi
University of Erlangen

09:50 **Fullerenes, a versatile class of polymer additives – from solar cells to power cables** **K IV.6**
Christian Müller
Department of Chemistry and Chemical Engineering,Chalmers University of Technology, 41296 Göteborg, Sweden

10:10 **Coffee Break. General Photo**

10:30 **Graphene Oxide Nanosheets Reshape Synaptic Function in Brain Networks** **K IV.7**
Rossana Rauti†, Neus Lozano§, Veronica León ‡, Denis Scaini†,#, Mattia Musto ø, Ilaria Rago#, Francesco P. Ulloa Severino ø , Alessandra Fabbro□, Loredana Casalis#, Ester Vázquez‡, Kostas Kostarelos§, Maurizio Prato□&¥* and Laura Ballerinio*
†Life Science Department, University of Trieste, 34127 Trieste, Italy §Nanomedicine Lab, School of Medicine and National Graphene Institute, Faculty of Medical & Human Sciences, University of Manchester, M13 9PL Manchester, United Kingdom ‡Departamento de Química Orgánica, Facultad de Ciencias y Tecnologías Químicas-IRICA Universidad de Castilla La-Mancha, 13071 Ciudad Real, Spain #ELETTRA Synchrotron Light Source, 34149 Trieste, Italy øInternational School for Advanced Studies (SISSA), 34136 Trieste, Italy □Department of Chemical and Pharmaceutical Sciences, University of Trieste, 34127 Trieste, Italy &CIC BiomaGUNE, Parque Tecnológico de San Sebastián, Paseo Miramón, 182, 20009 San Sebastián (Guipúzcoa), Spain ¥Basque Foundation for Science, Ikerbasque, Bilbao 48013, Spain

10:50 **In vivo detection of single-walled carbon nanotubes: progress and challenges** **K IV.8**
Ching-Wei Lin, R. B. Weisman
Department of Chemistry & the Smalley–Curl Institute, Rice University, Houston, TX 77005, USA

11:00 **Carbon nanotubes in biosensorics: electrochemical analysis of biomolecules on nitrogen doped multi-walled carbon nanotubes decorated with metal nanoparticles** **K IV.9**
Dr. Nikos G. Tsierkezos
Institute of Chemistry and Biotechnology, Ilmenau University of Technology, Weimarer Straße 25, 98693 Ilmenau, Germany

Keynote Presentations of Investigators for The COST Action CA 15107 MultiComp, The Working Group WG 3&#8221
: Professor Silvia Giordani (University of Turin, IIT, Genova, Italy, COST Action CA 15107 WG3 Chief)

11:20 **Functionalized Carbon Nano-Onions as Imaging Probes for Cancer Cells** **K IV.10**
Professor Silvia Giordani Associate Professor of Organic Chemistry Founder of the Nano Carbon Materials Laboratory Working Group Leader of the COST Action CA 15107 “Multi-Functional Nano-Carbon Composite Materials Network (MultiComp)”
1 Department of Chemistry, Università di Torino, via Giuria 7, 10125, Turin, Italy s.giordani@unito.it, 2 Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genoa, Italy silvia.giordani@iit.it

11:45 **Nanomaterials for therapy of redox diseases** **K IV.11**
Gina MANDA, Silvia GIORDANI
Victor Babes National Institute of Pathology, Radiobiology Department, 99-101 Splaiul Independentei, 050096 Bucharest, Romania, gina.manda@gmail.com, Istituto Italiano di Tecnologia (IIT), Nano Carbon Materials, Nanophysics Department, Via Morego 30, 16163 Genova, Italy, silvia.giordani@iit.it

12:00 **In vivo toxicity and biodistribution of fluorescent labelled carbon nano-onions in a vertebrate model** **K IV.12**
Marta d?Amoraa, Sefania Lettierib, Adalberto Camisascab, Alberto Diasproa,c, Silvia Giordanib,d
a Nanoscopy, Nanophysics, Istituto Italiano di Tecnologia, Via Morego 30, Genoa, 16163, Italy b Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Morego 30, 16163, Genoa, Italy c NIC@IIT, Istituto Italiano di Tecnologia, Via Morego 30, 16163, Genoa, Italy d Chemistry Department, Università di Torino, via Giuria 7, 10125, Torino, Italy

12:15 **Far-Red Fluorescent Carbon Nano-Onions For Cellular Imaging** **K IV.13**
S. Lettieri (1), A. Camisasca (1), M. d’Amora (3), A. Diaspro (3), S. Giordani (1,2)
1 Nano Carbon Materials, Istituto Italiano di Tecnologia (IIT), via Morego 30, 16163, Genoa, Italy 2 Chemistry Department, Università di Torino, via Giuria 7, 10125, Turin, Italy 3 Nanoscopy, Istituto Italiano di Tecnologia (IIT), via Morego 30, 16163, Genoa, Italy

12:30 **Lunch**

V. Frontier Nanomaterials: Inorganic, Organic & Bio (synthesized, immobilized, integrated) Nanoparticles :

Keynote Session Chairs: Dr. Thomas Werzer, Dr. Nanasahed D.Thorat and Professor Reshef Tenne

13:30 **Keynote Lecture. Professor Reshef Tenne. Inorganic nanotubes and fullerene-like structures: from fundamental to applications** **K V.1**
Professor Reshef Tenne
Department of Materials and Interfaces, Weizmann Institute, Rehovot 76100, Israel

14:00 **Enrichment of thin film based controlled release platforms with Dopamine nanoparticles** **K V.2**
Celine Muller, Julien Barthes, Vincent Ball, Nihal Engin Vrana
PROTIP Medical - 8, Place de l&#8217,Hôpital - 67000 Strasbourg - France

14:15 **Homing-target nanoporous silicon nanoparticles for myocardium infarcted therapy** **K V.3**
Dr. Hélder A. SANTOS1 co-authors: Mónica P. A. Ferreira1, Sanjeev Ranjan2, Alexandra M. R. Correia1, Ermei M. Mäkilä3, Hongbo Zhang1, 5, Jarno J. Salonen3, Heikki J. Ruskoaho4, Anu J. Airaksinen2, Jouni T. Hirvonen1,
1 Division of Pharmaceutical Chemistry and Technology, Faculty of Pharmacy, University of Helsinki, Helsinki, Finland (http://www.helsinki.fi/~hsantos/) 2 Laboratory of Radiochemistry, Department of Chemistry, University of Helsinki, Helsinki, Finland 3 Laboratory of Industrial Physics, Department of Physics and Astronomy, University of Turku, Finland 4 Division of Pharmacology and Pharmacotherapy, Faculty of Pharmacy, University of Helsinki, Finland 5 School of Applied Science and Engineering, Harvard University, 02138, Cambridge MA, USA

14:30 **Self-assembled ordered silica nanostructures for delivery of theranostic cargos in colon cancer** **K V.4**
Nanasaheb D. Thorat1 , Mohamed Radzi Noor2 , Tewfik Soulimane2and Syed A.M. Tofail1
1 Department of Physics & Energy, Bernal Institute, University of Limerick, Limerick, Ireland 2Chemical & Environmental Sciences Department, University of Limerick, Limerick, Ireland

14:45 **Hybrid Cobalt Zinc ferrite nanoparticles: In vitro mediator for potential cancer Theranostics** **K V.5**
Raghvendra A Bohara*1,2 Nanasaheb D. Thorat ,3 and Shivaji H. Pawar2
1 Research and Innovations Centre for comprehensive health care Interdisciplinary Research, D.Y. Patil University, Kolhapur, India 2Centre for Interdisciplinary Research D.Y. Patil University, Kolhapur, India 3 Department of Physics & Energy, University of Limerick, Limerick, Ireland

15:00 **Electrochemical tuning of the orientation of surface layer proteins on gold: an in situ study** **K V.6**
Thomas Werzer, Christian Zafiu, Tristan Oliver Nagy, Günter Trettenhahn, Uwe Bernd Sleytr, Wolfgang Kautek
University of Vienna, Department of Physical Chemistry, A-1090 Vienna, Austria, Forschungszentrum Jülich, Institute of Complex Systems, D-52428 Jülich, Germany, University of Vienna, Department of Physical Chemistry, A-1090 Vienna, Austria, University of Vienna, Department of Physical Chemistry, A-1090 Vienna, Austria, University of Natural Resources and Life Sciences, NanoBioTechnology, A-1190 Vienna, Austria, University of Vienna, Department of Physical Chemistry, A-1090 Vienna, Austria

15:15 **Gold nanostar polymer based particles for photothermal therapy** **K V.7**
C. Joyce (1), T. K. Georgiou (2), F. Xie (2)
(1) Department of Chemistry, Imperial College London, SW72AZ, London, UK (2) Department of Materials, Imperial College London, SW72AZ, London, UK

15:30 **Gold nanoparticles for non-invasive cell tracking** **K V.8**
Rinat Meir, Katerina Shamalov, Oshra Betzer, Cyrille Cohen and Rachela Popovtzer
Faculty of Engineering Bar-Ilan University Israel

15:45 **Coffee Break. General Photo**

16:00 **Development of silica-coated magnetic nanoparticles with controllable pore sizes for drug delivery and magnetic resonance imagin** **K V.9**
Marta Laranjeira, Fernando Jorge Monteiro
1- i3S- Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal
2- INEB- Instituto de Engenharia Biomédica, Divisão de Biomateriais, Universidade do Porto 3- Faculdade de Engenharia, DEMM, Universidade do Porto, Portugal

16:10 **Magneto-photothermal effects of pegylated superparamagnetic iron-oxide nanoparticles for multimodal cancer therapy** **K V.10**
Saqlain A Shah*, MU Aslam Khan, MU Hashmi, K Javed, M Naeem, M Arshad
Department of Physics, Forman Christian College (University) Lahore Paksitan Materials Science & Engineering, University of Washington, Seattle WA, USA Polymer Engineering & Technology, University of the Punjab, Lahore Pakistan Department of Applied Sciences, Superior University, Lahore Pakistan Department of Physics, International Islamic University, Islamabad Pakistan Nanoscience division, National Center for Physics, Islamabad Pakistan

16:20 **Functionalization of electropsun hybrid nanofibers based-on chitosan(PEO) by bare laser synthesized Au and Si nanoparticles** **K V.11**
A. Al-Kattan(1), V. P. Nirwan(2), E. Munnier(3), I. Chourpa(3), A. Fahmi(2) and A. V. Kabashin(1)
(1) Aix-Marseille University, CNRS, LP3 UMR 7341, Campus de Luminy, Case 917, 13288, Marseille cedex 9, France. (2) Rhine-Waal University of Applied Sciences, Faculty of Technology and Bionics, Marie-Curie Strase 1, 47533 Kleve, Germany. (3) François-Rabelais University, E.A. 6295 “Nanomedicaments et Nanosondes”, 37200 Tours, France.

16:30 **Synthesis of silver nanoparticles via Zingiber officinale extract in comparison to Fluconazole antifungal drug** **K V.12**
Mohsen Mohammadi, sabrieh Assadi Shahi saraee, Atiyeh Tavajjohi, Reza Poursalehi, Samad Mohammadnezgad, Hamid Delavari H
Nanostructures Lab, Department of Materials Engineering, Tarbiat Modares University, P.O. Box 14115-143, Tehran, Iran, Department of Medical Mycology, Tarbiat Modares University, P.O. Box 14115-331, Tehran, Iran, Department of Biology, Islamic Azad University of Shahr Rey, Tehran, Iran, Department of Materials Engineering, Tarbiat Modares University, P.O. Box 14115-143, Tehran, Iran, Biomolecular Image Analysis Group, Research Center for Molecular and Cellular Imaging, Tehran University of Medical Sciences, Tehran, Iran, Department of Materials Engineering, Tarbiat Modares University, P.O. Box 14115-143, Tehran, Iran

16:40 **Genetically Engineered Fluorescent Silica Binding Bifunctional Proteins-Made Bio-Dot Nanoparticles** **K V.13**
Tolga Tarkan Olmez, Esra Yuca, Erol Eyupoglu, Hazal Beril Catalak, Ozgur Sahin, Urartu O. S. Seker
Tolga Tarkan Olmez, Dr. Esra Yuca, Hazal Beril Catalak, Prof. Ozgur Sahin, Prof. Urartu O. S. Seker, UNAM-National Nanotechnology Research Center, Institute of Materials Science and Nanotechnology, 06800, Bilkent University, Ankara, Turkey Dr. Esra Yuca, Department of Molecular Biology and Genetics, Faculty of Arts and Science, Yildiz Technical University, Istanbul, Turkey Erol Eyupoglu, Prof. Ozgur Sahin, Department of Molecular Biology and Genetics, Faculty of Science, 06800 Bilkent University, Ankara

16:50 **Synthetic virus-like nanoparticles assembled via protein corona formation enable effective antiviral vaccination** **K V.14**
Hui-Wen Chen, Chen-Yu Huang, Shu-Yi Lin, Zih-Syun Fang, Chen-Hsuan Hsu, Jung-Chen Lin, Yuan-I Chen, Bing-Yu Yao, Che-Ming J. Hu
Department of Veterinary Medicine, National Taiwan University, Taipei, Taiwan, Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan, Research Center for Nanotechnology and Infectious Diseases, Taipei, Taiwan

17:00 **Design of hybrid nanomaterial with significant superoxide dismutase activity** **K V.15**
Marko Pavlovic, Paul Rouster and Istvan Szilagyi
Department of Inorganic and Analytical Chemistry, University of Geneva, 30 Quai Ernest-Ansermet, CH-1205 Geneva, Switzerland.

17:10 **Regenerative electroless etching of silicon for biosensing and biomedical applications** **K V.16**
Jarno Salonen1, Nathan J. Gimbar2, Haibo Yu3, Mark Aindow3, Ermei Mäkilä1 and Kurt W. Kolasinski2
1 Department of Physics and Astronomy, University of Turku, FI-20014 Turku, Finland, 2 Department of Chemistry, West Chester University, West Chester, PA 19383 USA, 3 Department of Materials Science, University of Connecticut, Storrs, CT USA

17:20 **Processing and Characterization of PHBV/BN Composites** **K KV.17**
Mualla Öner1, Gülnur Kizil1 , Gülsah Keskin1, Melike Şatıroğlu1, Rabia Seydioğlu1 , Celine Pochat2, Mikhael Bechelany2
1 Yildiz Technical University Chemical-Metallurgical Faculty, Chemical Engineering Department, Istanbul, Turkey 2 Institut Européen des Membranes, UMR 5635 ENSCM UM CNRS, Université Montpellier, Montpellier, France

POSTER SESSION. NEW FRONTIERS IN NANOCARBONS :
Chairs Dr. Nikos Tsierkezos (TU Ilmenau, Germany) and Dr. Oleksandr Ivanyuta (TSN University of Kyiv, Ukraine)

17:30 **Modelling, design and optical testing of immobilized carbon nanotubes by metal complexes for protein amino acids recognition** **K PIV.1**
Ivanyuta O., Kysil O.(1), Tsierkezos N. (2), Ritter U. (2), Scharff P.(2), Buzaneva E.(1)
(1)TSN University of Kyiv, Volodymyrska str. 64, 01601 Kyiv,Ukraine,
(2)TU of Ilmenau, Institute for Chemistry and Biotechnology, 98684 Ilmenau, Germany

17:30 **Fabrication and Characterization of Biomass-based Anti-microbial Carbon Composite Dressing for Wound Treatment** **K PIV.2**
Oh Hyeong Kwon1, Seo Hee Han1, Young-Gwang Ko1, Donghwan Cho1, Won Ho Park2, Won Il Kim3
1Kumoh National Institute of Technology, 2Chungnam National University, 3Wonbiogen Co., Ltd.

17:30 **Novel biomimetic nanocomposite based on nanohydroxyapatite/ multiwalled superhydrophilic carbon nanotubes/polymeric fibers produ** **K PIV.3**
P. O. Andrade 1, M. A. V. M. Grinet 2, A. M. E. Santo 1, E. J. Corat 3, MM. M. Costa 2, A. O. Lobo 2
1 Federal University of Sao Paulo (UNIFESP), Department of Science and Technology, Sao Jose dos Campos, SP, Brazil, 2 University of Vale do Paraiba (Univap), Institute of Research and Development (IP&D), Sao Jose dos Campos, SP, Brazil, 3 National Institute for Space Research (INPE-LAS), Sao Jose dos Campos, SP, Brazil.

17:30 **GRAPHENE-BASED ELECTROCHEMICAL BIOSENSORS FOR DETECTION OF AMINO ACIDS** **K PIV.4**
H. HAKAN GÜREL, B. SALMANKURT
Kocaeli University, Technology Faculty, Department of Information Systems Engineering, Kocaeli,Sakarya University, Department of Physics, Sakarya,

17:30 **DESIGN OF THIOPHEN-BASED WATER-SOLUBLE FULLERENE DERIVATIVES AND THEIR ANTIVIRAL PROPERTIES** **K PIV.5**

O. A. Kraevaya (1), A. S. Peregudov (2), S. I. Troyanov (3), A. A. Kushch (4), D. Schols (5), P. A. Troshin (6,1)
(1) Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov ave 1, Chernogolovka, Moscow region, 142432, Russia, (2) A. N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences, 1 Vavylova st. 28, B-334, Moscow, 119991, Russia, (3) Moscow State University, Department of Chemistry, Leninskie gory 1, Moscow, 119991, Russia, (4) Honored Academician N.F. Gamaleya Federal Research Center for Epidemiologyand Microbiology of the Ministry of Health of the Russian Federation, Gamaleya st. 18, 123098, Moscow, Russia, (5) Rega Institute for Medical Research, Minderbroedersstraat 10, B-3000, Leuven, Belgium, (6) Skolkovo Institute of Science and Technology, Nobel St. 3, Moscow, 143026, Russia

17:30 **Addressing the Central Nervous System with Carbon Nano-Onions Preserve the Electric Conductivity and Brain Functions in Mice** **K PIV.6**

Massimo Trusel,a, Michele Baldrighi,b, Roberto Marotta,c, Marco Frasconi,b,Tiziano Catelani,c, Raffaella Tonini,a, and Silvia Giordani,b,d
a) Neuroscience and Brain Technology, Istituto Italiano di Tecnologia, via Morego 30 – 16163 Genova, Italy b) Nano Carbon Materials, Istituto Italiano di Tecnologia, via Morego 30 – 16163 Genova, Italy c) Electron Microscopy Laboratory, Istituto Italiano di Tecnologia, via Morego 30 – 16163 Genova, Italy d) Chemistry Department, Università di Torino, via Giuria 7, 10125, Turin, Italy

17:30 **Pillared Graphene Oxide by Means of Rigid 3D Organic Spacers** **K PIV.7**

Francisco Morales-Lara(a,b), Jinhua Sun(c), Francesca Cardano(a), Michele Baldrighi(a), Francisco Palazon(d), Alexandr Talyzin(c), Marco Frasconi(e) and Silvia Giordani(a,f). e-mail: silvia.giordani@iit.it
(a) Nano Carbon Materials, Istituto Italiano di Tecnologia (IIT), via Morego, 30, 16163, Genoa, Italy. (b) Graphene Labs, Istituto Italiano di Tecnologia (IIT), via Morego, 30, 16163, Genoa, Italy. (c) Department of Physics, Umeå universitet, Linnaeus väg, 24, 901 87, Umeå, Sweeden. (d) Nanochemistry, Istituto Italiano di Tecnologia (IIT), via Morego, 30, 16163, Genoa, Italy. (e) Department of Chemical Sciencies, University of Padova, via Marzolo, 1, 35122, Padova, Italy. (f) Chemistry Department, Università di Torino, via Giuria, 7, 10125, Turin, Italy.

17:40 **Selection of novel TiO2-binding peptide using phage-display and direct electroporation of phage-TiO2-nanoparticle complexes** **K PV.11**

Ippei Inoue (1), Yasuaki Ishikawa (2), Yukiharu Uraoka (2), Ichiro Yamashita (2), Hisashi Yasueda (1)
(1) Frontier Research Labs., Institute for Innovation, Ajinomoto Co., Inc., (2) Graduate School of Materials Science, Nara Institute of Science and Technology

17:40 **The use of boron nitride reinforcements in PHBV: Investigation of oxygen barrier, thermal and mechanical properties** **K PV.2**

Mualla Öner1, Gülnur Kizil1 , Gülsah Keskin1, Melike Şatıroğlu1, Rabia Seydioğlu1 , Celine Pochat2, Mikhael Bechelany2
1 Yildiz Technical University Chemical-Metallurgical Faculty, Chemical Engineering Department, Istanbul, Turkey 2 Institut Européen des Membranes, UMR 5635 ENSCM UM CNRS, Université Montpellier, Montpellier, France

17:40 **Biocomposites based on crosslinked chitosan for encapsulation of polyphenols** **K PV.3**

Cornelia Nichita1,2, Adriana Balan1, Faisal Al-Behadili1 and Ioan Stamatin1
Cornelia Nichita1,2, Adriana Balan1, Faisal Al-Behadili1 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 Vitan Street, 031299, Bucharest, Romania, e-mail: cornelianichita@yahoo.com

17:40 **Design of Nano biohybrids based on silver nanoparticles and herbal extacts** **K PV.4**

Cornelia Nichita1,2, Georgeta Neagu2, Adriana Balan1 , Ana Cucu1 , Catalin Ceaus1 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 Vitan Avenue, 031299, Bucharest, Romania, e-mail: cornelianichita@yahoo.com

17:40 **Induced chirality of phenylene-based conjugated polymers complexed with polysaccharides** **K PV.5**

Prakash Manandhar and Joong Ho Moon*
Department of Chemistry & Biochemistry, Florida International University, Miami, Florida 33199, United States

17:40 **Design of smart anisotropic magnetic nano-objects towards an image-guided therapy** **K PV.6**

Geoffrey Cotin 1, Cristina Blanco Andujar 1, Catalina Bordeianu 1, Damien Mertz 1, Florent Meyer 2, D. Felder-Flesch 1 and Sylvie. Begin-Colin 1
1 Institut de Physique et Chimie des Matériaux, UMR 7504, CNRS- University of Strasbourg, 23 Rue du Loess, BP 43, 67034 Strasbourg, France 2 INSERM, UMR 1121, 11 rue Humann, 67085 Strasbourg, France

17:40 **Characterization of β-TCP synthesized by a novel wet polymeric precipitation method** **K PV.7**

I. Bogdanoviciene 1, I. Grigoraviciute-Puroniene 1, K. Tsuru 2, E. Garskaite 1, Z. Stankeviciute 1, A. Beganskiene 1, K. Ishikawa 2, A. Kareiva 1
1 Institute of Chemistry, Vilnius University, Naugarduko 24, Vilnius LT-03225, Lithuania, 2 Department of Biomaterials, Faculty of Dental Science, Kyushu University 3-1-1, Maidashi, Higashi-ku, Fukuoka 812-8582 Japan

17:40 **Bactericidal Activity of Poly(arginine)/Hyaluronan Coatings** **K PV.8**

Angela Mutschler, Nihal Engin Vrana, Pierre Schaaf, Philippe Lavalle
Institut National de la Santé et de la Recherche Médicale INSERM, Biomaterials and Bioengineering Laboratory, 11 rue Humann, 67085 Strasbourg, France

17:40 **Antibacterial Effects of Titanate Nanosheets** **K PV.9**

Eri Yoshida1, Takeshi Nagayasu1, Fernando Jorge Monteiro2,3,4, Kai Kamada5
1Graduate School of Biomedical Sciences, Nagasaki University, Japan, 2i3S - Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal, 3INEB - Instituto de Engenharia Biomédica, Divisão de Biomateriais, Universidade do Porto, Portugal, 4Faculdade de Engenharia, DEMM, Universidade do Porto, Portugal, 5Graduate School of Engineering, Nagasaki University, Japan

17:40 **Incorporation of silane modified and ultrasound dispersed ZnO particles into PHBV matrix** **K PV.10**

Tuğçe Bekat, Mualla Öner
Department of Chemical Engineering, Yildiz Technical University, 34210 Istanbul, Turkey

POSTER SESSION.
Frontiers Multifunctional Nanomaterias :
Chairs :Dr.Thomas Werzer and Dr. Nanasahed D.Thorat

17:40 **Pif80, a nacreous protein of pearl oyster, for calcium carbonate biomineralization** **K PV.1**

So Yeong Bahn1, Byung Hoon Jo2, Yoo Seong Choi3*, and Hyung Joon Cha1*
1Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, 37673, Korea, 2Division of Life Science and Research Institute of Life Science, Gyeongsang National University, Jinju, 52828, Korea, 3Department of Chemical Engineering and Applied Chemistry, Chungnam National University, Daejeon, 34134, Korea

17:40 **Self-Assembled Systems for Designing Supramolecular Chiral Peptide Amphiphile Nanostructures** **K PV.12**

Meryem Hatip, Mustafa O. Guler and Aykutlu DÂNÂ
Institute of Materials Science and Nanotechnology, National Nanotechnology Research Center (UNAM), Bilkent University, Ankara, TURKEY, 06800

VI. Nanomaterials , Nanodevices & Bioimaging for Nanomedicine Collaborative Session.
Keynote Presenters from Taiwan, Japan & Switzerland. :
Organizer/Chair: Dr. Peilin Chen (Academia Sinica, Taiwan)

08:30 **Keynote Introduction. Nanodevices & Bioimaging for Nanomedicine. Dr. Peilin Chen** — **K VI.1**
Peilin Chen
Research Center for Applied Sciences, Academia Sincia, Taiwan

08:45 **Keynote Lecture. X-ray imaging of nanoparticles** — **K VI.2**
Chi-Feng Huang*, Ting-Kuo Lee*, Peilin Chen**, Yu-Fang Hu***, Keng S. Liang* and Y. Hwu*
* Institute of Physics, Academia Sinica, Taipei 115, Taiwan ** Research Center for Applied Sciences, Academia Sinica, Taipei 115, Taiwan *** TTY Biopharm Co., Ltd, Taipei 115, Taiwan

09:15 **Keynote Presentation. Iron containing functional nanomaterials for integrated diagnostics and therapeutics of cancer and infectious diseases** — **K VI.3**
Dar-Bin Shieh, Wei-Ting Lee, Tsung-Ju Li, Li-Xing Yang, Shang-Rung Wu, Chen-Sheng Yeh, Pei-Jane Tsai
National Cheng Kung University, Tainan, Taiwan

09:45 **Keynote Presentation. Interfacing nanocarriers with cellular membranes for biomedical applications and biomimetic drug delivery** — **K VI.4**
Che-Ming Jack Hu
Institute of Biomedical Sciences, Academia Sinica, Taiwan

10:05 **Invited Presentation. Organic electrochemical transistor-based swimming pools for circulating tumor cell isolation and detection** — **K VI.5**
Yu-Sheng Hsiao1, Peilin Chen2
1Department of Materials Engineering, Ming Chi University of Technology, 2Research Center for Applied Sciences, Academia Sinica

10:20 **Coffee break**

10:30 **Keynote Presentation. Genetic engineering of functional polypeptides for designing biologically-active materials** — **K VI.6**
Koichi Kato
Department of Biomaterials, Institute of Biomedical & Health Sciences, Hiroshima University

10:50 **Keynote Presentation. Modified naphthalene diimide as a suitable tetraplex DNA ligand: Application to cancer diagnosis and anti-cancer drug** — **K VI.7**
Shigeori Takenaka
Department of Applied Chemistry?Center for Bio-microsensing Technology, Kyushu Institute of Technology

11:10 **Keynote Presentation. TiO2-assisted photocatalytic lithography: Applications in patterning neuronal cells and networks** — **K VI.8**
Hideaki Yamamoto1, Sho Kono2, Syoi Fujishiro2, Kohei Furusawa2, Takashi Tanii2, Michio Niwano3, Ayumi Hirano-Iwata4,3
1: Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan. 2: Graduate School of Fundamental Science and Engineering, Waseda University, Japan. 3: Research Institute of Electrical Communication, Tohoku University, Japan. 4: Advanced Institute for Materials Research, Tohoku University, Japan.

11:30 **Invited Presentation. Critical Considerations for Enhanced Permeability and Retention (EPR)-targeted Mesoporous Silica Nanoparticles** — **K VI.9**
Si-Han Wu
Graduate Institute of Nanomedicine and Medical Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei 11031, Taiwan

11:45 **Invited Presentation. Underestimated role of perinuclear stress fibers in mechanotransduction as revealed by nanopillar force measurements** — **K VI.10**
Jau-Ye Shiu
Laboratory of Applied Mechanobiology, Department of Health Sciences and Technology, ETH Zurich, 8093 Zurich, Switzerland

12:00 **Invited Presentation. Mesoporous Silica Nanoparticles-Mediated Denatured Protein Delivery: Study Focusing on the Mechanism** — **K VI.11**
Yi-Ping Chen
Graduate Institute of Nanomedicine and Medical Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei 110, Taiwan

12:15 **Invited Presentation. Imaging Circulating Tumor Cells** — **K VI.12**
Chiung-Wen Kuo, Di-Yen Chueh , and Peilin Chen
Research Center for Applied Sciences, Academia Sinica, Taiwan

12:30 **Lunch**

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM L

New materials for organic electronics: from synthesis to processing, characterization and device physics

Symposium Organizers :

Christian MÜLLER, Chalmers University of Technology, Göteborg, Sweden

Elizabeth VON HAUFF, VU Amsterdam, The Netherlands

Mario CAIRONI, Istituto Italiano di Tecnologia, Milano, Italy

Michael SOMMER, University of Freiburg, Germany

Invited contributions only to be published in Advanced Electronic Materials (Wiley)

Monday 22 May 2017

Structure Property ReL ationships I :
Enrique Gomez, Enrico Da Como, Artem BakuL in, Mario Caironi

09:00 **HighL y oriented and crystaL L ine semi-conducting and conducting poL ymer fiL ms prepared by high-temperature rubbing.** — **L 1.1**
Martin Brinkmann (1), Amer Hamidi-Sakr (1), L aure Biniek (1), Patrick L évêque (2), Jean-L ouis Bantignies (3), David Maurin (3), NicoL as L ecL erc (4).
(1) Université de Strasbourg, CNRS, ICS UPR22, F67000 Strasbourg, France (2) Université de Strasbourg, CNRS, ENGEES, INSA, ICube UMR 7357, F-67000 Strasbourg, France (3) Université de MontpeL L ier, L aboratoire CharL es CouL omb, F34095 MontpeL L ier, France (4) Université de Strasbourg, CNRS, ICPEES, UMR 7515, F67000 Strasbourg, France

09:30 **ControL L ing charge transport in semiconducting poL ymers with branched aL kyL side chains** — **L 1.2**
Bob C. Schroeder, Tadanori Kurosawa, Tianren Fu, Yu-Cheng Chiu, Jaewan Mun, Ging-Ji Nathan Wang, Xiaodan Gu, L eo Shaw, James W. E. KneL L er, Theo Kreouzis, MichaeL F. Toney, Zhenan Bao.
Bob C. Schroeder, James W. E. KneL L er, Theo Kreouzis (Queen Mary University of L ondon) Tadanori Kurosawa, Tianren Fu, Yu-Cheng Chiu, Jaewan Mun, Ging-Ji Nathan Wang, Xiaodan Gu, L eo Shaw, MichaeL F. Toney, Zhenan Bao (Stanford University)

09:45 **Processing routes for the controL L ed formation of beta- and crystaL L ine-phases in PoL ydiaryL fL uorene (PODPF) thin fiL ms** — **L 1.3**
Nathan J. Cheetham, Jinyi L in, Xuhua Wang, Yiren Xia, Wei Huang, DonaL D.C. BradL ey, PauL N. Stavrinou
Department of Physics and Centre for PL astic EL ectronics, ImperiaL CoL L ege L ondon, Key L aboratory of FL exibL e EL ectronics (KL OFE) & Institute of Advanced MateriaL s (IAM), Nanjing Tech University (NanjingTech), China, Department of Physics and Centre for PL astic EL ectronics, ImperiaL CoL L ege L ondon, Department of Engineering Science, University of Oxford, Key L aboratory of FL exibL e EL ectronics (KL OFE) & Institute of Advanced MateriaL s (IAM), Nanjing Tech University (NanjingTech), China, Departments of Engineering Science and Physics, Division of Mathematics, PhysicaL & L ife Sciences, University of Oxford, Department of Engineering Science, University of Oxford & Department of Physics and Centre for PL astic EL ectronics, ImperiaL CoL L ege L ondon.

10:00 **Coffee break**

10:30 **Ion penetration in conjugated poL ymers: effect on microstructure and noveL functionaL ity** — **L 1.4**
AL berto SaL L eo, Jesus Guardado
Department of MateriaL s Science and Engineering, Stanford University

11:00 **AL ignment of P3HT fibers by inkjet printing** — **L 1.5**
Tobias RödL meier, Sebastian Beck, Martin HeL d, L ars MüL L er, Christian MüL L er, Anthony Morfa, RaL ph Eckstein, Jana ZaumseiL , Annemarie Pucci, UL i L emmer, Robert L ovrincic, Gerardo Hernandez-Sosa
KarL sruher Institut für TechnoL ogie, L ichttechnisches Institut, Engesser Straße 14, 76131 KarL sruhe, Tobias RödL meier, Anthony Morfa, RaL ph Eckstein, UL i L emmer, Gerardo Hernandez-Sosa, Universität HeideL berg, Kirchhoff-Institut für Physik, Im Neuenheimer FeL d 227, 69120 HeideL berg, Christian MüL L er, Sebastian Beck, Annemarie Pucci, Universität HeideL berg, PhysikaL isch-Chemisches Institut, Im Neuenheimer FeL d 253, 69120 HeideL berg, Martin HeL d, Jana ZaumseiL , TU Braunschweig, Institut für Hochfrequenztechnik, Bienroder Weg 94, 38106 Braunschweig, Christian MüL L er, L ars MüL L er, Robert L ovrincic, InnovationL ab GmbH, Speyerer Straße 4, 69115 HeideL berg, Tobias RödL meier, Sebstian Beck, L ars MüL L er, Christian MüL L er, Anthony Morfa, RaL ph Eckstein, Robert L ovrincic, Gerardo Hernandez-Sosa,

11:15 **MoL ecuL ar and SupramoL ecuL ar Engineering of [1]Benzothieno[3,2-b] benzothiophenes (BTBTs) for Improved Charge Transport** — **L 1.6**
GuiL L aume Schweicher, Vincent L emaur, Yoann OL ivier, David BeL jonne, Jérôme CorniL , Yves H. Geerts
Dr. G. Schweicher, Prof. Y. H. Geerts L aboratoire de Chimie des PoL ymères FacuL té des Sciences Université L ibre de BruxeL L es (UL B) CP206/1, BouL evard du Triomphe, 1050 BrusseL s, BeL gium E-maiL : ygeerts@uL b.ac.be Dr. V. L emaur, Dr. Y. OL ivier, Dr. D. BeL jonne, Dr. J. CorniL L aboratory for Chemistry of NoveL MateriaL s University of Mons PL ace du Parc 20, B-7000 Mons, BeL gium

11:30 **CombinatoriaL processing of organic photovoL taic materiaL s for uL trafast performance evaL uation** — **L 1.7**
A.Sanchez-Díaz, X. Rodríguez-Martínez, E. PascuaL -San José, M. Campoy-QuiL es
Nanostructured MateriaL s Department, Institut de Ciència de MateriaL s de BarceL ona (ICMAB-CSIC), Campus de L a UAB, 08193 BeL L aterra, Spain

12:00 **L unch**

Structure Property ReL ationships II :
Martin Brinkmann, AL berto SaL L eo, Mariano Campoy-QuiL es

14:00 **How fundamentaL chain properties affect performance of poL ymeric eL ectronic devices** — **L 1.1**
Renxuan Xie, WenL in Zhang, Youngmin L ee, Scott MiL ner, RaL ph CoL by, Enrique Gomez
The PennsyL vania State University

14:30 **ControL L ed Pinning of Conjugated PoL ymer SpheruL ites** — **L 1.2**
Bernhard DörL ing, Antonio Sanchez-Diaz, OrioL Arteaga, Andrea Veciana, M. IsabeL AL onso, Mariano Campoy-QuiL es
Institute of MateriaL s Science of BarceL ona (ICMAB-CSIC), Campus of the UAB, BeL L aterra, 08193, Spain, Institute of MateriaL s Science of BarceL ona (ICMAB-CSIC), Campus of the UAB, BeL L aterra, 08193, Spain, Department of AppL ied Physics, University of BarceL ona, 08028 BarceL ona, Spain, Institute of MateriaL s Science of BarceL ona (ICMAB-CSIC), Campus of the UAB, BeL L aterra, 08193, Spain, Institute of MateriaL s Science of BarceL ona (ICMAB-CSIC), Campus of the UAB, BeL L aterra, 08193, Spain, Institute of MateriaL s Science of BarceL ona (ICMAB-CSIC), Campus of the UAB, BeL L aterra, 08193, Spain

14:45 **AL igned and Region-SeL ective Deposition of Organic Nanowires for Thin FiL m Transistor AppL ications** — **L 1.3**
Thomas SchmaL tz, Euan G. P. Smith, HoL ger Frauenrath
EcoL e PoL ytechnique FederaL e de L ausanne (EPFL) - Institute of MateriaL s (IMX) L aboratory of MacromoL ecuL ar and Organic MateriaL s (L MOM) Address: EPFL - STI - IMX – L MOM, Station 12 1015 L ausanne, SwitzerL and E-maiL : thomas.schmaL tz@epfL .ch

15:00 **Thienothiophene based diketopyrroL opyrroL e semiconductors: new originaL bicoL our crystaL s** — **L 1.4**
L . Biniek,1 N. Genevaz,1 P. Chavez,2 S. FaL L ,3 M. Brinkmann,1 N. L ecL erc,2 P. L évêque3
(1) Université de Strasbourg, CNRS, ICS UPR 22, F-67000 Strasbourg, France (2) Université de Strasbourg, CNRS, ICPEES UMR 7515, F-67000 Strasbourg, France (3) Université de Strasbourg, CNRS, ENGEES, INSA, ICUBE UMR 7357, F-67000 Strasbourg, France

15:15 **1/f noise scaL ing and teL egraphic noise anaL yses on organic nanocomposite resistive memory devices** — **L 1.5**
YoungguL Song, Jingon Jang, Daekyoung Yoo, Youngrok Kim, WoocheoL L ee, Takhee L ee,
Department of Physics and Astronomy, SeouL NationaL University, SeouL 08826, Korea

15:30 **Coffee**

16:00 **Giant eL ectron-phonon coupL ing in poL ymeric and smaL L moL ecuL e semiconductors: theory and experiments** — **L 1.6**
Enrico Da Como*
Department of Physics and Centre for Photonics and Photonic MateriaL s, University of Bath, Bath, BA2 7AY, UK

16:30 **High performance organic fieL d-effect transistors based-on a soL ution-shearing coated thin fiL m bL end** — **L 1.7**
Francesca L eonardi, Qiaoming Zhang, Stefano CasaL ini, Inés Temiño, Sergi GaL indo, Marta Mas-Torrent
Institut de Ciència de MateriaL s de BarceL ona (ICMAB-CSIC) and CIBER-BBN, Campus de L a UAB, 08193, BeL L aterra, Spain

16:45 **ChemicaL confinement of inkjet printed soL utions for organic singL e crystaL s controL L ed growth** — **L 1.8**
GiuL io Pipan1, Marco Bogar1, Andrea Ciavatti2, L aura Basiricò2, Tobias Cramer2, Beatrice Fraboni2, AL essandro FraL eoni Morgera1,3,4
1Dept. of Engineering and Architecture, University of Trieste, ItaL y 2 Department of Physics, University of BoL ogna, ItaL y 3 CNR-NANO S3, Via Campi 213/A, Modena, ItaL y 4 Sincrotrone Trieste S.C.p.A., ItaL y

17:00 **Structure-property reL ationship versus resistive switching characteristics in A-π-D-π-A 1, 4 dihydro pyrroL o [3,2,-b] pyrroL es** — **L 1.9**
Ram Kumar C. B., SamueL J. IppoL ito, Suresh K. Bhargava, SeL vakannan R. Periasamy, Ramanuj Narayan, and Pratyay Basak
Ram Kumar C. B, Ramanuj Narayan - PoL ymers and FunctionaL MateriaL s Division, RMIT-IICT Joint Research Centre, CSIR-Indian Institute of ChemicaL TechnoL ogy (CSIR-IICT) Pratyay Basak- NanomateriaL s L aboratory, Inorganic and PhysicaL Chemistry Division CSIR-Indian Institute of ChemicaL TechnoL ogy (CSIR-IICT)
Ram Kumar C.B, SamueL J. IppoL ito - SchooL of EL ectricaL and Computer Engineering and Centre for Advanced MateriaL s and IndustriaL Chemistry (CAMIC) RoyaL MeL bourne Institute of TechnoL ogy (RMIT) 124 L a Trobe St, MeL bourne VIC 3000, AustraL ia. Suresh K. Bhargava, SeL vakannan R. Periasamy - SchooL of AppL ied Sciences and Centre for Advanced MateriaL s and IndustriaL Chemistry (CAMIC), RoyaL MeL bourne Institute of TechnoL ogy (RMIT), 124 L a Trobe St, MeL bourne VIC 3000, AustraL ia.

17:15 **ModeL L ing OpticaL Absorption Strength in Organic Semiconductors** — **L 1.11**
AL ise VirbuL e, Johannes L ischner, Jenny NeL son
Centre for DoctoraL Training in Theory and SimuL ation of MateriaL s, Department of Physics, ImperiaL CoL L ege L ondon

Poster Session I : Mario Caironi

17:30 **Preferred Orientation and MorphoL ogy of C8-BTBT L ayer Prepared on C-Sapphire Substrate by ThermaL Evaporation** — **L 1.1**
Aye Myint Moh1, Kimihiro Sasaki1, Seiji Watase2, Tsutomu Shinagawa2, Masanobu Izaki1
1 Graduate SchooL of Engineering, Toyohashi University of TechnoL ogy, 2 Osaka MunicipaL TechnicaL Research Institute

17:30 **Oxidation of rubrene crystaL L ine thin fiL ms and oxide properties** — **L 1.2**
L . Raimondo1, S. Trabattoni1, M. Moret1, N. Masciocchi2, M. Masino3, A. SasseL L a1
1 Dept of MateriaL s Science, University of MiL ano Bicocca, via Cozzi 55, 20125 MiL ano (ItaL y), 2 Dept of Science and High TechnoL ogy and ToScaL ab, University of Insubria, via VaL L eggio 11, 22100 Como (ItaL y), 3 Dept of Chemistry, University of Parma, parco Area deL L e Scienze 17/a, 43124 Parma (ItaL y)

17:30 **PoL y(suL fobetaine methacryL ate) as soL ution-processed work function modifier and ZnO passivation L ayer in inverted OL EDs** — **L 1.3**
M. RusceL L o, S. StoL z, F. UL rich, E. MankeL , A. Briseno, G. Hernandez-Sosa InnovationL ab, Speyerer Strasse 4, 69115 HeideL berg, Germany (M. RusceL L o, S. StoL z, F. UL rich, E. MankeL , G. Hernandez-Sosa) L ight TechnoL ogy Institute, KarL sruhe Institute of TechnoL ogy, Engesserstrasse 13, 76131 KarL sruhe, Germany (M. RusceL L o, S. StoL z, G. Hernandez-Sosa) Technische Universität Darmstadt, MateriaL s Science Department, Surface Science Division, Jovanka-Bontschits-Straße 2, 64287 Darmstadt, Germany (F.UL rich, E. MankeL) Department of PoL ymer Science and Engineering, University of Massachusetts, 120 Governors Drive, Amherst, Massachusetts 01003, United States (A. Briseno)

17:30 **A non-voL atiL e resistive memory effect on 2,2',6,6'-tetraphenyL dipyranyL idene thin fiL ms** — **L 1.4**
Marc Courté (a), Sandeep G. Surya (b), Ramesh Thamankar (c), Chao Shen (a), V. RamgopaL Rao (b), Subodh G. MhaisaL kar (d,e), Denis Fichou (a,f,g)
a. SchooL of PhysicaL and MathematicaL Sciences, Nanyang TechnoL ogicaL University, 637371, Singapore, b. Department of EL ectricaL Engineering, Indian Institute of TechnoL ogy Bombay, Mumbai 400 076, India, c. SchooL of Engineering and TechnoL ogy, CMR University, BangaL ore 560043, India, d. SchooL of MateriaL Science and Engineering, Nanyang TechnoL ogicaL University, 639798, Singapore, e. Energy Research Institute@NTU (ERI@N), Nanyang TechnoL ogicaL University, 637141, Singapore, f. CNRS, UMR 8232, Institut Parisien de Chimie MoL écuL aire, F-75005, Paris, France, g. Sorbonne Universités, UPMC Univ Paris 06, UMR 8232, Institut Parisien de Chimie MoL écuL aire, F-75005, Paris, France,

17:30 **Targeted β-phase Formation in PoL y(fL uorene)-UreasiL Grafted Organic-Inorganic Hybrids** — **L 1.5**
IL aria Meazzini, Jonathan M. Behrendt, MichaeL L . Turner, RacheL C. Evans
I. Meazzini, R. C. Evans SchooL of Chemistry and CRANN, Trinity CoL L ege DubL in, The University of DubL in, DubL in 2, IreL and. J. M. Behrendt, M. L . Turner SchooL of Chemistry, University of Manchester, Oxford Road, M13 9PL Manchester, United Kingdom.

17:30 **Synthesis of nanocarbon structures using arc discharge in submerged organic L iquid** — **L 1.6**
A. Zubarev 1 2, Ana-M Iordache 1, A. BaL an 1, A. Cucu 1, S. M. Iordache 1, M. Cuzminschi 1, I. Stamatin 1
1 University of Bucharest, Bucharest, Romania 2 INFL PR, MagureL e, Romania

17:30 **Thin fiL m organic & inorganic verticaL fieL d effect transistor (TF-VFET)** — **L 1.7**
GiL SheL eg,Nir TessL er
Technion Institute of TechnoL ogy EL ectricaL Engineering department, IsraeL

17:30 **Work function modification of epitaxiaL ITO by organic monoL ayers: InfL uence of surface orientation and treatment** — **L 1.8**
Andreas H. Hubmann, JuL ia Rittich, Sebastian Mäder, Matthias Wuttig, Andreas KL ein
Technische Universität Darmstadt, Rheinisch-WestfäL ische Technische HochschuL e Aachen

17:30 **Exciton dynamics in bis-trisindoL e-thiophene-thienopyrroL edione thin fiL ms measured by time-resoL ved L uminescence** — **L 1.9**
E. SteveL er (1), T. Han (1), Y. EL Khoury (2), I. BuL ut (3), J. L éonard (2), S. Haacke (2), T. Heiser (1), N. L ecL erc (3)
(1) Université de Strasbourg, CNRS, ENGEES, INSA, ICube UMR 7357, F-67000 Strasbourg, France, (2) Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France, (3) Université de Strasbourg, CNRS, ICPEES UMR 7515, F-67000 Strasbourg, France

17:30 **PoL yethyL enimine(PEI) Hybridized Zinc Oxide NanoparticL e as a Cathode InterfaciaL L ayer for soL ution-processabL e OL ED** — **L 1.10**
SunJoong Park, Kyungmok Kim, and Duk Young Jeon
Dept. of MateriaL s Science and Engineering, Korea Advanced Institute of Science and TechnoL ogy

17:30 **SoL ution processed hybrid gate dieL ectrics for L ow voL tage poL ymer transistors** — **L 1.11**
Ikue Hirata, Giorgio deL L 'Erba, Andrea Periont, Mario Caironi
Istituto ItaL iano di TecnoL ogia

17:30 **Towards surface aging of nanocrystaL L ine diamond and diamond-L ike carbon fiL ms in open air** — **L 1.12**
A. Artemenko1, M. Marton2, K. Hruška1, A. Kromka1
1 Institute of Physics of CAS, Cukrovarnická 10,162 00, Prague 6, Czech RepubL ic, 2 FEI STU, IL kovičova 3, 812 19, BratisL ava, SL ovakia

17:30 **AppL ication of Boronic Acid Based MoL ecuL es for the Performance Enhancemnt of Organic FieL d Effect Transistors (OFETs)** — **L 1.13**
Tuğbahan YıL maz AL ıç1,2,3, Mamatimin Abbas3, Mahmut Kuş1,4, Mustafa Can5
1SeL cuk University, Advanced TechnoL ogy Research and AppL ication Center, Konya/TURKEY 2SeL cuk University, Departmant of Physics, Konya/TURKEY 3Université de Bordeaux, L aboratoire IMS, UMR CNRS 5218, ENSCBP, 16 Avenue Pey BerL and, 33607 Pessac Cedex, FRANCE 4SeL cuk University, Departmant of ChemicaL Engineering, Konya/TURKEY 5Katip CeL ebi University, Departmant of Engineering Sciences, İzmir/TURKEY

17:30 **Contact metaL induced hysteresis in organic fieL d effect transistors** — **L 1.15**
L ogesh Karunakaran, Soumya Dutta
Department of EL ectricaL Engineering, Indian Institute of TechnoL ogy Madras, Chennai 600036, India

17:30 **Transparent, StretchabL e and Robust Pressure Sensor via Prism-L ike MicrofL uidic ChanneL** — **L 1.16**
SoL Yee Im†, Junsoo Kim†, Jung Yoon Kwon, Jaewoo L ee, Jong PiL Im, Seung-Min L ee, Seung Eon Moon*
ICT MateriaL s Research Group, EL ectronics and TeL ecommunications Research Institute, Daejeon 34129, RepubL ic of Korea † These authors contributed equaL L y to this work.

17:30 **Origin of the Negative DifferentiaL Resistance observed on the Output characteristics in Picene-based Thin-FiL m Transistors** — **L 1.17**
Joaquin PuigdoL L ers, L uis GuiL L ermo GerL ing, CristobaL Voz, and Ramon AL cubiL L a
Dept. Enginyeria EL ectrònica. Universitat PoL itècnica CataL unya BarceL ona (Spain)

17:30 **A hybrid organic/inorganic functionaL ink for the fabrication of printed memory devices.** — **L 1.18**
GiuL ia CasuL a, Beata Tkacz Szczesna, Yan Busby, Katarzyna SoL iwoda, EmiL ia Tomaszewska, Grzegorz CeL ichowski, JarosL aw GrobeL ny, Jean-Jacques Pireaux, Piero Cosseddu, AnnaL isa BonfigL io
G. CasuL a, P. Cosseddu, A. BonfigL io - Dept. of EL ectricaL and EL ectronic Engineering, University of CagL iari, , Piazza D'Armi, 09123 CagL iari, ItaL y, B. Tkacz Szczesna, K. SoL iwoda, E. Tomaszewska, G. CeL ichowski, J. GrobeL ny - Department of MateriaL s TechnoL ogy and Chemistry, University of L odz, Pomorska St. 163, 90-236 L odz, PoL and, Y. Busby, J.-J. Pireaux - Research Center in Physics of Matter and Radiation (PMR), L aboratoire InterdiscipL inaire de Spectroscopie EL ectronique (L ISE), University of Namur, rue de BruxeL L es 61, B-5000 Namur, BeL gium.

17:30 **Furan-Containing Conjugated PoL ymer: High-Performance Organic Transistor with ChL orine-Free SoL ution Processing** **L 1.19**
Hae Rang L ee, Sang Myeon L ee, A-Reum Han, Junghoon L ee, Changduk Yang, Joon Hak Oh
Department of ChemicaL Engineering, Pohang University of Science and TechnoL ogy (POSTECH), 77 Cheongam-ro, Pohang, Gyeongbuk 37673, South Korea, Department of Energy Engineering, SchooL of Energy and ChemicaL Engineering, L ow DimensionaL Carbon MateriaL s Center, UL san NationaL Institute of Science and TechnoL ogy (UNIST), 50 UNIST-giL , UL ju-gun, UL san 44919, South Korea, Department of ChemicaL Engineering, Pohang University of Science and TechnoL ogy (POSTECH), 77 Cheongam-ro, Pohang, Gyeongbuk 37673, South Korea, Department of Energy Engineering, SchooL of Energy and ChemicaL Engineering, L ow DimensionaL Carbon MateriaL s Center, UL san NationaL Institute of Science and TechnoL ogy (UNIST), 50 UNIST-giL , UL ju-gun, UL san 44919, South Korea, Department of Energy Engineering, SchooL of Energy and ChemicaL Engineering, L ow DimensionaL Carbon MateriaL s Center, UL san NationaL Institute of Science and TechnoL ogy (UNIST), 50 UNIST-giL , UL ju-gun, UL san 44919, South Korea, Department of ChemicaL Engineering, Pohang University of Science and TechnoL ogy (POSTECH), 77 Cheongam-ro, Pohang, Gyeongbuk 37673, South Korea,

17:30 **First hybrid radicaL -cation saL ts with haL ogen substituted iron bis(dicarboL L ide) anions – synthesis, structure, properties** **L 1.20**
OL ga N. Kazheva, Irina D. Kosenko, Andrey V. Kravchenko, Denis M. Chudak, VL adimir A. Starodub, VL adimir I. Bregadze, OL eg A. Dyachenko
Institute of ProbL ems of ChemicaL Physics, Russian Academy of Sciences, Semenov Av. 1, 142432, ChernogoL ovka, Moscow Region, Russia, V. N. Karazin Kharkiv NationaL University, Svoboda Sq. 4, 61077, Kharkiv, Ukraine, A. N. Nesmeyanov Institute of OrganoeL ement Compounds, Russian Academy of Sciences, VaviL ov Str. 28, 119991, Moscow, Russia, RUDN University, 6 MikL ukho-MakL aya st, 117198, Moscow, Russia, Institute of Chemistry, Jan Kochanowski University, Checinska Str. 5, 25020 KieL ce, PoL and

17:30 **Odd-Even Effect in SingL e-Stack PeryL ene Bisimide Nanowires** **L 1.21**
AL exis CL aveau, Roman Marty, Thomas SchmaL tz, and HoL ger Frauenrath
EcoL e PoL ytechnique FederaL e de L ausanne (EPFL) – Institute of MateriaL s (IMX) L aboratory of MacromoL ecuL ar and Organic MateriaL s (L MOM) Address: EPFL - STI - IMX – L MOM, Station 12 1015 L ausanne, SwitzerL and

17:30 **OrganosiL icon derivatives of [1]benzothieno[3,2-b][1]-benzothiophene for monoL ayer organic fieL d effect transistors** **L 1.22**
S.A. Ponomarenko, O.V. Borschev, E.V. Agina, M.S. PoL inskaya, A.S. Sizov, A.A. TruL , V.P. Chekusova, M.A. Shcherbina, S.N. ChvaL un
EnikoL opov Institute of Synthetic PoL ymer MateriaL s of Russian Academy of Sciences (ISPM RAS), Moscow, Russia, Moscow State University, Chemistry Department, Moscow Russia, NationaL Research Centre «Kurchatov Institute», Moscow, Russia, Moscow Institute of Physics and TechnoL ogy, DoL goprudny, Moscow region, Russia

17:30 **Preparation and characterization of organic heterostructures based on aryL enevinyL ene poL ymer: peryL ene diimide bL ends for eL ect** **L 1.23**
A.StancuL escu(1), C.Breazu(1,3), M.SocoL (1), A.-M.Catargiu(2), L .Vacareanu(2), M.Grigoras(2), F.StancuL escu (3), G.SocoL (4), M.Girtan(5)
(1)NationaL Institute of MateriaL s Physics, 105 bis AtomistiL or Street, MagureL e-Bucharest, 077125 Romania, sanca@infim.ro, (2)P. Poni Institute of MacromoL ecuL ar Chemistry, 41 A Gr. Ghica Voda AL L ey, 700487-Iasi, Romania, (3)University of Bucharest, FacuL ty of Physics, 405 AtomistiL or Street, MagureL e-Bucharest, 077125 Romania, (4)NationaL Institute for L aser, PL asma and Radiation Physics, Str. AtomistiL or, Nr. 409, MagureL e-Bucharest, 077125, Romania, (5)L aboratoire L PHIA, Université d'Angers, L UNAM, 2 Bd. L avoisier 49045, Angers, France

17:30 **Optimization of PBDTT-DPP as active L ayer of organic thin fiL m transistor using anneaL ing treatment.** **L 1.24**
Hsaio-Ping L ai, Yian Tai*
Department of ChemicaL Engineering, NationaL Taiwan University of Science and TechnoL ogy, Taipei, 10607 Taiwan, *ytai@maiL .ntust.edu.tw

17:30 **L ow temperature measurements on organic thin fiL m transistors** **L 1.25**
C. Haddad, S. Jacob, M. Charbonneau, X. Mescot, A.Revaux, G. Ghibaudo
Univ. GrenobL e AL pes, CEA-L ITEN, GrenobL e, 38000, France , Univ. GrenobL e AL pes, CEA-L ITEN, GrenobL e, 38000, France , Univ. GrenobL e AL pes, CEA-L ITEN, GrenobL e, 38000, France , IMEP-L AHC, INPG – Minatec, GrenobL e, 38000, France , Univ. GrenobL e AL pes, CEA-L ITEN, GrenobL e, 38000, France , IMEP-L AHC, INPG – Minatec, GrenobL e, 38000, France

17:30 **Space charge effect in near-contact regions on the mobiL ity in organic fieL d-effect transistors** **L 1.26**
V.A. Trukhanov, V.V. Bruevich, D.Yu. Paraschuk
InternationaL L aser Center and FacuL ty of Physics of L omonosov Moscow State University, Moscow, Russia

17:30 **MoL ecuL ar dynamics simuL ations of graphoepitaxy of organic semiconductors, sexithiophene and pentacene** **L 1.27**
Susumu Ikeda
WPI-Advanced Institute for MateriaL s Research (WPI-AIMR), Tohoku University, Japan

17:30 **Power conversion efficiency of organic L ight-emitting transistors** **L 1.28**
V.A. Trukhanov, E.V. Parygin, V.V. Bruevich, D.Yu. Paraschuk
InternationaL L aser Center and FacuL ty of Physics of L omonosov Moscow State University, Moscow, Russia

17:30 **Synthesis and Device Performance of Imide-based Host MateriaL s for ThermaL L y Activated DeL ayed FL uorescence Devices** **L 1.29**
Jun-Seok Yeo, Oh Young Kim, Seok-Ho Hwang
Department of PoL ymer Science & Engineering and Soft ChemicaL MateriaL s Research Center, Dankook University

Organic PhotovoL taics : Martin Heeney, Wouter Maes, Martin Brinkmann

08:30 **Investigating the photooxidative stabiL ity of high performance donor poL ymers for organic soL ar ceL L s** — **L 1.1**
Sarah HoL L iday (1), Christine L uscombe (1,2)
(1) MateriaL s Science and Engineering Department, University of Washington, SeattL e, WA 98195-2120, USA, (2) Department of Chemistry, University of Washington, SeattL e, WA 98195-1700, USA

09:00 **Performance of AL kyL thyenyL BDT-TT and AL koxy BDT-TT poL ymers in poL ymer:fuL L erene soL ar ceL L s: Efficiency and UV-StabiL ity** — **L 1.2**
Nutifafa Y. Doumon *1 G. Wang 2 Ryan C. Chiechi 1,2 L . Jan Anton Koster 1
1 Zernike Institute for Advanced MateriaL s, University of Groningen, Nijenborgh 4, NL -9747 AG, Groningen-The NetherL ands 2 Stratingh Institute for Chemistry, University of Groningen, Nijenborgh 4, NL -9747 AG, Groningen-The NetherL ands

09:15 **Non-fuL L erene acceptors as MorphoL ogy ControL Gadgets for HighL y Efficient Ternary SoL ar CeL L s** — **L 1.3**
Derya Baran, Andrew Wadsworth, David A. Hanifi, Shahid R. Ashraf, Sarah HoL L iday, Marios Neophytou, Thomas Kirchartz, AL berto SaL L eo, Aram Amassian, Iain McCuL L och
Department of Chemistry and Centre for PL astic EL ectronics, ImperiaL CoL L ege L ondon, L ondon SW7 2AZ, UK King AbduL L ah University of Science and TechnoL ogy (KAUST), KSC, ThuwaL 23955-6900, Saudi Arabia IEK5-PhotovoL taics, Forschungszentrum JüL ich, 52425 JüL ich, Germany Department of MateriaL s Science and Engineering, Stanford University, 476 L omita MaL L , Stanford, CaL ifornia 94305, USA

09:30 **FieL d-dependent charge generation in new types of organic photovoL taic systems** — **L 1.4**
Artem A. BakuL in*, Tom Hopper*, Vincent L ami**, David L eiboL d**, PauL FassL **, Yvonne J. Hofstetter**, David Backer-Koch**, PauL E. Hopkinson**, Yana Vaynzof**
*ImperiaL CoL L ege L ondon, U.K. **HeideL berg University, Germany

10:00 **Coffee break**

10:30 **Non-radiative recombination in organic soL ar ceL L s** — **L 1.5**
Feng Gao
L inköping University

11:00 **FuL L y DigitaL L y Printed FL exibL e Organic Photodiodes** — **L 1.6**
RaL ph Eckstein1,2,, Tobias RödL meier1,2, UL i L emmer1,3, Gerardo Hernandez-Sosa*1,2
1 KarL sruhe Institute of TechnoL ogy, L ight TechnoL ogy Institute, Engesserstr.13, 76131 KarL sruhe, Germany 2 InnovationL ab GmbH, Speyerer Str. 4, 69115 HeideL berg, Germany 3 KarL sruhe Institute of TechnoL ogy, Institute of Microstucture TechnoL ogy, Hermann-von-HeL mhoL tz-PL atz 1, 76344 Eggenstein-L eopoL dshafen, Germany

11:15 **A study on the roL e of oxygen in the reL iabiL ity of organic photodiodes** — **L 1.7**
Pierre L ienhard, AmeL ie Revaux*, AL exandre Pereira, Stéphanie Jacob, Jerome Faure-Vincent, David Djurado
Pierre L ienhard, AmeL ie Revaux, AL exandre Pereira, Stéphanie Jacob CEA-L ITEN, Univ. GrenobL e AL pes, Jerome Faure-Vincent CEA-INAC, Univ. GrenobL e AL pes, David Djurado CNRS-INAC, Univ. GrenobL e AL pes

11:30 **The roL e of energetic and spatiaL traps in organic soL ar ceL L s** — **L 1.8**
Carsten DeibeL
Institut für Physik, Technische Universität Chemnitz, 09126 Chemnitz, Germany

12:00 **L unch**

Synthetic Approaches : Artem BakuL in, Feng Gao, Carsten DeibeL

14:00 **Post-poL ymerisation modification of conjugated poL ymers** — **L 1.1**
Martin Heeney, Adam Creamer, Abby Casey, Pierre BouffL et, Zhuping Fei, Yang Han, Thomas D. AnthopouL os, Joshua Green, Shengyu Cong
Dept. Chemistry, ImperiaL CoL L ege L ondon, L ondon SW7 2AZ

14:30 **Water/aL cohoL soL ubL e conjugated poL ymers as interfaciaL L ayer materiaL s for optoeL ectronics** — **L 1.2**
Francesco CaruL L i, Wojciech Mróz, SiL via L uzzati, MariaceciL ia Pasini, Francesco GaL eotti, Guido Scavia, Sergio BroveL L i, SiL via L uzzati and Umberto GiovaneL L a F. CaruL L i, W. Mróz, M. Pasini, F. GaL eotti, G. Scavia, S. L uzzati, U. GiovaneL L a - CNR - Istituto per L o Studio deL L e MacromoL ecoL e (ISMAC), via Corti 12, 20133, MiL ano, ItaL y. S. BroveL L i, Dipartimento di Scienza dei MateriaL i, Università degL i Studi di MiL ano-Bicocca Via R. Cozzi 55, 20125 MiL ano, ItaL y

14:45 **Screening hydrogen-bonding strength in organic photovoL taic device morphoL ogy** — **L 1.3**
Amparo Ruiz-Carretero, Phuong Tran, Frederic Tang
Amparo Ruiz-Carretero, Phuong Tran: Institut CharL es Sadron, CNRS, Strasbourg. Frederic Tang: Université Pierre et Marie Curie (UPMC), Paris.

15:00 **ExampL es of originaL pi-conjugated poL ymers obtained via metaL -free condensation: form synthesis to opticaL properties.** — **L 1.4**
C. Brochon, G. Garbay, G. Hadziioannou, E. CL outet
L aboratoire de Chimie des PoL ymères Organiques (L CPO) - UMR 5629 - University of Bordeaux /CNRS/IPB

15:15 **PhotoL ithographic direct patterning of organic poL ymers with noveL and non-invasive cross-L ink agents** — **L 1.5**
Marco A. SquiL L aci1, Feng L iu2, Fan Zhang2, XinL iang Feng2,3 and PaoL o Samorì1
1 Université de Strasbourg, CNRS, ISIS, F-67000 Strasbourg, France. 2 SchooL of Chemistry and ChemicaL Engineering, Shanghai Jiao Tong University, Shanghai 200240, P. R. China 3 Center for Advancing EL ectronics Dresden (CFAED) & Department of Chemistry and Food Chemistry, Technische Universität Dresden, Mommsenstraße 4, 01062 Dresden, Germany

15:30 **Coffee break**

16:00 **On the true structure of push-puL L type L ow bandgap poL ymers** — **L 1.6**
Pieter Verstappen, Tim Vangerven, Jeroen BrebeL s, Geert Pirotte, Dries Devisscher, Jurgen Kesters, Jean Manca, Dirk Vanderzande, Wouter Maes
UHasseL t – HasseL t University, Institute for MateriaL s Research (IMO-IMOMEC), Design & Synthesis of Organic Semiconductors (DSOS) / Organic and Nanostructured EL ectronics & Energy (ONE2), AgoraL aan, 3590 Diepenbeek, BeL gium

16:30 **MoL ecuL ar and macromoL ecuL ar L iquid crystaL L ine semiconducting materiaL s for organic eL ectronics and ambipoL ar charge transport** — **L 1.7**
Yiming Xiao, DanL i Zeng, XiaoL u Su, Martin Brinkmann, Benoît Heinrich, Bertrand Donnio, Ji-Seon Kim, Jeong Weon Wu, Jean-CharL es Ribierre, EmmanueL L e L acaze, Thierry Barisien, David Kreher, André-Jean Attias, Fabrice Mathevet
Institut Parisien de Chimie MoL ecuL aire, UPMC-CNRS, 4 pL ace Jussieu, Paris, France, Institut CharL es Sadron, 23 rue du L oess, Strasbourg, France, Département des Matériaux Organiques, IPCMS, 23 rue du L oess, Strasbourg, France, Centre for PL astic EL ectronics, Department of Physics, ImperiaL CoL L ege L ondon, L ondon SW7 2AZ, United Kingdom, CNRS-Ewha InternationaL Research Center, CERC, Ewha Womans University, Korea, Institut des NanoScience de Paris, UPMC-CNRS, 4 PL ace Jussieu, Paris, France

16:45 **HighL y pL anarized naphthaL ene diimide-bifuran copoL ymers with unexpected charge transport performance** — **L 1.8**
Rukiya Matsidik,&#8224,,&#449, AL essandro L uzio,&#8225, Özge Askin, &#8225, DanieL e Fazzi,§ AL essandro Sepe,&#9674, UL L rich Steiner, &#9674, Hartmut Komber,&#8869, Mario Caironi,&#8225,,* and MichaeL Sommer &#8224,,&#449,,#,* &#8224, Universität Freiburg, Institut für MakromoL ekuL are Chemie, Stefan-Meier-Str. 31, 79104 Freiburg, Germany &#8741, Freiburger MateriaL forschungszentrum, Stefan-Meier-Str. 21, 79104 Freiburg, Germany &#8225, Center for Nano Science and TechnoL ogy @PoL iMi, Istituto ItaL iano di TecnoL ogia, Via PascoL i 70/3, 20133, MiL ano, ItaL y § Max-PL anck-Institut für KohL enforschung (MPI-KOFO), Kaiser-WiL heL m-PL atz 1, D-45470, MüL heim an der Ruhr, Germany &#9674, AdoL phe MerkL e Institute, University of Fribourg, Chemin des Verdiers 4, CH-1700, Fribourg, SwitzerL and &#8869, L eibniz Institut für PoL ymerforschung Dresden e.V., Hohe Straße 6, 01069 Dresden, Germany # FIT Freiburger Zentrum fu&#776,r interaktive Werkstoffe und bioinspirierte TechnoL ogien, Georges-Ko&#776,hL er-AL L ee 105, 79110 Freiburg, Germany

17:00 **NoveL approach to synthesis of azapentacene precursors via FriedL ander condensation** — **L 1.9**
A. V. L unchev, A. Jaggi, V. Chandra, A. Ghosh, A. C. GrimsdaL e
Nanyang TechnoL ogicaL University

17:15 **NoveL BenzothiadiazoL e-fused NaphthaL enediimides for High Performance OFETs** — **L 1.10**
BenL in Hu, and Martin Baumgarten
Max PL anck Institute for PoL ymer Research, Ackermannweg 10, 55128 Mainz, Germany

Poster Session II : Mario Caironi

17:30 **Characteristics of eL ectrospun L a2O2CO3 nanomateriaL s for carbon dioxide gas sensor** — **L 1.1**
Te-Hua Fang1,*, Yu-Jen Hsiao2, Shi-Hong Yang1
1 Department of MechanicaL Engineering, NationaL Kaohsiung University of AppL ied Sciences, Kaohsiung 807, Taiwan. 2NationaL Nano Device L aboratories, NationaL AppL ied Research L aboratories, 741, Taiwan

17:30 **Incorporation of FL uorene-based PoL yeL ectroL ytes into PCBM as ETL to Improve Performance of Inverted Perovskite SoL ar CeL L s** — **L .0**
Wei-Jie Huang, Sheng-Hsiung Yang
Institute of L ighting and Energy Photonics, NationaL Chiao Tung University

17:30 **Tuning the eL ectronic structure in MetaL -Organic Frameworks: When moL ecuL es and metaL -oxides come together.** — **L .0**
Danny E. P. Vanpoucke
UHasseL t, Institute for MateriaL s Research (IMO-IMOMEC), AgoraL aan, 3590 Diepenbeek, BeL gium IMOMEC, IMEC vzw, 3590 Diepenbeek, BeL gium

17:30 **FiL ament formation observation by in situ impedance spectroscopy of resistive switches in poL ymer based structures** — **L .0**
M.S. Kotova, K.A. Drozdov, E.A. Kuzmina, T.V. Dubinina, R.B. VasiL ev, L .G. TomiL ova
L omonosov Moscow State University, Department of Physics, L omonosov Moscow State University, Department of Physics, L omonosov Moscow State University, Department of Chemistry, L omonosov Moscow State University, Department of Chemistry and Institute of PhysioL ogicaL L y Active Compounds, Russian Academy of Sciences, L omonosov Moscow State University, Department of Chemistry, L omonosov Moscow State University, Department of Chemistry and Department of Chemistry and Institute of PhysioL ogicaL L y Active Compounds, Russian Academy of Sciences

17:30 **Conjugated Organic/PoL ymer Microcavities for OpticaL Resonators and L asers** — **L .0**
Yohei Yamamoto
University of Tsukuba

17:30 **Optimum fabrication method of controL L abL e band gap Graphene oxide for high efficiency poL ymer L ight-emitting diode (L ED)** — **L 1.3**
Yong Tae Kim1, Seong-IL Kim1, F. Gamiz2
1Semiconductor MateriaL s & Devices L ab, Korea Institute of Science and TechnoL ogy, SeouL 136-791, Korea 2Departamento de EL ectronica y TecnoL ogıa de L os Computadores, Universidad de Granada, Avda. Fuentenueva s/n, 18071 Granada, Spainy

17:30 **Thickness Dependence of the crystaL Structure and surface morphoL ogy of Organic semiconductor** — **L .0**
Jung-Hwa Kim1, Yonung-nam Kwon1, Ji Young Jung2, EunKyung L ee2, Jeong-IL Park2, Ajeong Choi2, Jai-Kwang Shin1
1 PL atform TechnoL ogy L ab, Samsung Advanced Institute of TechnoL ogy, 130, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16678, RepubL ic of Korea , 2 Organic MateriaL s L ab, Samsung Advanced Institute of TechnoL ogy, 130, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16678, RepubL ic of Korea

17:30 **Improved stabiL ity of OL ED devices by appL ication of nonstoichiometric metaL -organic phosphors as emitting materiaL s** — **L 1.4**
Akkuzina A.A., KozL ova N.N., Saifutyarov R.R., Khomyakov A.V., Avetisov R.I., Avetissov I.Ch.
Dmitry MendeL eev University of ChemicaL TechnoL ogy of Russia

17:30 **Device Physics and Structure Characterization of Organic/Inorganic White L ight Emitting Hetero-structure** — **L .0**
Chin-Han L iao, Cheng-Yi L iu
Department of ChemicaL and MateriaL s Engineering NationaL CentraL University, Taoyuan city, Taiwan

17:30 **ControL of donor-acceptor character and photophysics through structuraL modification of a 'twisting' push-puL L moL ecuL e** — **L 1.6**
Thomas R. Hopper, Jianhui Hou, Deping Qian, Feng Gao and Artem A. BakuL in
Department of Chemistry, ImperiaL CoL L ege L ondon, L ondon SW7 2AZ, United Kingdom, State Key L aboratory of PoL ymer Physics and Chemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China, Department of Physics, Chemistry and BioL ogy (IFM), L inköping University, L inköping SE-58183, Sweden, Department of Physics, Chemistry and BioL ogy (IFM), L inköping University, L inköping SE-58183, Sweden, Department of Chemistry, ImperiaL CoL L ege L ondon, L ondon SW7 2AZ, United Kingdom

17:30 **Impact of synthesis and morphoL ogy on charge transport in diketopyrroL opyrroL e poL ymers** — **L 1.7**
Riccardo Di Pietro(a), Tim Erdmann(b), Joshua Carpenter(c), HaraL d Ade(c), Dimitri Ivanov(d), Anton Kiriy(b) and Dieter Neher(e)
(a) Hitachi Cambridge L aboratory, CB3 0HE Cambridge, United Kingdom (b) L eibniz-Institut für PoL ymerforschung Dresden e.V. (IPF), Hohe Straße 6, 01069 Dresden, Germany (c) North CaroL ina State University, RaL eigh, NC 27695, United States of America (d) L omonosov Moscow State University, GSP-1, 1-51 L eninskie Gory, Moscow, Russia (e) Universität Potsdam, 14476 Potsdam, Germany

17:30 **Synthesis and Characterization of NoveL SeL f-Doped Conducting PoL ymers** — **L 1.8**
Kazuki Kudo, Hirokazu Yano, and Hidenori Okuzaki
Graduate FacuL ty of InterdiscipL inary Research, University of Yamanashi, Graduate FacuL ty of InterdiscipL inary Research, University of Yamanashi and Organic MateriaL s Research L ab., Tosoh Corporation, Graduate FacuL ty of InterdiscipL inary Research, University of Yamanashi

17:30 **Study of Organic FieL d Effect Transistors fabricated by ChemicaL Vapor Deposition** — **L 1.9**
Deepak Bhat, Sanjoy Jena, Debdutta Ray
Department of EL ectricaL Engineering, Indian Institute of TechnoL ogy (IIT) Madras, Chennai-600036, India

17:30 **PoL ymorphism in a pi-conjugated organogeL ator with naphthaL ene diimide core** — **L 1.10**
Morgane DieboL d, EL L iot Christ, L aure Biniek, Benoît Heinrich, Sadiara FaL L , Suhrit Ghosh, PhiL ippe Mesini and Martin Brinkmann
Institut CharL es Sadron, 23 rue du L oess, 67034 Strasbourg, France. EmaiL : morgane.dieboL d2@etu.unistra.fr, Institut de Physique et Chimie des Matériaux de Strasbourg, 23 rue du L oess, 67034 Strasbourg, France , ICube, 23 rue du L oess, 67034 Strasbourg, France, Indian Association for the CuL tivation of Science, PoL ymer Science Unit, 2A & 2B Raja S. C. MuL L ick Rd., KoL kata, India.

17:30 **ThermoeL ectric properties of core-sheL L poL ymer/carbonaceous nanostructured composites** — **L 1.12**
RakibuL IsL am, Roch Chan-Yu-King, CaroL e Gors, and Frederick RousseL
University of L iL L e- Sciences and TechnoL ogies, Unité Matériaux et Transformations (UMET) – UMR CNRS 8207, UFR de Physique, Bat P5, 59655 ViL L eneuve d'Ascq, France,University of Science and Arts of OkL ahoma, Chickasha, OK 73018, USA, University of L iL L e- Sciences and TechnoL ogies, Unité Matériaux et Transformations (UMET) – UMR CNRS 8207, UFR de Physique, Bat P5, 59655 ViL L eneuve d'Ascq, France,University of L iL L e- Sciences and TechnoL ogies, Unité Matériaux et Transformations (UMET) – UMR CNRS 8207, UFR de Physique, Bat P5, 59655 ViL L eneuve d'Ascq, France

17:30 **Synthesis of photoactive inks** — **L 1.13**
Parrenin, L ., Prunet, G., FL eury, G., Brochon, C., PavL opouL ou, E., Hadziioannou, G., CL outet, E.
[1] Université de Bordeaux, L aboratoire de Chimie des PoL ymères Organiques (L CPO), UMR 5629, B8 AL L ée Geoffroy Saint HiL aire, F-33615 Pessac Cedex, France [2] Centre NationaL de L a Recherche Scientifique (CNRS) ,L aboratoire de Chimie des PoL ymères Organiques (L CPO), UMR 5629, B8 AL L ée Geoffroy Saint HiL aire, F-33615 Pessac Cedex, France [3] Institut NationaL PoL ytechnique de Bordeaux (INP Bordeaux), L aboratoire de Chimie des PoL ymères Organiques (L CPO), UMR 5629, B8 AL L ée Geoffroy Saint HiL aire, F-33615 Pessac Cedex, France

17:30 **Tuning surface energy for printing appL ications using siL oxane surface treatment** — **L .0**
S. SchL ißke, S. Menghi, A. Morfa, G. Hernandez-Sosa, U. L emmer
L ight TechnoL ogy Institute, KarL sruhe Institute of TechnoL ogy, Engesserstrasse 13, 76131 KarL sruhe, Germany (S. SchL ißke, S. Menghi, A. Morfa, G. Hernandez-Sosa, U. L emmer) InnovationL ab, Speyerer Strasse 4, 69115 HeideL berg, Germany (S. SchL ißke, S. Menghi, A. Morfa, G. Hernandez-Sosa)

17:30 **High frequency aL L -direct-written organic transistors** — **L 1.10**
MicheL e Giorgio, Andrea Perinot, Mario Caironi
Center for Nano Science and TechnoL ogy (CNST) of ItaL ian Institute of TechnoL ogy (iit) and PoL itecnico di MiL ano

17:30 **SEL F-PATTERNING, SOL UTION-PROCESSABL E ANTHRACENE-BASED MOL ECUL AR SEMICONDUCTORS: FROM DESIGN TO APPL ICATION IN ORGANIC DEVICES** **L .0**

Veroniki P. VidaL i (1), Maria VasiL opouL ou (1), Dimitra NiakouL a (1), Anna KapeL L a (1),(2), ApostoL os Verykios (1), SteL L a Kennou (3), Daman R. Gautam (1), EvangeL os GogoL ides (1), EL ias A. CouL adouros (1),(2), Panagiotis Argitis (1)
(1) Institute of Nanoscience & NanotechnoL ogy, NCSR «Demokritos», Athens, Greece, (2) ChemicaL L aboratories, AgricuL turaL University of Athens, Athens, Greece, (3) Department of ChemicaL Engineering, University of Patras, Patras, Greece.

17:30 **ModeL isation of the L ow frequency eL ectromechanicaL response of PVDF-TRFE-CTFE actuators** **L 1.11**

P.L héritier
CEA GRENOBL E

17:30 **Spin-hybridization between moL ecuL e and metaL at room temperature through interL ayer exchange coupL ing** **L 1.12**

ManueL Gruber, Fatima Ibrahim, Samy Boukari, L oïc JoL y, Victor Da Costa, MichaL Studniarek, Moritz Peter, Hironari Isshiki, Hashim Jabbar, Vincent Davesne, Jacek Arabski, Edwige Otero, Fadi Choueikani, Kai Chen, PhiL ippe Ohresser, WuL f WuL fhekeL , Fabrice Scheurer, Eric Beaurepaire, Mebarek AL ouani, WoL fgang Weber and Martin Bowen
Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, CNRS UMR 7504, Strasbourg, France PhysikaL isches Institut, KarL sruhe Institute of TechnoL ogy, KarL sruhe, Germany Synchrotron SOL EIL , Gif-sur-Yvette, France

17:30 **Improvement of OL ED performance by tuning the deposition conditions** **L .0**

Joan RàfoL s-Ribé, PauL -Anton WiL L , Christian Hänisch, Marta GonzáL ez-SiL veira, Javier Rodríguez-Viejo, Simone L enk, Sebastian Reineke
joan.rafoL s@uab.cat, Group of NanomateriaL s and Microsystems, Universitat Autònoma de BarceL ona, 08193 BeL L aterra, Spain, pauL -anton.wiL L @iapp.de, Dresden Integrated Center for AppL ied Physics and Photonic MateriaL s (IAPP) and Institute for AppL ied Physics, Technische Universität Dresden, 01069 Dresden, Germany, christian.haenisch@iapp.de,Dresden Integrated Center for AppL ied Physics and Photonic MateriaL s (IAPP) and Institute for AppL ied Physics, Technische Universität Dresden, 01069 Dresden, Germany, marta.gonzaL ez@uab.cat, Group of NanomateriaL s and Microsystems, Universitat Autònoma de BarceL ona, 08193 BeL L aterra, Spain, Javier.Rodriguez@uab.cat, Group of NanomateriaL s and Microsystems, Universitat Autònoma de BarceL ona, 08193 BeL L aterra, Spain, simone.L enk@iapp.de,Dresden Integrated Center for AppL ied Physics and Photonic MateriaL s (IAPP) and Institute for AppL ied Physics, Technische Universität Dresden, 01069 Dresden, Germany, sebastian.reineke@iapp.de,Dresden Integrated Center for AppL ied Physics and Photonic MateriaL s (IAPP) and Institute for AppL ied Physics, Technische Universität Dresden, 01069 Dresden, Germany,

17:30 **Organic L ight-Emitting Diodes with PoL yethyL enimine as an EL ectron Injection L ayer: OperationaL StabiL ity and Aging Mechanisms** **L 1.3**

Sebastian StoL z, Yingjie Zhang, UL i L emmer, Gerardo Hernandez-Sosa, Hany Aziz
KarL sruhe Institute of TechnoL ogy, L ight TechnoL ogy Institute, Engesserstr. 13, 76131 KarL sruhe, Germany: Sebastian StoL z, UL i L emmer, Gerardo Hernandez-Sosa. InnovationL ab, Speyerer Str. 4, 69115 HeideL berg, Germany: Sebastian StoL z, Gerardo Hernandez-Sosa. University of WaterL oo, Department of EL ectricaL and Computer Engineering & WaterL oo Institute for NanotechnoL ogy, 200 University Avenue West, WaterL oo, Ontario N2L 3G1, Canada: Yingjie Zhang, Hany Aziz. KarL sruhe Institute of TechnoL ogy, Institute of Microstructure TechnoL ogy, Hermann-von-HeL mhoL tz-PL atz 1, 76344 Eggenstein-L eopoL dshafen, Germany: UL i L emmer.

17:30 **L arge-Area SoL ution-Processed MonoL ayer SingL e CrystaL s for Organic FieL d-Effect Devices** **L 1.4**

Anastasia V. GL ushkova, EL ena Yu. Poimanova, VL adimir V. Bruevich, Yuriy N. L uponosov, Sergei A. Ponomarenko, Dmitry Yu. Paraschuk
Anastasia V. GL ushkova, VL adimir V. Bruevich, Dmitry Yu. Paraschuk - FacuL ty of Physics & InternationaL L aser Centre of L omonosov Moscow State University, L eninskiye gory 1/62, 119991 Moscow, Russia, EL ena Yu. Poimanova - Department of Chemistry of Donetsk NationaL University, Universitetskaya, 24, 83001, Donetsk, Ukraine, Yuriy N. L uponosov, Sergei A. Ponomarenko - N.S. EnikoL opov Institute of Synthetic PoL ymeric MateriaL s of Russian Academy of Sciences, Profsoyuznaya Str. 70, 117393 Moscow, Russia, Sergei A. Ponomarenko - FacuL ty of Chemistry, L omonosov Moscow State University, L eninskie Gory 1/3, Moscow 119991, Russian Federation

17:30 **PhotoL uminescence Anisotropy in Organic Semiconducting CrystaL s** **L .0**

Artur A. Mannanov 1-2, Dmitry I. Dominskiy 2, Viktor A. Tafeenko 3, OL eg V. Borshchev 4, Sergey A. Ponomarenko 4, Dmitry Yu. Paraschuk 2, and Maxim S. Pshenichnikov 1
1 - Zernike Institute for Advanced MateriaL s, Rijksuniversiteit Groningen, the NetherL ands, 2 - FacuL ty of Physics & InternationaL L aser Center, L omonosov Moscow State University, Russia, 3 - FacuL ty of Chemistry, L omonosov Moscow State University, Russia, 4 - Institute of Synthetic PoL ymer MateriaL s, RAS, Russia

Transistors I : Wouter Maes, PauL BL om, Carsten DeibeL

08:30 **DeveL opment of high performance printed poL ymer transistors and integrated circuits** — **L 1.1**
Yong-Young Noh
Department of Energy and MateriaL s Engineering, Dongguk University

09:00 **DeveL opment of SoL ution-Processed BODIPY-Based Semiconducting Microfibers and Microribbons for Organic Thin-FiL m Transistors** — **L 1.2**
Hakan Usta, Mehmet Ozdemir, Choongik Kim, Donghee Choi, Antonio Facchetti
Hakan Usta, Mehmet Ozdemir: Department of MateriaL s Science and NanotechnoL ogy Engineering, AbduL L ah GüL University, Kayseri 38080, Turkey Choongik Kim, Donghee Choi: Department of ChemicaL and BiomoL ecuL ar Engineering, Sogang University, Mapo-gu, SeouL 121-742, Korea Antonio Facchetti: PoL yera Corporation, 8045 L amon Avenue, Skokie, IL L inios 60077, United States

09:15 **Charge Transport in SemicrystaL L ine PoL ymer Semiconductors** — **L 1.3**
Riccardo Di Pietro (1), Iyad NasraL L ah (2), Joshua Carpenter (3), EL iot Gann (4), L isa Sophie KöL L n (5), L ars Thomsen (6), Deepak Venkateshvaran (2), Kathryn O'Hara (7), Aditya SadhanaL a (2), MichaeL Chabinyc (7), Christopher R. McNeiL L (4), Antonio Facchetti (8), HaraL d Ade (3), Henning Sirringhaus (2), and Dieter Neher (5).
1) Hitachi Cambridge L aboratory, CB3 0HE Cambridge, United Kingdom 2) University of Cambridge, CB3 0HE Cambridge, United Kingdom 3) North CaroL ina State University, RaL eigh, NC 27695, United States of America 4) Monash University WeL Lington Road, CL ayton, Victoria 3800, AustraL ia 5) Universität Potsdam, 14476 Potsdam, Germany 6) AustraL ian Synchrotron, 800 BL ackburn Road, CL ayton, Victoria 3168, AustraL ia 7) University of CaL ifornia Santa Barbara Santa Barbara, CA 93106-5050, USA 8) PoL yera Corporation, 8045 L amon Ave, STE 140, Skokie, IL 60077-5318, USA

09:30 **High-performance gravure printed organic transistors** — **L 1.4**
Vivek Subramanian, Gerd Grau, Hongki Kang, and Rungrot KitsomboonL oha
EECS Department, University of CaL ifornia, BerkeL ey

10:00 **Coffee break**

10:30 **Understanding and Improving the OperationaL StabiL ity of PoL ymer FieL d-Effect Transistors** — **L 1.5**
Hung Phan, Ming Wang, MichaeL Ford, GuiL L ermo C. Bazan, Thuc-Quyen Nguyen
Department of Chemistry and Biochemistry, University of CaL ifornia Santa Barbara

11:00 **PL anar-Processed PoL ymer Transistors** — **L 1.6**
Yong Xu, Huabin Sun, Yong-Young Noh
Dongguk University, Department of Energy and MateriaL s Engineering, 30 PiL dong-ro, 1-giL , Jung-gu, SeouL 04620, RepubL ic of Korea

11:15 **QUANTIFYING THE VERTICAL PHASE SEPARATION IN C8-BTBT:PS OFETs AND ITS INFL UENCE ON THE EL ECTRICAL PERFORMANCE** — **L 1.7**
Ana Pérez-Rodríguez, Inés Temiño, Marta Mas-Torrent, Carmen OcaL , Esther Barrena
Institut de Ciència de MateriaL s de BarceL ona (ICMAB-CSIC), 08193-BeL L aterra (Spain)

11:30 **SmaL L -MoL ecuL e p-ChanneL and n-ChanneL Thin-FiL m Transistors for High-Frequency FL exibL e Organic CompL ementary Circuits** — **L 1.8**
Hagen KL auk
Max PL anck Institute for SoL id State Circuits

12:00 **L unch**

OL EDs and OpticaL Devices : Yong-Young Noh, Vivek Subramanian, Thuc-Quyen Nguyen

14:00 **Charge carrier trapping in organic semiconductors** — **L 1.1**
Naresh Kotadiya1, Davood Abbaszadeh2, Irina Crăciun1, PauL BL om1, and Gert-Jan WetzeL aer1
1 Max-PL anck-Institut für PoL ymerforschung, Mainz, Germany. 2 Zernike Institute for Advanced MateriaL s, University of Groningen, NetherL ands

14:30 **Direct X-ray Photoconversion in FL exibL e, UL tra-L ow VoL tage Organic Thin FiL m Devices** — **L 1.2**
L . Basiricò, A. Ciavatti, T. Cramer, P. Cosseddu, A. BonfigL io, B. Fraboni
University of BoL ogna – Department of Physics and Astronomy, viaL e Berti Pichat 6/2, BoL ogna, ItaL y University of CagL iari – Department of EL ectricaL and EL ectronic Engineering, Piazza d'Armi, CagL iari, ItaL y

14:45 **CrystaL Organic L ight-Emitting Diodes with PerfectL y Oriented Non-Doped Pt-Based Emitting L ayer** — **L 1.3**
Kwon-Hyeon Kim1, Jia-L ing L iao2, Chang-Ki Moon1, Hyo Jung Kim3, Yun Chi2, Jang-Joo Kim1
1. Department of MateriaL s science and engineering, SeouL NationaL University, SeouL , Korea (the RepubL ic of). 2. Department of Chemistry, NationaL Tsing Hua University, Hsinchu, Taiwan. 3. Department of Organic MateriaL Science and Engineering, Pusan NationaL University, Busan, Korea (the RepubL ic of).

15:00 **Enhancement of detection speed in organic (P3HT:PCBM:PMMA) photodiodes by insuL ator bL ending** — **L 1.4**
Noah StrobeL , RaL ph Eckstein, UL i L emmer, Gerardo Hernandez-Sosa
Noah StrobeL , RaL ph Eckstein, UL i L emmer, Gerardo Hernandez-Sosa: L ight TechnoL ogy Institute, KarL sruhe Institute of TechnoL ogy, Engesserstrasse 13, 76131 KarL sruhe, Germany Noah StrobeL , RaL ph Eckstein, UL i L emmer, Gerardo Hernandez-Sosa: InnovationL ab, Speyerer Strasse 4, 69115 HeideL berg, Germany: UL i L emmer: Institute of Microstructure TechnoL ogy, KarL sruhe Institute of TechnoL ogy, Hermann-von-HeL mhoL tz-PL atz 1, 76344 Eggenstein-L eopoL dshafen, Germany:

15:15 **Design of L anthanide-based OL EDs with remarkabL e circuL arL y poL arized eL ectroL uminescence** — **L 1.5**
Francesco Zinna, MariaceciL ia Pasini, Francesco GaL eotti, Chiara Botta, L orenzo Di Bari, Umberto GiovaneL L a
M. Pasini, F. GaL eotti, C. Botta, U. GiovaneL L a Istituto per L o Studio deL L e MacromoL ecoL e (ISMAC), CNR, Via A. Corti 12, 20133 , MiL ano, ItaL y F. Zinna, L . Di Bari Dipartimento di Chimica e Chimica IndustriaL e, Università di Pisa, via Moruzzi 13, I-56124 Pisa, ItaL y

15:30 **High definition in-situ eL ectro-opticaL characterization for RoL L to RoL L printed eL ectronics** — **L 1.6**
Francesco PastoreL L i
Organic Energy MateriaL s, Department of Energy Conversion and Storage, TechnicaL University of Denmark, Frederiksborgvej 399, 4000, RoskiL de, Denmark

15:45 **PL asmonics-based Organic FieL d-Effect Transistor for OpticaL L y ProgrammabL e Memory** — **L 1.7**
Ji Hwan Kim, Chang-Hyun Kim, Myung-Han Yoon*
SchooL of MateriaL s Science and Engineering, Gwangju Institute of Science and TechnoL ogy

16:00 **Coffee break**

16:15 **PL enary Session**

Doping : Thomas AnthopouL os, Hagen KL auk, Vivek Subramanian

08:30 **PoL arons in high mobiL ity organic semiconductors: computationaL insights.** **L 1.1**
DanieL e Fazzi
Max-PL anck-Institut für KohL enforschung (MPI-KOFO)

09:00 **Tight-binding approach to poL aron states in fuL L erene adducts** **L 1.2**
Beth Rice, Jarvist Frost and Jenny NeL son
ImperiaL CoL L ege L ondon

09:15 **Characterization of gap states reL ated to organic semiconductor p-doping** **L 1.3**
JuL ie Herrbach, AméL ie Revaux, Dominique VuiL L aume, Antoine Kahn
Univ. GrenobL e AL pes, CEA-L ITEN, GrenobL e, 38000, France , Univ. GrenobL e AL pes, CEA-L ITEN, GrenobL e, 38000, France , IEMN, CNRS, Univ. L iL L e, ViL L eneuve d'Ascq, 59652, France , Dept. of EL ectricaL Engineering, Princeton University, Princeton, NJ, 08544, USA

09:30 **Dopant-enhanced L uminescence in thiophene-pheneL yne co-oL igomer singL e crystaL s** **L 1.4**
V.V. Bruevich (1), V.G. Konstantinov (1), N.V. GuL tikov (1), O.D. Parashchuk (1), O.V. Borshchev (2), N.M. Surin (2), S.A. Ponomarenko (2, 3), D.Yu. Paraschuk (1)
1) FacuL ty of Physics & InternationaL L aser Center, L omonosov Moscow State University 2) Institute of Synthetic PoL ymeric MateriaL s of Russian Academy of Sciences 3) Chemistry Department, L omonosov Moscow State University

09:45 **Effects of Impurity Doping at ppm L eveL in PhotovoL taic Organic Semiconductors** **L 1.5**
Masahiro Hiramoto
Institute for MoL ecuL ar Science

10:00 **Coffee break**

10:30 **Investigating doping and poL arons in high-mobiL ity semiconducting poL ymers by in-situ Raman spectroscopy** **L 1.6**
Jana ZaumseiL , ChL oe Francis, DanieL e Fazzi
Universität HeideL berg, Institute for PhysicaL Chemistry, D-69120 HeideL berg, Germany, Universität HeideL berg, Institute for PhysicaL Chemistry, D-69120 HeideL berg, Germany & University of York, York YO10 5DD, United Kingdom, Max-PL anck-Institut für KohL enforschung (MPI-KOFO), D-45470 MühL heim an der Ruhr, Germany

11:00 **An aL ternative anionic poL yeL ectroL yte to PSS for aqueous PEDOT inks** **L 1.7**
Hofmann, A.I., KatsigiannopouL os, D., Mumtaz, M., Pecastaings, G., FL eury, G., PavL opouL ou, E., Brochon, C., Hadziioannou, G., CL outet, E.
[1] Université de Bordeaux, L aboratoire de Chimie des PoL ymères Organiques (L CPO), UMR 5629, B8 AL L ée Geoffroy Saint HiL aire, F-33615 Pessac Cedex, France [2] Centre NationaL de L a Recherche Scientifique (CNRS) ,L aboratoire de Chimie des PoL ymères Organiques (L CPO), UMR 5629, B8 AL L ée Geoffroy Saint HiL aire, F-33615 Pessac Cedex, France [3] Institut NationaL PoL ytechnique de Bordeaux (INP Bordeaux), L aboratoire de Chimie des PoL ymères Organiques (L CPO), UMR 5629, B8 AL L ée Geoffroy Saint HiL aire, F-33615 Pessac Cedex, France

11:15 **Charge-exciton interaction rate in organic fieL d-effect transistor by means of transient photoL uminescence eL ectromoduL ated spec** **L 1.4**
Wouter A. Koopman, Marco NataL i, Giovanni P. Donati, MicheL e Muccini, Stefano Toffanin
Wouter A. Koopman Universität Potsdam, Institute of Physics & Astronomy, KarL -L iebknecht-Straße 24-25, 14476 Potsdam, Germany, Marco NataL i CNR-ISMN, BoL ogna Via P. Gobetti 101, 40129 BoL ogna (BO), ItaL y, Giovanni P. Donati CNR-ISMN, BoL ogna Via P. Gobetti 101, 40129 BoL ogna (BO), ItaL y, MicheL e Muccini CNR-ISMN, BoL ogna Via P. Gobetti 101, 40129 BoL ogna (BO), ItaL y, Stefano Toffanin CNR-ISMN, BoL ogna Via P. Gobetti 101, 40129 BoL ogna (BO), ItaL y,

11:30 **PoL ymer structure and its impact on the conductivity of n-doped poL ymers** **L 1.9**
Simone Fabiano
L aboratory of Organic EL ectronics, Dept. of Science and TechnoL ogy (ITN), L inköping University, Norrköping, SE-601 74, Sweden

12:00 **L unch**

Structure Property ReL ationships III : Simone Fabiano, Jana ZaumseiL , DanieL e Fazzi

14:00 **MoL ecuL ar doping as a versatiL e tooL for enhancing the performance of organic thin-fiL m transistors** **L 1.1**
Thomas D. AnthopouL os
1. Department of Physics and The Centre for PL astic EL ectronics ImperiaL CoL L ege L ondon, L ondon SW7 2AZ (U.K.) 2. MateriaL s Science and Engineering, Division of PhysicaL Sciences and Engineering King AbduL L ah University of Science and TechnoL ogy ThuwaL 23955-6900 (Saudi Arabia)

14:30 **StabiL ity improvement and trap reduction in high-mobiL ity conjugated poL ymer devices through the use of moL ecuL ar additives** **L 1.2**
Mark NikoL ka1, Iyad NasraL L ah1, Katharina Broch1, Iain McCuL L och2, Henning Sirringhaus1
1 OptoeL ectronics Group, Cavendish L aboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, United Kingdom, 2 Department of Chemistry and Centre for PL astic EL ectronics, ImperiaL CoL L ege L ondon, L ondon SW7 2AZ, United Kingdom

14:45 **SiL ver Nanowires Grid EL ectrode Based VerticaL Organic FieL d Effect Transistor** **L 1.3**
L uiz G. S. AL bano, MigueL H. Boratto, CarL os F. O. Graeff
São PauL o State University (Unesp), SchooL of Sciences, Bauru, SP, 17033-360, BraziL

15:00 **Doped poL ymer semiconductors with uL trahigh and uL traL ow work functions for ohmic contacts** **L 1.8**
Peter HO, Cindy TANG
NationaL University of Singapore

15:15 **How can we understand morphoL ogy formation in poL ymer soL ar ceL L s?** **L 1.5**
René Janssen
Eindhoven University of TechnoL ogy

15:45 **Coffee break**

E-MRS

2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

SYMPOSIUM M

Novel transport phenomena in organic electronic devices: heat, spin and thermoelectricity

Symposium Organizers :

Emanuele Orgiu, INRS - EMT Centre, Montréal, Canada

Luis E. HUESO, CIC nanoGUNE, San Sebastian, Spain

Oliver FENWICK, Queen Mary, University of London, U.K.

Yoann OLIVIER, Université de Mons, Belgium

Be invited to publish in a special issue of Advanced Functional Materials.

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INSEIS

NIE

Tuesday 23 May 2017

Spin phenomena in organic semidconductors (I) : Luis Hueso

08:30 **Interface as key unit in organic spintronic devices** **M I.1**
Valentin Alek DEDIU
CNR-ISMN, via Gobetti 101, 40129 Bologna, Italy

09:00 **Efficient spin-flip excitation of a nickelocene molecule** **M I.2**
Maider Ormaza, Nicolas Bachellier, Marisa N. Faraggi, Benjamin Verlhac, Paula Abufager, Fabrice Scheurer, Philippe Ohresser, Loic Joly, Michelangelo Romeo, Marie-Laure Bocquet, Nicolas Lorente, Laurent Limot
Université de Strasbourg CNRS IPCMS, Université de Strasbourg CNRS IPCMS, Ecole Normale Superieure de Paris, Université de Strasbourg CNRS IPCMS, Instituto de Fisica de Rosario COCINET, Université de Strasbourg CNRS IPCMS, Synchrotron SOLEIL, Université de Strasbourg CNRS IPCMS, Université de Strasbourg CNRS IPCMS, Ecole Normale Superieure de Paris, Centro de Fisica de Materiales CFM/MPC, Université de Strasbourg CNRS IPCMS.

09:15 **Spin doping using transition metal phthalocyanine molecules** **M I.3**
A. Atxabal ^1, M. Ribeiro ^1, S. Parui ^1, L. Urreta ^1, E. Sagasta ^1, X. Sun ^1, 2, R. Llopis ^1, F. Casanova ^1, 3, L.E. Hueso ^1, 3
1. CIC nanoGUNE, Tolosa Hiribidea 76, 20018 Donostia-San Sebastian, Spain 2. National Center for Nanoscience and Technology 100190 Beijing, P. R. China 3. IKERBASQUE, Basque Foundation for Science, 48011 Bilbao, Spain

09:30 **Functionalizing spin-textured 2D electronic systems with tailored organic bonds** **M I.4**
M. Cinchetti
Experimentelle Physik VI, Technische Universität Dortmund, Germany

10:00 **Coffee Break**

Thermoelectricity in organic semiconductors (I) : Oliver Fenwick

10:30 **Electronic and ionic thermoelectric effects in conducting polymers** **M II.1**
Xavier Crispin
Linköping University

11:00 **Substrate temperature as a key element in tailoring the thermal conductivity in organic semiconductors** **M II.2**
Joan Ràfols-Ribé, Pablo Ferrando-Villalba, Marta González-Silveira, Llibertat Abad, Aitor Lopeandía, Javier Rodríguez-Viejo,
joan.rafols@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Pablo.Ferrando@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, marta.gonzalez@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Llibertat Abad, Institut de Microelectrònica de Barcelona, Centro Nacional de Microelectrònica&#8722,CSIC, Cerdanyola del Vallès, 08193, Spain, aitor.lopeandia@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Javier. Rodriguez@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain,

11:15 **Structure-to-property relationships for heat-transport in organic semiconductors** **M II.3**
Natalia Bedoya, Egbert Zojer
Institute of Solid State Physics Graz University of Technology Graz, Austria

11:30 **A heterogeneous model for thermoelectricity and electrical conduction in poly(3,4-ethylenedioxythiophene) polystyrene sulfonate** **M II.4**
Manting Qiu, Mark Baxendale
Queen Mary University of London, School of Physics and Astronomy, Mile End Road, London E1 4NS, United Kingdom

11:45 **Coulomb Interaction Dominates the Seebeck Coefficient in Monolayer OFETs** **M II.5**
Hassan Abdalla, Simone Fabiano, Martijn Kemerink
Linköping University (IFM), Linköping University (ITN), Linköping University (IFM)

12:00 **Lunch**

Spin phenomena in organic semidconductors (II) : Yoann Olivier

14:00 **Charge- and Spin Dynamics in Organic Spintronics** **M III.1**
Jairo Sinova (1), Shayan Hemmatiyan (1,2), Amaury Melo Souza (1), Sebastian Müller (1), Sergei A. Egorov (3,1), Denis Andrienko (4), Erik R. McNellis (1)
(1) Johannes Gutenberg University, Mainz, Germany, (2)Texas A & M University, College Station, USA, (3) University of Virginia, Charlottesville, USA, Max-Planck-Institute for Polymer Research, Mainz, Germany

14:30 **Spin injection and gate-tunable spin-charge conversion in single-layer graphene and single-walled carbon nanotubes** **M III.2**
M. Shiraishi(1) , S. Duehsnko(1), Y. Ando(1), E. Shigematsu(1), H. Ago(2), T. Takenobu(3)
(1) Kyoto University, Japan, (2) Kyushu University, Japan, (3) Nagoya University, Japan.

14:45 **Spin injection into organic semiconductors driven by ferromagnetic resonance** **M III.3**
Angela Wittmann1, Shun Watanabe2, Guillaume Schweicher1, Iain McCulloch3, Mario Amado4, Jason Robinson4, Henning Sirringhaus1
1Optoelectronics Group, Cavendish Laboratory, University of Cambridge, United Kingdom, 2Department of Advanced Materials Science, University of Tokyo, Japan, 3Department of Chemistry and Centre for Plastic Electronics, Imperial College London, United Kingdom, 4 Device Materials Group, Department of Materials Science and Metallurgy, University of Cambridge, United Kingdom

15:00 **Giant electrode dependence of tunneling electroresistance and data retention time in organic ferroelectric tunnel junctions** **M III.4**
Sayani Majumdar1, Binbin Chen1, 2, Qin QiHang1, Sebastiaan van Dijken1
1 Nanospin, Department of Applied Physics, Aalto University School of Science, FI-00076, Finland. 2 National Laboratory of Solid State Microstructures and Department of Physics, Nan-jing University, Nanjing 210093, China. Corresponding author e-mail: sayani.majumdar@aalto.fi

15:15 **Under-barrier spin-phonon relaxation in molecular magnets** **M III.5**
Alessandro Lunghi, Federico Totti, Roberta Sessoli and Stefano Sanvito
School of Physics and CRANN, Trinity College, Dublin, Ireland, Universita degli Studi di Firenze, Dipartimento di Chimica “Ugo Schiff”, Sesto Fiorentino, Via della Lastruccia 3-13, 50019, Italy, Universita degli Studi di Firenze, Dipartimento di Chimica “Ugo Schiff”, Sesto Fiorentino, Via della Lastruccia 3-13, 50019, Italy, School of Physics and CRANN, Trinity College, Dublin, Ireland

15:45 **Coffee Break**

16:15 **Engineering of highly conductive PEDOT thin films, ageing and stability** **M IV–P.1**
Magatte N. Gueye [1-2], Alexandre Carella [1], Etienne Yvenou [1], Jérôme Faure-Vincent [2], Stéphanie Pouget [3], Hanako Okuno [3], Renaud Demadrille [2], Jean-Pierre Simonato [1]
[1] University Grenoble Alpes, CEA/LITEN, F-38054 Grenoble, France. [2] University Grenoble Alpes, CEA, INAC, CNRS, INAC, F-38000 Grenoble, France. [3] University Grenoble Alpes, INAC-MEM, F-38000 Grenoble, France.

16:15 **Unsteady Numerical simulation of turbulent forced convection in a rectangular pipe with waved porous baffles.** **M IV–P.2**
STUDENT PHD FAKIRI FETHALLAH Pr, RAHMOUN KHADIDJA
*Department of Physics, Faculty of Science, Research Unit Materials and Renewable Energies U.R.M.E.R, University Abou Bekr Belkaid, BP 119, 13000 Tlemcen, Algeria

16:15 **Interfacial carrier behaviors of MoTe< sub>2< /sub> transistor: 1/f noise study and alternatives for modification of charges** **M IV–P.3**
Hyunjin Ji< sup>a,< /sup>*, Min-Kyu Joo< sup>b< /sup>, Gwanmu Lee< sup>a,b< /sup>, Ji-Hoon Park< sup>b< /sup> and Seong Chu Lim< sup>a,b< /sup>
< sup>a< /sup>Department of Energy Science, Sungkyunkwan University (SKKU), Suwon 16419, Korea, < sup>b< /sup>Center for Integrated Nanostructure Physics, Institute for Basic Science (IBS), Suwon 16419, Republic of Korea

16:15 **Spin dependent d-band center model for catalytic activity of the magnetic transition metals** **M IV–P.4**
Satadeep Bhattacharjee, Umesh. V. Waghmare, Ki-Ha Hong, Seung-Cheol Lee
Indo-Korea Science and Technology Center, Jawahalrla Nehru Center for Advanced Scientific Research, Hanbat University, Indo-Korea Science and Technology Center

16:15 **Doping and morphology in n- and p-type organic thermoelectric materials** **M IV–P.5**
Thibault Degousée, Tianjun Liu and Oliver Fenwick*
1. School of Engineering and Materials Science, Queen Mary University of London Mile End Road, London E1 4NS, United Kingdom. 2. The Organic Thermoelectrics Laboratory, Materials Research Institute, Queen Mary University of London Mile End Road, London E1 4NS, United Kingdom.

16:15 **Self-aligned single crystals of non-metallic endohedral fullerene N@C60 for high-mobility field-effect transistors** **M IV–P.6**
Xiaoming Zhao,* Wenda Shi, T. John S. Dennis
School of Physics and Astronomy, Queen Mary University of London, Mile End Road, London E1 4NS, United Kingdom. Email: xiaoming.zhao@qmul.ac.uk

16:15 **Extrinsic switching behavior of single Anthradithiophene molecule on Cu(111) surface** **M IV–P.7**
Sha Yang, Wei Liu
School of Materials Science and Engineering, Nanjing University of Science and Technology, China

16:15 **How to simulate local temperature and current variations in OLEDs for lighting** **M IV–P.8**
Georgii Krikun, Karin Zojer
Institute of Solid State Physics, NAWI Graz, Graz University of Technology, Petersgasse 16 8010 Graz, Austria

16:15 **High Power Factor and High Seebeck coefficient of Conjugated Polymers in Organic Thermoelectrics** **M IV–P.9**
Guangzheng Zuo and Martijn Kemerink *
Complex Materials and Devices, Department of Physics, Chemistry and Biology (IFM), Linköping University, Sweden E-mail: guangzheng.zuo@liu.se

16:15 **Spin-polarized solid-state transport across a structurally ordered organic tunnel barrier exhibiting spin chains** **M IV–P.10**
M. Bowen1, C. Barraud2, M. Gruber1, F. Ibrahim1, F. Djeghloul1, G. Garreau3, S. Boukari1, H. Isshiki, L. Joly1, M. Peter4, M. Studniarek1, V. Da Costa1, H. Jabbar1, H. Bulou1, V. Davesne1, U. Halisdemir1, J. Chen4, J. Arabski1, K. Bouzehouane2, C. Deranlot2, S. Fusil2, E. Otero5, F. Choueikani5, K. Chen5, P. Ohresser5, F. Bertran5, P. Le Fèvre5, A. Taleb-Ibrahimi5, W. Wulfhekel4, S. Hajjar-Garreau3, P. Wetzel3, P. Seneor2 , R. Mattana2, F. Petroff2, F. Scheurer1, W. Weber1, M. Alouani1, E. Beaurepaire1
1 Institut de Physique et Chimie des Matériaux de Strasbourg UMR 7504 CNRS, Université de Strasbourg, 23 Rue du Loess, BP 43, 67034 Strasbourg Cedex 2 France 2 Unité Mixte de Physique CNRS/Thales, CNRS, Thales, Univ. Paris-Sud, Université Paris Saclay, 91767 Palaiseau, France 3 Institut de Science des Matériaux de Mulhouse,CNRS-UMR 7361, Université de Haute-Alsace, 68057 Mulhouse, France 4 Physikalisches Institut, Karlsruhe Institute of Technology, Wolfgang-Gaede-Strasse 1, 76131 Karlsruhe, Germany & Institute of Nanotechnology, Karlsruhe Institute of Technology, 76021 Karlsruhe, Germany 5 Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France bowen@unistra.fr

16:15 **Thermal, Electrical, and Optical Properties Correlation of Sulfuric Acid Treated PEDOT-PSS Thin Films** **M IV–P.11**
Kenneth Shaughnessy, Chester Szwejkowski, Patrick Hopkins, Costel Constantin
Department of Physics and Astronomy, James Madison University, Harrisonburg, VA 22807, USA, Department of Physics and Astronomy, James Madison University, Harrisonburg, VA 22807, USA, Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, VA 22904, USA,Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, VA 22904, USA

16:15 **Highly Spin-Polarized Electronic Interface States: A Common Feature Of Ferromagnetic Metal-Organic Interfaces** **M IV–P.12**
F. Djeghloul1, M. Gruber1,3, E. Urbain1, L. Joly1, S. Boukari1, J. Arabski1, H. Bulou1, F. Scheurer1, F. Bertran2, P. Le Fèvre2, A. Taleb-Ibrahimi2, W. Wulfhekel3, G. Garreau4, S. Hajjar-Garreau4, P. Wetzel4, M. Alouani1, E. Beaurepaire1, M. Bowen1, W. Weber1
1Institut de Physique et Chimie des Matériaux de Strasbourg, CNRS-UMR 7504, Université de Strasbourg, 23 rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France 2Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France 3Physikalisches Institut, Karlsruhe Institute of Technology, Wolfgang-Gaede-Strasse 1, 76131 Karlsruhe, Germany 4Institut de Science des Matériaux de Mulhouse, CNRS-UMR 7361, Université de Haute-Alsace, 68057 Mulhouse, France

16:15 **Theoretical study of the static polarizability and second hyperpolarizability of substituted hexadecaocta-ene by AM1, PM3, PM6 a** **M IV–P.13**
D. TAHARCHAOUCHE1, F. MECHACHTI2, ILHEM. R. KRIBA3, A.DJEBAILI2*
1 Faculty of Sciences- Department of Chemistry - University of Batna 2- Algeria 2 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna 1- Algeria 3 Faculty of Engineering Sciences- Department of Physics - University of Batna 2- 05000- Algeria

16:15 **KINETIC AND COMPARATIVE STUDY OF THE ISOMERIZATION REACTION OF SUBSTITUTED TETRADECAHEPTA-ENE BY AB-INITIO AND DFT METHOD** **M IV–P.14**
F. MECHACHTI1, A. DJEBAILI1*, ILHEM. R. KRIBA2
1 Laboratory of chemistry and environmental chemistry L.C.C.E - university of batna 1- Algeria 2 Faculty of Engineering Sciences- Department of Physics - University of Batna 2- Algeria

16:15 **Engineering Charge Transport Physics from Hopping to Band-Like through Molecular Design** **M IV–P.15**
M.-A. Stoeckel(1), M. Gobbi(1), F. Liscio(2), D. Dudenko(3), Z. Mics(4), A. Guilbert(5), M.-V. Nardi(6), Y. Oliver(3), L. Pasquali(7), M. Bonn(4), J. Nelson(5), D. Beljonne(3), E. Orgiu(1,8), P. Samorì(1)
(1) Institut de Science et d'Ingénierie Supramoléculaires (I.S.I.S.), 8 allée Gaspard Monge, 67083, Strasbourg, France (2) CNR - IMM Sezione di Bologna Via P. Gobetti 101 40129 Bologna Italy (3) Université de Mons, 20 Place du Parc, 7000 Mons Belgium (4) Max-Planck-Institut für polymerforshung, Ackermannweg 10, 55128 Mainz, Germany (5) Imperial College London, South Kensington Campus, London SW7 2AZ, UK (6) Istituto dei Materiali per l'Elettronica ed il Magnetismo, IMEM-CNR, Sezione di Trento, via alla Cascata 56/C, Povo, 38100 Trento, Italy (7) Dipartimento di Ingegneria E. Ferrari, Università di Modena e Reggio Emilia, Via Vivarelli (10), 41125 Modena (Italy) (8) INRS-Centre Énergie Matériaux Télécommunications, 1650 Blv. Lionel-Boulet, J3X 1S2 Varennes (Québec)

16:15 **Graphene as an electrode for solution-processed organic transistors** **M IV–P.16**
Subir Parui ^1, Mário Ribeiro ^1, Ainhoa Atxabal ^1, Roger Llopis ^1, Fèlix Casanova ^1, 2, Luis E. Hueso ^1, 2,
1 CIC nanoGUNE, 20018 Donostia-San Sebastian, Basque Country, Spain 2 IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Basque Country, Spain

16:15 **High temperature stable single carrier hole only devices** **M IV–P.17**
Shahidul Alam, Peter Fischer, Christian Kästner, Chetan R. Singh, Ulrich S. Schubert, Harald Hoppe
Center for Energy and Environmental Chemistry Jena (CEEC Jena), Friedrich Schiller University Jena, Philosophenweg 7a, 07743 Jena, Germany, Laboratory of Organic and Macromolecular Chemistry (IOMC), Friedrich Schiller University Jena, Humboldstrasse 10, 07743 Jena, Germany, Institute of Materials Engineering, Technische Universität Ilmenau, Gustav-Kirchhoff-Str. 6, 98693 Ilmenau, Germany, Institute of Thermodynamics and Fluid Mechanics, Technische Universität Ilmenau, Am Helmholtzring 1, 98693 Ilmenau, Germany, Department of Macromolecular Chemistry I, Universität Bayreuth, D-95440 Bayreuth, Germany

16:15 **On surface spin-doping of metallocenes** **M IV–P.18**
Bachellier Nicolas, Ormaza, Maider, Verlhac Benjamin, Robles Roberto, Abufager Paula, Vérot Martin, Le Bahers Tangui, Faraggi Marisa, Lorente Nicolas, Bocquet Marie-Laure, Limot Laurent
Université de Strasbourg, CNRS, IPCMS, UMR 7504, Strasbourg, France, Université de Strasbourg, CNRS, IPCMS, UMR 7504, Strasbourg, France, Université de Strasbourg, CNRS, IPCMS, UMR 7504, Strasbourg, France, Catalan Institute of Nanoscience and Nanotechnology, Barcelona, Bellaterra (Barcelona), Spain, Instituto de Fisica de Rosario, Consejo Nacional de Investigaciones, Cientificas y Tecnicas (CONICET) and Universidad Nacional de Rosario, Rosario, Argentina, ENS Lyon, Laboratoire de Chimie, UMR 5182 CNRS, Lyon, France, ENS Lyon, Laboratoire de Chimie, UMR 5182 CNRS, Lyon, France, Ecole Normale Supérieure, Département de Chimie, ENS-CNRS-UPMC UMR 8640, Paris, France, Donostia International Physics Center (DIPC), Donostia-San Sebastian, Spain, Ecole Normale Supérieure, Département de Chimie, ENS-CNRS-UPMC UMR 8640, Paris, France, Université de Strasbourg, CNRS, IPCMS, UMR 7504, Strasbourg, France,

16:15 **Molecular design and control of fullerene-based bi-thermoelectric materials** **M IV–P.19**
Iain Grace (1), Laura Rincón-García (2), Ali K. Ismael (1), Charalambos Evangeli (2), Gabino Rubio-Bollinger (2), Kyriakos Porfyrakis (3), Nicolás Agraït (2), Colin J. Lambert (1)
1. Department of Physics, Lancaster University, Lancaster LA1 4YW, UK, 2. Departamento de Física de la Materia Condensada and Condensed Matter Physics Center (IFIMAC), Universidad Autónoma de Madrid, E-28049 Madrid, Spain, 3. Department of Materials, University of Oxford, Oxford OX1 3PH, UK

16:15 **Confined growth effect on thermoelectric properties of organic semiconductors** **M IV-P.20**
Fabiola Liscio, Alberto Roncaglia, Fulvio Mancarella, Luca Belsito, Federico Prescimone, Emilia Benvenuti, Stefano Toffanin, Denis Gentili, Massimiliano Cavallini, Silvia Milita
Fabiola Liscio, Istituto per la Microelettronica e i Microsistemi (IMM) -Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Alberto Roncaglia, Istituto per la Microelettronica e i Microsistemi (IMM) -Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Fulvio Mancarella, Istituto per la Microelettronica e i Microsistemi (IMM) -Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Luca Belsito, Istituto per la Microelettronica e i Microsistemi (IMM) -Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Silvia Milita Istituto per la Microelettronica e i Microsistemi (IMM) -Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Federico Prescimone, Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Emilia Benvenuti, Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Stefano Toffanin, Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Denis Gentili, Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy, Massimiliano Cavallini, Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy,

16:15 **Voltage and Thermally Driven Roll-to-Roll Organic Printed Transistor Made in Ambient Air Conditions** **M IV-P.21**
Francesco Pastorelli
Organic Energy Materials, Department of Energy Conversion and Storage, Technical University of Denmark, Frederiksborgvej 399, 4000, Roskilde, Denmark

16:15 **Electron tunneling in the &#945,-T3 model** **M IV-P.22**
F. Bouhadida, L. Mandhour,* A. Daboussi and S. Charfi-Kaddour
Laboratoire de Physique de la Matière Condensée, Faculté des Sciences de Tunis, Université de Tunis El Manar, Campus Universitaire Tunis, El Manar, 2092 Tunis, Tunisia.

16:15 **Polyaniline-based composites as thermoelectric materials** **M IV-P.23**
Alessia Famengo, Stefano Boldrini, Simone Battiston, Laura Crociani, Alberto Ferrario, Stefania Fiameni, Cesare Pagura, Monica Fabrizio
Institute of Condensed Matter Chemistry and Technologies for Energy - National Research Council of Italy, Corso Stati Uniti, 4 - 35127 Padova- Italy

Wednesday 24 May 2017

Heat/Spin transport and magnetic field effects in organic semiconductors : Emanuele Orgiu

08:30 **Spin-currents and thermoelectric properties in high mobility organic semiconductors** **M V.1**
Henning Sirringhaus
Cavendish Laboratory, University of Cambridge, Cambridge CB3 0HE

09:00 **Effect of a ferromagnetic scanning tunneling microscope Co tip on a single Co-phthalocyanine molecule adsorbed on ferromagnetic** **M V.2**
A. Jaafar1,2, I. Rungger3, S. Sanvito3, M. Alouani1
1Université de Strasbourg, IPCMS, UMR 7504, 23 rue du Loess, 67034 Strasbourg, France. 2Laboratoire de Physique de Matériaux, Lebanese University, Hadath, Beirut Lebanon. 3School of Physics and CRANN, Trinity College, Dublin 2, Ireland.

09:15 **Effect of growth-induced X-ray exposure on the transport, magnetotransport and luminescence properties of OLEDs** **M V.3**
R. Monflier, F. Sekli Belaidi, L. Salvagnac, E. Bedel Pereira, I. Séguy, J.F. Bobo
CNRS LAAS, 7 av. du Colonel Roche, F31400 Toulouse, France, CEMES CNRS, 29, rue J. Marvig F31055 Toulouse, France

09:30 **Dependence of Traps on Organic Magnetic Field Effects Studied by Impedance Spectroscopy** **M V.4**
Song-Toan PHAM and Hirokazu TADA
Graduate School of Engineering Science, Osaka University, Toyonaka 560-8531, Japan

09:45 **Spin dependent tunneling through asymmetric barriers in organic magnetic tunnel junctions** **M V.5**
Yu Jeong Bae1, Andrew Pratt2&3, Nyun Jong Lee1, Chong Seung Yoon4, Tae Hee Kim1
1Department of Physics, Ewha Womans University, Seoul 03760, Republic of Korea, 2Department of Physics, University of York, York YO10 5DD, U.K., 3National Institute for Materials Science, Tsukuba, Japan, 4Division of Materials Science & Engineering, Hanyang University, Seoul133-791, Republic of Korea

10:00 **Coffee Break**

Spin phenomena in organic semidconductors (III) : Marta Mas-Torrent

10:30 **INVITED** **M VI.1**
Peter Bobbert

11:00 **Current crowding in hybrid planar devices: issues for spintronics** **M VI.2**
Tindara Verduci, Guillaume Chaumy, Jean-Francois Dayen, Nicolas Leclerc, Eloise Devaux, Emanuele Orgiu, Paolo Samori, Bernard Doudin
Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), Université de Strasbourg, UMR 7504 CNRS-UdS, 23 rue du Loess, 67034 Strasbourg, France , Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), Université de Strasbourg, UMR 7504 CNRS-UdS, 23 rue du Loess, 67034 Strasbourg, France , Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), Université de Strasbourg, UMR 7504 CNRS-UdS, 23 rue du Loess, 67034 Strasbourg, France , Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé (ICPEES), UMR 7515 CNRS-UdS, 25 rue Becquerel, 67087 Strasbourg, France , ISIS & icFRC, Université de Strasbourg & CNRS, 8 allée Gaspard Monge, 67000 Strasbourg, France , ISIS & icFRC, Université de Strasbourg & CNRS, 8 allée Gaspard Monge, 67000 Strasbourg, France and Institut National de la Recherche Scientifique (INRS), EMT Center, 1650 Blvd. Lionel-Boulet, J3X 1S2 Varennes, CA , ISIS & icFRC, Université de Strasbourg & CNRS, 8 allée Gaspard Monge, 67000 Strasbourg, France , Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), Université de Strasbourg, UMR 7504 CNRS-UdS, 23 rue du Loess, 67034 Strasbourg, France

11:15 **Multi-Scale Modeling of Organic Semi-Conductors: Spin-Dynamics from Heat- and Charge-Dynamics** **M VI.3**
Erik R. McNellis (1), Shayan Hemmatiyan (1,2), Amaury Melo Souza (1), Sebastian Müller (1), Sergei A. Egorov (1,3), Denis Andrienko (4), Jairo Sinova (1)
(1) Johannes Gutenberg University, Mainz, Germany, (2) Texas A & M University, College Station, USA, (3) University of Virginia, Charlottesville, USA, (4) Max-Planck-Institute for Polymer Research, Mainz, Germany

11:30 **Unraveling Unprecedented Charge Carrier Mobility through Structure Property Relationship of Four Isomers of C12-BTBT** **M VI.4**
Guillaume Schweicher, Yusuke Tsutsui, Vincent Lemaur, Yoann Olivier, Silvio Osella, Dmytro Dudenko, David Beljonne, Jérôme Cornil, Shu Seki, Yves H. Geerts
Dr. G. Schweicher, Prof. Y. H. Geerts Laboratoire de Chimie des Polymères Faculté des Sciences Université Libre de Bruxelles (ULB) CP206/1, Boulevard du Triomphe, 1050 Brussels, Belgium E-mail: ygeerts@ulb.ac.be Y. Tsutsui, Prof. S. Seki Department of Molecular Engineering Graduate School of Engineering Kyoto University Nishikyo-ku, Kyoto 615-8510, Japan E-mail: seki@moleng.kyoto-u.ac.jp Dr. V. Lemaur, Dr. Y. Olivier, Dr. S. Osella, Dr. D. Dudenko, Dr. D. Beljonne, Dr. J. Cornil Laboratory for Chemistry of Novel Materials University of Mons Place du Parc 20, B-7000 Mons, Belgium

11:45 **Probing Metal-Organic Interfaces with Hot Electrons** **M VI.5**
Frank Ortmann
Technische Universität Dresden

12:00 **Lunch**

Thermoelectricity in organic semiconductors (II) :
Mariano Campoy-Quiles

14:00 **Conductivity and Seebeck Coefficient in Doped Organic Semiconductors** **M VII.1**
Hassan Abdalla, Guangzheng Zuo, Martijn Kemerink
Complex Materials and Devices, Department of Physics, Chemistry and Biology (IFM), Linköping University, 58183 Linköping, Sweden

14:30 **Thermal conductivity of Polycarbonate: The effect of ordered nanostructuring** **M VII.2**
Pedro Resende, Liliana Vera, Ruy Sanz, Aurora Nogales, Marisol Martín-González
Pedro Resende, Instituto de Microelectrónica de Madrid (IMM-CSIC), Calle de Isaac Newton 8, Tres Cantos, 28760 Madrid, Spain, Liliana Vera, Instituto de Microelectrónica de Madrid (IMM-CSIC), Calle de Isaac Newton 8, Tres Cantos, 28760 Madrid, Spain, Ruy Sanz, Instituto de Microelectrónica de Madrid (IMM-CSIC), Calle de Isaac Newton 8, Tres Cantos, 28760 Madrid, Spain, Aurora Nogales, Instituto de Estructura de la Materia, CSIC, Calle Serrano 121, Madrid 28006, Spain, Marisol Martín-González, Instituto de Microelectrónica de Madrid (IMM-CSIC), Calle de Isaac Newton 8, Tres Cantos, 28760 Madrid, Spain,

14:45 **Electrical and thermal transport properties of conducting polymer based nanostructured composites** **M VII.3**
Rakibul Islam, Roch Chan-Yu-King, Carole Gors, and Frederick Roussel
University of Lille- Sciences and Technologies, Unité Matériaux et Transformations (UMET) – UMR CNRS 8207, UFR de Physique, Bat P5, 59655 Villeneuve d'Ascq, France,University of Science and Arts of Oklahoma, Chickasha, OK 73018, USA, University of Lille- Sciences and Technologies, Unité Matériaux et Transformations (UMET) – UMR CNRS 8207, UFR de Physique, Bat P5, 59655 Villeneuve d'Ascq, France,University of Lille- Sciences and Technologies, Unité Matériaux et Transformations (UMET) – UMR CNRS 8207, UFR de Physique, Bat P5, 59655 Villeneuve d'Ascq, France

15:00 **Investigating the doping efficiency of organic semiconductors by thermoelectric measurements** **M VII.4**
Bernhard Nell, Markus Krammer, Karin Zojer, Koen Vandewal
Dresden Integrated Center for Applied Physics and Photonic Materials, Technische Universität Dresden, Dresden, Germany, Institute of Solid State Physics, Technische Universität Graz, Graz, Austria, Institute of Solid State Physics, Technische Universität Graz, Graz, Austria, Dresden Integrated Center for Applied Physics and Photonic Materials, Technische Universität Dresden, Dresden, Germany

15:15 **Development of a ZT-measurement system for thin films plus additional Hall constant determination in a temperature range from LN** **M VII.5**
Linseis, Vincent, Marx, Hans-W., Reith, Heiko, Völklein, Friedemann, Nielsch, Kornelius,
Universität Hamburg, IFN, Jungiusstraße 11 B, 20355 Hamburg, Germany, Linseis Messgeräte GmbH, Vielitzer Str. 43, 95100 Selb, Germany, Hochschule RheinMain, Am Brückweg 26, 65428 Rüsselsheim, Germany,

15:30 **Coffee Break**

16:15 **Plenary Session**

Thursday 25 May 2017

Joint Session with Symposium C (I) :
Natalie Banerji

08:30 **Molecular semiconductors for LEDs and solar cells: designing around the Coulomb interaction** **M VIII.1**
Richard Friend
University of Cambridge

09:00 **Unravelling the crystal structure of PTB7 polymer using oriented crystallization induced by high temperature rubbing** **M VIII.3**
L. Biniek,1 A. Hamidi-Sakr,1 Y. J. Dappe,3 L. Grodd,2 S. Grigorian,2 M. Brinkmann1
(1) Université de Strasbourg, CNRS, ICS UPR 22, F-67000 Strasbourg, France. (2) Solid State Physics, University of Siegen, Walter Flex Strasse-3, D-57068 Siegen, Germany. (3) SPEC, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91191 Gif sur Yvette Cedex, France.

09:15 **Thermoelectric properties of highly conductive printed organic thin films** **M VIII.4**
Mario Caironi1, Davide Beretta1,2, Matteo Massetti1,2,Alex Barker1, Isis Maqueira-Albo1,2, Alberto Calloni2, Gianlorenzo Bussetti2, Giorgio Dell&#8217,Erba1,3, Lamberto Duò2, Annamaria Petrozza1, Guglielmo Lanzani1,2
Italy

09:30 **Monomolecular and Bimolecular Recombination of Electron– Hole Pairs at the Interface of a Bilayer Organic Solar Cell** **M VIII.5**
Anna Köhler
University of Bayreuth

10:00 **Coffee Break**

Joint Session with Symposium C (II) :
Alek Dediu

10:30 **Charge transport and spin mixing in organic photovoltaic devices** **M IX.1**
Jianpu Wang1,2, Girish Lakhwani2,3, Feng Gao2,4, Alexei Chepelianskii2,5, and Neil C. Greenham2
1Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing Tech University (NanjingTech), Nanjing 211816, P.R. China 2Cavendish Laboratory, J.J. Thomson Avenue, Cambridge CB3 0HE, United Kingdom 3School of Chemistry, University of Sydney, NSW 2006, Australia 4Biomolecular and Organic Electronics, IFM, Linköping University, Linköping 58183, Sweden 5LPS, Universite Paris-Sud, CNRS, UMR 8502, F-91405, Orsay, France

11:00 **Effect of electron-phonon interaction on electronic structure and optical absorption of halide perovskites** **M IX.3**
Jia-Yue Yang, Ming Hu
Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany

11:15 **Modulating the ferromagnet/molecule spin hybridization using an artificial magnetoelectric** **M IX.4**
Michał Studniarek, Salia Cherifi-Hertel, Etienne Urbain, Ufuk Halisdemir, Rémi Arras, Beata Taudul, Filip Schleicher,Marie Hervé, Charles-Henri Lambert, Abbass Hamadeh, Loïc Joly, Fabrice Scheurer, Guy Schmerber, Victor Da Costa, Olivia Mauguin, Ludovic Largeau, Florian Leduc, Fadi Choueikani, Edwige Otero, Wulf Wulfhekel, Jacek Arabski, Philippe Ohresser, Wolfgang Weber, Eric Beaurepaire, Samy Boukari,Martin Bowen
Dr. M. Studniarek, D. S. Cherifi-Hertel, E. Urbain, Dr. U. Halisdemir, B. Taudul, Dr. F. Schleicher, Dr. L. Joly, Dr. F. Scheurer, Guy Schmerber, Dr. V. Da Costa, J. Arabski, Prof. W. Weber, Dr. E. Beaurepaire, Dr. S. Boukari, Dr. M. Bowen Institut de Physique et Chimie des Matériaux de Strasbourg UMR 7504 CNRS, Université de Strasbourg, 23 Rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France E-mail: bowen@unistra.fr Dr. M. Studniarek, F. Leduc, Dr. F. Choueikani, Dr. E. Otero, Dr. P. Ohresser Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France Dr. Rémi Arras CEMES, Université de Toulouse, CNRS-UPR 8011, UPS, 29 rue Jeanne-Marvig, F-31055 Toulouse, France, Dr. M. Hervé, Prof. W. Wulfhekel Physikalisches Institut, Karlsruhe Institute of Technology, Wolfgang-Gaede-Str. 1, 76131 Karlsruhe, Germany Dr. C-H. Lambert, Dr. A. Hamadeh Institut Jean Lamour UMR 7198 CNRS, Université de Lorraine, BP 70239, 54506 Vandoeuvre les Nancy Cedex, France Dr. Olivia Mauguin, Dr. Ludovic Largeau CNRS - C2N / Site de Marcoussis, Route de Nozay, 91460 Marcoussis, France.

11:30 **First-principles modeling of organic thermoeletric materials** **M IX.5**
Zhigang Shuai, Dong Wang, Wen Shi, Yajing Sun
MOE Key Laboratory of Organic Opto-Electronics and Molecular Engineering, Department of Chemistry, Tsinghua University, 100084 Beijing, China

12:00 **Lunch**

Thermoelectricity in organic semiconductors (III) : Fabiola Liscio

14:00 **Ionic Effects in Organic Thermoelectrics** **M X.1**
Elayne Thomas, Shubhaditya Majumdar, Gabriel Sanoja, Michael Chabinyc, Rachel Segalman
UC Santa Barbara

14:30 **Thermoelectric properties of single-component pure organic metals: optimization of carrier concentration and mobility** **M X.2**
Yuka Kobayashi, Jean-Baptiste Vaney, Takao Mori, Yoshitaka Matsushita, Takeshi Terauchi
National Institute for Materials Science (NIMS)

14:45 **Integrating the thermoelectric and sensing properties of PEDOT materials into self-powered devices** **M X.3**
Prospero Taroni Junior [1,2], Natalie Stingelin-Stutzman [2], Martin Heeney [3], Mark Baxendale [4], Giovanni Santagiuliana [1], Han Zhang [1] and Emiliano Bilotti [1]
[1] School of Engineering and Material Sciences, Queen Mary University of London, Mile End Road, E1 4NS, London, UK [2] Dept. of Materials and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, UK [3] Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK [4] School of Physics and Astronomy, G. O. Jones building, Mile End Road, London, E1 4NS, UK

15:00 **Quantum-interference-enhanced thermoelectricity in single-molecule junctions** **M X.4**
Colin J. Lambert
Department of Physics, Lancaster University, Lancaster, LA1 4YB, United Kingdom

Thermoelectricity in organic semiconductors (IV) : Xavier Crispin

16:00 **Polymer/Carbon nanotube composites for thermoelectrics** **M XI.1**
Mariano Campoy Quiles
Nanostructured Materials Department, Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Spain

16:30 **Anisotropy of charge conductivity and thermoelectric properties in oriented conducting polymer films** **M XI.2**
Amer Hamidi-Sakr, Laure Biniek, Jean-Louis Bantignies, David Maurin, Laurent Herrmann, Patrick Algayer, Nicolas Leclerc, Vishnu Vijayakumar, Nicolas Zimmermann, Patrick Lévèque, Martin Brinkmann
Université de Strasbourg, CNRS, Institut Charles Sadron (UPR22), F67000 Strasbourg, France, Université de Montpellier, Laboratoire Charles Coulomb, F34095 Montpellier, France, Université de Strasbourg, CNRS, ICPEES, UMR7515, F67000 Strasbourg, France, Université de Strasbourg, CNRS, ENGEES, INSA, ICUBE UMR 7357, F-67000 Strasbourg, France

16:45 **Optimization of thin film morphology and crystallinity for organic field-effect transistors prepared by solution shearing** **M XI.3**
A. Tamayo, S. Galindo, F. Leonardi, F. Del Pozo, R. Pfattner, I. Temiño, M. Mas-Torrent
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) and CIBER-BBN, Campus UAB, 08193 Bellaterra, Spain. E-mail:mmas@icmab.es

17:00 **Poster Prizes and Closing Remarks**

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM N

Semiconductor nanostructures towards electronic and opto-electronic device applications – VI

Symposium Organizers :

Iwan MOREELS, Italian Institute of Technology, Genova, Italy

Jean-Charles RIBIERRE, Kyushu University, Fukuoka, Japan

Juan CLIMENTE, Universitat Jaume, Castello de la Plana, Spain

Pascal ANDRE, RIKEN, Saitama, Japan

Peter REECE, University of New South Wales, Sydney, Australia

Monday 22 May 2017

08:35 **Welcome**

Inorganic nanowires/nanorods : Iwan Moreels

08:45 **Growth of in-plane Ge nanowires obtained by solid-liquid-solid mechanism** **N 1.1**
Edy Azrak 1, Wanghua Chen 2, Sébastien Duguay 1, Philippe Pareige 1, Pere i Roca Cabarrocas 2
1- Groupe de Physique des Matériaux, Université et INSA de Rouen - UMR 6634 CNRS – Normandie Université, Avenue de l'université BP 12, 76801 Saint Etienne du Rouvray, France 2- LPICM, CNRS, Ecole polytechnique, Université Paris-Saclay, 91128 Palaiseau, France

09:00 **Synthesis and Characterization of MnO2 Nanowires: Lattice vibrations and Photoluminescence properties** **N 1.2**
Arbab Mohammad Toufiq, Fengping Wang
(Arbab Mohammad Toufiq) Department of Physics, Hazara University Mansehra, 21300 Mansehra, Pakistan (Arbab Mohammad Toufiq, Fengping Wang) School of Mathematics and Physics, Department of Physics, University of Science and Technology Beijing, 10083, Beijing, P. R. China

09:15 **Temperature and hydrostatic pressure effects on a single dopant states in hollow cylindrical core/shell quantum dot** **N 1.3**
M. El-Yadri, E. Feddi, N. Aghoutane, F. Dujardin
Groupe d?Optoélectronique des Boites Quantiques de Semiconducteurs, Mohammed V University in Rabat, Morocco.

09:30 **Low crystal quality of the hedgehog-like ZnO nanorods grown by hydrothermal process without seeding layer** **N 1.4**
Zdenek Remes, Maksym Buryi, Daniel Simek, Martin Ledinsky, Julia Micova
Institute of Physics CAS, Praha, Czech Republic, Institute of Chemistry SAS, Bratislava, Slovak Republic

09:45 **Birth of strange micro structures from Al-doped ZnO nanorods and it's effect on the field emission characteristics** **N 1.5**
Marziyeh Advand 1,2, Mohammad Reza kolahdouz1,*, Amir Hossein Karami 1, Abbas Rostami 1, Nima Hajiabdolrahim 1, Fatemeh Salehi 1
1. School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran.
2. Department of Electrical and Computer Engineering, Babol Noshirvani University of Technology, Babol, Iran. *. Corresponding Author

10:00 **Coffee break**

Perovskite materials and devices : Jean-Charles Ribierre

10:30 **Solution-processed organic-inorganic perovskite field-effect transistors with high carrier mobilities** **N 2.1**
Toshinori Matsushima,1-3, Fabrice Mathevet,4 Benoît Heinrich,5 Shinobu Terakawa,1 Takashi Fujihara,6 Chuanjiang Qin,1,3 Atula S. D. Sandanayaka,1,3 Jean-Charles Ribierre,1,3 and Chihaya Adachi1-3
1Center for Organic Photonics and Electronics Research, Kyushu University, 744 Motooka, Nishi, Fukuoka 819-0395, Japan, 2International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, 744 Motooka, Nishi, Fukuoka 819-0395, Japan, 3Japan Science and Technology Agency (JST), ERATO, Adachi Molecular Exciton Engineering Project, 744 Motooka, Nishi, Fukuoka 819-0395, Japan, 4Institut Parisien de Chimie Moléculaire (IPCM), Chimie des Polymères, Sorbonne Université, UPMC Université Paris 06, UMR 8232, F-75005 Paris, France, 5Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), CNRS-Université de Strasbourg, UMR 7504, F-67034 Strasbourg, France, 6Innovative Organic Device R&D Laboratory, Institute of Systems, Information Technologies and Nanotechnologies (ISIT), Fukuoka Industry-Academia Symphonicity (FiaS) 2-110, 4-1 Kyudaishinmachi, Nishi, Fukuoka 819-0388, Japan

11:00 **Methylammonium lead halide inks in environmental friendly solvent** **N 2.2**
Roberto Sorrentino 1,2, Peter Topolovsek 2, 3, Vijay Venugopalan 1,2, Diego Nava 1,2, Mario Caironi 2, Annamaria Petrozza 2
1. Physics Department - Politecnico di Milano, Piazza L. da Vinci 32, 20133, Milan, Italy.
2. Center for Nano Science and Technology @ Polimi – Istituto Italiano di Tecnologia, Via G. Pascoli 70/3, 20133, Milan, Italy. 3. University of Ljubljana, Kongresni 12, 1000 Ljubljana, Slovenia.

11:15 **Synthesis of all-inorganic perovskite nanocrystals yields non-perovskite nanostructures** **N 2.3**
Chris de Weerd1, Leyre Gomez1, Junhao Lin2, Kazutomo Suenaga2, Yasufumi Fujiwara3, Tom Gregorkiewicz1
1 University of Amsterdam, 2 National Institute of Advanced Industrial Science and Technology, Japan, 3 Osaka University.

11:30 **Photon Reabsorption in Mixed CsPbCl3:CsPbI3 Perovskite Nanocrystal Films for Light-Emitting Diodes** **N 2.4**
Nathaniel J. L. K. Davis, Francisco J. de la Peña, Maxim Tabachnyk, Johannes M. Richter, Robin D. Lamboll, Edward P. Booker, Florencia Wisnivesky Rocca Rivarola, James T. Griffiths, Caterina Ducati, S. Matthew Menke, Felix Deschler and Neil C. Greenham
Davis, Tabachnyk, Richter, Lamboll, Booker, Menke, Deschler, Greenham = Cavendish Laboratory, University of Cambridge, J.J. Thomson Avenue, Cambridge, CB3 0HE, UK de la Pena, Wisnivesky Rocca Rivarola, Griffihes, Ducati = Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge, CB3 0FS, UK

11:45 **Theoretical prediction of half-metallic nature in double perovskites Sr2CrZrO6** **N 2.5**
B. Bouadjemi,S.Haid, S.Bentata, W. Benstaali, A. Abbad, T.Lantri , A.Zitouni andA. Zoubir
Faculty of Sciences and Technology, BP227, Laboratory of Technology and Solid Propertie, Abdelhamid Ibn Badis University, Mostaganem (27000) Algeria
E-MAIL : bbouadjemi@yahoo.fr

12:00 **FIRST PRINCIPLE STUDY OF STRUCTURAL, ELECTRONIC AND MAGNETIC PROPERTIES OF DOUBLE PEROVSKITES Ba2CrMoO6** **N 2.6**
Samir BENTATA and Amel SOUIDI
Laboratory of technology and solid's properties, Faculty of Sciences and Technology, Abdelhamid Ibn Badis University BP 227 Mostaganem 27000, Algeria

12:15 **Lunch**

Theory and calculation methods : Juan Ignacio Climente

14:00 **Conduction gap engineering in disoriented graphene systems based on bilayers or grain boundaries: principles and applications** **N 3.1**
Viet-Hung Nguyen, Mai-Chung Nguyen, Trinh X. Hoang, Jérôme Saint-Martin, Jean-Christophe Charlier, and Philippe Dollfus
Center for Nanoscience and Nanotechnology, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France, Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, Louvain-la-Neuve, Belgium, Center for Computational Physics, Institute of Physics, VAST, Hanoi, Vietnam

14:30 **Electronic properties of Graphene/Mo/VS2 and Graphene/Mo/VSe2 heterostructures** **N 3.2**
Z. I. Popov, P. B. Sorokin, N. S. Mikhaleva, M. A. Visotin, A. A. Kuzubov, S. Entani, H. Naramoto, S. Sakai, P. V. Avramov
National University of Science and Technology MISiS, 4 Leninskiy prospekt, Moscow, 119049, Russian Federation , National University of Science and Technology MISiS, 4 Leninskiy prospekt, Moscow, 119049, Russian Federation , Siberian Federal University, Krasnoyarsk, 660041, Russian Federation , Siberian Federal University, Krasnoyarsk, 660041, Russian Federation , Siberian Federal University, Krasnoyarsk, 660041, Russian Federation , National Institutes for Quantum and Radiological Science and Technology, Tokai, Ibaraki 319-1195, Japan , National Institutes for Quantum and Radiological Science and Technology, Tokai, Ibaraki 319-1195, Japan , National Institutes for Quantum and Radiological Science and Technology, Tokai, Ibaraki 319-1195, Japan , Department of Chemistry, Kyungpook National University, Daegu, Republic of Korea

14:45 **A first principles calculation of the electronic and magnetic properties of few layer FeCl3 intercalated Graphene** **N 3.3**
F. Huw Davies, Saverio Russo, S. P. Hepplestone
School of Physics, University of Exeter, Stocker Road, Exeter EX4 4QL, United Kingdom

15:00 **A modified Bragg Williams model to estimate the role of strain on the miscibility of tin germanium alloys** **N 3.4**
Conor O'Donnell, Alfonso Sanchez-Soares, Lida Ansari, James C.Greer
Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland, Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland, Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland, Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland

15:15 **Stress-Strain Fields in Low-Dimensional III-V Semiconductors: A Finite Elements Approach** — **N 3.5**
Nikoletta Florini 1, George P. Dimitrakopulos 1, Joseph Kioseoglou 1, Nikos T. Pelekanos 2,3, Thomas Kehagias 1
1 Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2 Department of Materials Science and Technology, University of Crete, P.O. Box 2208, 70013 Heraklion, Greece, 3 Microelectronics Research Group, IESL-FORTH, P.O. Box 1385, 71110 Heraklion, Greece

15:30 **First-principles analysis of MoS(2)/Ti(2)C and MoS(2)/Ti(2)CY(2) (Y = F and OH) all-2D semiconductor/metal contacts** — **N 3.6**
U. Schwingenschlögl, L.-Y. Gan, Y.-J. Zhao, D. Huang
King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Thuwal 23955-6900, Saudi Arabia, Department of Physics, South China University of Technology, Guangzhou 510640, People's Republic of China, Department of Physics and Electronic Sciences, Hunan University of Arts and Science, Changde 415000, People's Republic of China

15:45 **Coffee break**

Spectroscopy : Louis Biadala

16:15 **Structure–charge transfer property relationship and control of charge transfer process in self-assembled donor–acceptor dyad** — **N 4.1**
Kwang Jin Lee 1, Yiming Xiao 2, Jae Heun Woo 3, Eunsun Kim 1, David Kreher 2, André-Jean Attias 2, Fabrice Mathevet 2, Anthony D'Aleo 1,4, Pascal André 5, Jean-Charles Ribierre 1,6, Jeong Weon Wu 1*
1 Department of Physics, Quantum Metamaterials Research Center, Ewha Womans Univ., Seoul, South Korea, 2 Institut Parisien de Chimie Moléculaire, CNRS-UMR 8232, UPMC, Paris, France, 3 Center for Length, Division of Physical Metrology, KRISS, Daejeon, South Korea, 4 Aix Marseille Université, CNRS, CINaM UMR 7325, Campus de Luminy, Case 913, 13288 Marseille, France, 5 Elements Chemistry Laboratory, RIKEN, Wako 351-0198, Japan, 6 Present Address: Center for Organic Photonics and Electronics Research (OPERA), Fukuoka 819-0395, Japan, * jwwu@ewha.ac.kr

16:45 **Dynamics of Charge Carriers and Excitons in Phosphorene** — **N 4.2**
S. L. Diedenhofen, L. D. A. Siebbeles
Opto-electronic Materials, Delft University of Technology, Van der Maasweg 9, 2629 HZ Delft, The Netherlands

17:00 **CuInS2/ZnS core shell quantum dots. Energy transfer and down shifting properties for solar cell applications.** — **N 4.3**
S. Gardelis , M. Fakis, N. Droseros, D. Georgiadou, A. Travlos, A. G. Nassiopoulou
Solid State Physics Section, Physics Department, National and Kapodistrian University of Athens, Panepistimioupolis, Zografos, 15784 Athens, Greece, Department of Physics, University of Patras, 26500 Patras, Greece, Department of Physics, University of Patras, 26500 Patras, Greece, NCSR Demokritos INN, Terma Patriarchou Grigoriou, Aghia Paraskevi, 15310 Athens, Greece, NCSR Demokritos INN, Terma Patriarchou Grigoriou, Aghia Paraskevi, 15310 Athens, Greece, NCSR Demokritos INN, Terma Patriarchou Grigoriou, Aghia Paraskevi, 15310 Athens, Greece,

17:15 **Size dependence of the photoluminescence efficiency of CsPbBr3 nanocrystals** — **N 4.4**
S. G. Motti, Q. A. Akkerman, A. R. Srimath Kandada, L. Manna, A. Petrozza
Dipartimento di Fisica, Politecnico di Milano, Piazza Leonardo da Vinci, 32, 20133 Milano, Italy, Center for Nanoscience and Technology @Polimi, Istituto Italiano di Tecnologia, via Giovanni Pascoli 70/3, 20133 Milano, Italy, Nanochemistry Department, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy

17:30 **Optical and excitonic properties of textured nanocrystalline EuO thin films** — **N 4.5**
A. Mariscal, R. Serna.
Laser Processing Group, Instituto de Óptica, CSIC, C/Serrano 121, 28006 Madrid, Spain.

Tuesday 23 May 2017

Light-emitting devices : Fabrice Mathevet

08:30 **Origin and Control of Emitting Dipole Orientation of Phosphorescent Dyes in Organic Light Emitting Diodes** — **N 5.1**
Jang-Joo Kim, Kwon-Hyeon Kim, Chang-Ki Moon
Department of MSE, Seoul National university, Seoul, Korea (the Republic of)

09:00 **Highly efficient blue organic light emitting diodes utilizing thermally activated delayed fluorescence material** — **N 5.2**
Jin Won Sun, Kwon-Hyeon Kim, Yun-Hi Kim, Jang Joo Kim,
Seoul National University

09:15 **Continuous-wave operation of organic thin-film distributed feedback laser** — **N 5.3**
Atula S.D. Sandanayaka, Toshinori Matsushima, Fatima Bencheikh, Kou Yoshida, Munetomo Inoue, Takashi Fujihara, Kenichi Goushi, Jean-Charles Ribierre, Chihaya Adachi
1. Center for Organic Photonics and Electronics Research (OPERA), Kyushu University, 744 Motooka, Nishi, Fukuoka 819-0395, Japan, 2. Japan Science and Technology Agency (JST), ERATO, Adachi Molecular Exciton Engineering Project, Kyushu University, 744 Motooka, Nishi, Fukuoka 819-0395, Japan

09:30 **Monolithic integration of inorganic transparent photonic crystal as optoelectronic gate dielectric into OLET** — **N 5.4**
Marco Natali, Santiago D. Quiroga, Luca Passoni, Luigino Criante, Emilia Benvenuti, Gabriele Bolognini, Laura Favaretto, Manuela Melucci, Michele Muccini, Francesco Scotognella, Fabio Di Fonzo, Stefano Toffanin
Marco Natali, Santiago D. Quiroga, Emilia Benvenuti, Michele Muccini, Stefano Toffanin, Institute for the Study of the Nanostructured Materials, National Research Council (CNR-ISMN), Luca Passoni, Luigino Criante, Fabio Di Fonzo, Center for Nano Science and Technology, Italian Institute of Technology (IIT-CNST), Gabriele Bolognini, Institute for Microelectronics and Microsystems, National Research Council (CNR-IMM), Manuela Melucci, Laura Favaretto, Institute of Organic Synthesis and Photoreactivity, National Research Council (CNR-ISOF), Luca Passoni, Francesco Scotognella, Dipartimento di Fisica - Politecnico di Milano.

09:45 **Solvent-free liquid fluorene derivatives: charge transport and stimulated emission studies** — **N 5.5**
Stéphane Méry, Pierre-Olivier Schwartz, Loïc Mager, Li Zhao, Atula S. D. Sandanayaka, Jean-Charles Ribierre, Chihaya Adachi
(1) Institut de Physique et de Chimie des Matériaux de Strasbourg (IPCMS), CNRS, Université de Strasbourg, 23 rue du Loess, 67034 Strasbourg, France (2) Kyushu University, Center for Organic Photonics and Electronic Research (OPERA), Fukuoka 819-0395, Japan

10:00 **Coffee break**

Functional nano-/micro-nanostructures : Juan Ignacio Climente

10:30 **3D Micro Objects Fabricated by Two-Photon Stereolithography for Optoelectronics and Biophotonics** — **N 6.1**
Kwang-Sup Lee
Department of Advanced Materials and Chemical Engineering, Hannam University, Daejeon 305-811, South Korea

11:00 **Laser Induced Surface Modification of InAs Nanowires: Tuning the Charge Density** — **N 6.2**
Achintya Singha,1 Dipanwita Majumdar,2 Daniele Ercolani,3 Lucia Sorba3
1 Department of Physics, Bose Institute, 93/1, Acharya Prafulla Chandra Road, Kolkata 700 009, India, 2 Saha Institute of Nuclear Physics, HBNI, 1/AF Bidhannagar, Kolkata 700 064, India, 3 NEST, Istituto Nanoscienze-CNR and Scuola Normale Superiore, Piazza S. Silvestro 12, I-56127 Pisa, Italy,

11:15 **Assemblies of CdS/CdSe Nano-Heterostructures and Their Optical Properties** — **N 6.3**
Natalie Gogotsi, Christopher B. Murray
Natalie Gogotsi - Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA, USA, Christopher B. Murray - Department of Materials Science and Engineering, Department of Chemistry, University of Pennsylvania, Philadelphia, PA, USA

11:30 **Surfactant-Controlled Cation Exchange Lithography** — **N 6.4**
Stefan Kudera, Sedat Dogan, Liberato Manna, Roman Krahne
Nanochemistry Department, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy

11:45 **Sub-20 nm devices fabricated by thermal scanning probe lithography** **N 6.5**
Yu Kyoung Ryu a, Colin Rawlings a, Martin Spieser b, Heiko Wolf a, Urs Duerig a, Sajedeh Manzelic, Andras Kisc, Zahid A. K. Durranid, Mervyn Jonesd, Siegfried Karga, Vanessa Schallera and Armin W. Knoll a
a IBM Research &#8722, Zurich, Rueschlikon, Switzerland b SwissLitho AG &#8211, Zurich, Switzerland c LANES group, Ecole Polytechnique Federale de Lausanne &#8211, Lausanne, Switzerland d Imperial College London-London, United Kingdom

12:00 **Wafer-scale synthesis of 2D gallium sulphide (GaS) using a novel liquid metal/ metal oxide printing process** **N 6.6**
Torben Daeneke Kourosh Kalantar-Zadeh
RMIT University School of Engineering 124 LaTrobe Street 3001 Melbourne Australia

12:15 **Lunch**

Oxide nanostructures and devices : Jean-Charles Ribierre

14:00 **Metal Oxide Nanoparticles for Sensor Applications** **N 7.1**
E. Fortunato, L. Santos, A. Gonçalves, A. Pimentel, A. Marques, R. Martins
i3N/CENIMAT, Department of Materials Science, Faculty of Science and Technology, Universidade NOVA de Lisboa, Campus de Caparica, 2829-516 Caparica, Portugal

14:30 **The analysis of device degradation under AC stress upon the drain of oxide semiconductor thin-film transistors** **N 7.2**
Hyeon-Jun Lee1*, Sung Haeng Cho2, Katsumi Abe3, Hee Yeon Noh1, Myoung-Jae Lee1
1 Intelligent Devices & Systems Research Group, Institute of Convergence, DGIST, Daegu 42988 Korea, 2 Realistic Display Research Group, ETRI, Daejeon 34129 Korea, 3 Silvaco Japan Co., Ltd., Nakagyo-ku, Kyoto, 604-8152 Japan

14:45 **ALD metal oxides for passivation of Si/SiO2 interface in BSI CMOS image sensors** **N 7.3**
Evan Oudot.Mickael Gros-Jean.Kristell Courouble.Christophe Vallée.François Bertin. Romain Duru.Névine Rochat
STMicroelectronics,STMicroelectronics,STMicroelectronics,LTM,CEA LETI,STMicroelectronics,CEA LETI

15:00 **Fabrication of a high brightness UV-Blue Light-Emitting Diode based on high quality Gd doped ZnO-nanotube array grown on p-GaN** **N 7.4**
Norah Alwadai, Tahani Felemban, Somak Mitra, Idris ajia, Mufasila Mumthazmuhammed, Bilal Janjua, Boon Ooi, and Iman Roqan.
Physical Science and Engineering Division, King Abdullah University of Science and Technology (KAUST)

15:15 **A novel ZnO / CuCrO2 core shell nanowire heterostructure for UV photodetectors** **N 7.5**
Joao Resende1, Thomas Cossuet1, Estelle Appert1, Laetitita Rapenne1, Carmen Jimenez1, Gilles Renou3, Ngoc Duy Nguyen2, David Muñoz-Rojas1 ,Vincent Consonni1, Jean-Luc Deschanvres1
1 Université Grenoble Alpes, Grenoble INP, CNRS, LMGP 38000 Grenoble, France, 2 Université de Liège, CESAM/Q-MAT,SPIN, B-4000 Liège, Belgium, 3 Université Grenoble Alpes, Grenoble INP, CNRS, SIMAP, 38042 Saint-Martin d'Hères, France

15:30 **Study of the optical properties and structure of ZnSe/ZnO thin films grown by MOCVD with varying thicknesses** **N 7.6**
S. Jabri, G. Amiri , V. Sallet, A.Souissi, A. Meftah, P.Galtier and M. Oueslati
1Unité des nanomatériaux et photoniques, Faculté des Sciences de Tunis, Campus Universitaire Ferhat Hachad, El Manar, 2092 Tunis, Tunisie 2Groupe d'Etude de la Matière Condensée, CNRS-Université de Versailles St Quentin, Université Paris-Saclay, 45 avenue des Etats Unis, 78035 Versailles cedex.

15:45 **Self-powered, High-performance, ultraviolet photodetector based on hydrogenated doped zinc oxide nanoflakes** **N 7.7**
Buddha Deka Boruah and Abha Misra
Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, Karnataka, India 560012

16:00 **Coffee break**

Poster : Jean-Charles Ribierre

16:30 **Influence of intermediate band on the solar cell based on ZnTeO** **N 8.1**
S. Khelifi , H. Mazari, A. Belghachi, N. Sahouane, A. Rouabhia, M. Mostefaoui
- Unite de Recherche en Energies Renouvelable En Milieu Saharien. URERMS Centre De Développement des énergies Renouvelables CDER 01000 Adrar, Algerie - Laboratoire de Microélectronique Appliquée, Département d'électronique, Université Djillali

16:30 **Effect of different sulfur environment on sulfurization of MoO3 into MoS2 nanoflakes** **N 8.2**
Prabhat Kumar*, Megha Singh, and G.B. Reddy
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India. *E-mail: prabhat89k@gmail.com

16:30 **Fascinating vanadium oxide nanostructured thin films for sensing applications** **N 8.3**
Megha Singh, Prabhat Kumar and G.B. Reddy
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi, New Delhi-110016, India.

16:30 **Fabrication of high-aspect-ratio nanostructures using thin films deposition for structural color realization** **N 8.4**
Jeong Hwan Kim, Jik-Han Jeong, Jae-Sung Yoon, and Yeong-Eun Yoo
Department of Nano Manufacturing Technology, Korea Institute of Machinery and Materials (KIMM), Department of Nano-Mechatronics, University of Science and Technology(UST)

16:30 **Nanostructure ZnO Films for Liquid Crystal Alignment** **N 8.5**
Chia-Chun Liu, Chieh-Lun Lee, Fung-Jie Guo, Sheng-Hsiung Yang, Shie-Chang Jeng
National Chiao Tung University

16:30 **Optical Characterizations of Colloidal QDs Patterns formed by LbL Assembly and Photolithography for Pixelated Full-Color Display** **N 8.6**
Joon-Suh Park1, Jihoon Kyhm2, Shinyoung Jeong1&3, Kyung Wan Park4, and Il Ki Han1*
1 Nanophotonics Research Center, Korea Institute of Science and Technology, Seoul 02792, Republic of Korea (e-mail: hikoel@kist.re.kr), 2 Division of Physics□Semiconductor, Dongguk University, Seoul 04620, Republic of Korea, 3 School of Electrical Engineering, Korea University, Seoul 02841, Republic of Korea, 4 Department of Physics, University of Seoul, Seoul 02504, Republic of Korea

16:30 **Luminescent hybrid materials based on nanoparticles of metal-organic phosphors in PbO-SiO2-B2O3 glass matrix** **N 8.7**
Petrova O.B., Anurova M.O., Runina K.I., Taydakov I.V., Khomyakov A.V., Avetisov R.I., Avetissov I.Ch.
D. Mendeleev University of Chemical Technology of Russia

16:30 **Mirror-like electroluminescent device with top-emission structure based on Zn2SiO4:Mn2 phosphor film** **N 8.8**
1Jongho Ryu, 1Mohammd Malik Afandi, 2Byungjoo Jeon, 3Taewook Kang, 4Semo Son, 5Sunghoon Lee, 1,*Jongsu Kim
1Department of Display Science & Engnieering, Pukyoung National University, Busan, 608-737, South Korea 2Department of LED Conversions Engnieering, Pukyoung National University, Busan, 608-739, South Korea 3Interdisciplinary Program of LED and Solid State Lighting Engineering, Pukyong National University, Busan, 608-739, South Korea 4Department of Graphic Arts Information Engineering, Pukyoung National University, Busan, 608-739, South Korea 5P-Project Team, Hyosung Corporation, Gyeonggi-do, 431-080, South Korea

16:30 **Organic Light Emitting Board for Interactive Display** **N 8.9**
Eui Hyuk Kim, Beomjin Jeong, Ihn Hwang, Cheolmin Park
Yonsei University

16:30 **Synthesis of ZnO nanowires for surface plasmon polariton lasers** **N 8.10**
Yun-Jhen Liao, Chang-Wei Cheng, Shangjr Gwo, Lih-Juann Chen
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, Department of Physics, National Tsing Hua University, Hsinchu, Taiwan

16:30 **Visible light communication and indoor positioning system based on white LEDs transmitters and SiC optical MUX/DEMUX receivers** **N 8.11**
M. A. Vieira, M. Vieira, P. Vieira, P. Louro
Electronics 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 . CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. Instituto de Telecomunicações, Instituto Superior Técnico, 1049-001, Lisboa, Portugal.

16:30 **Highly luminescent Cd-free colloidal quantum dots with narrow emission linewidths** **N 8.12**
Parthiban Ramasamy, Jong-Soo Lee
Department of Energy Systems Engineering, DGIST, Daegu, Republic of Korea

16:30 **Organic-Inorganic Hybrid Photodetector Based on PEDOT:PSS/ZnSe Nanowires on Flexible Polyimide Substrate** **N 8.13**
Tse-Ning Yang and Lih-Juann Chen
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan (R.O.C)

16:30 **Solution-processed zinc-tin oxide thin-film transistors with solution-processed gate dielectrics** **N 8.14**
HunHo Kim, Woon-Seop Choi
Hoseo University

16:30 **Electrically and optically tunable properties of two dimensional heterostructures** **N 8.15**
Meng Zhao, Jinghua Teng
Institute of Materials Research and Engineering, A*STAR (Agency for Science,Technology and Research), 2 Fusionopolis Way, Singapore 138634, Singapore

16:30 **Growth mechanism of ZnO thin films grown by spray pyrolysis using diethylzinc solution** **N 8.16**
Masato Imai(1)(2), Marin Watanabe(1)(2), Himeka Tominaga(1), Yohei Yamaga(1), Kenji Yoshino(1)(2), Yuhei Ogomi(2)(3), Qing Shen(2)(4), Taro Toyoda(2)(4), Takashi Minemoto(2)(5) and Shuzi Hayase(2)(3)
(1) Department of Applied Physics and Electronics Engineering, Faculty of Engineering, University of Miyazaki, (2) CREST, Japan Science and Technology Agency (JST), (3)Graduate School of Life Science and Systems Engineering, Kyusyu Institute Technology, (4) Department of Engineering Science, Faculty of Informatics and Engineering, The University of Electro-Communications, (5) Department of Electrical and Electronic Engineering, Ritsumeikan University

16:30 **The Structural Properties of Mg-ZnO nanorods Grown on Flexible Substrate with different Mg precursor by Hydrothermal Methods** **N 8.17**
SeHyeon Park, JaeHyeon Oh, HongSeung Kim, Nakwon Jang
Division of Electronics and Electrical Information Engineering, Korea Maritime and Ocean University, Busan, Korea

16:30 **The role of quantum-dots and metal nanoparticles at the oxide semiconductor to generate the photocurrent with the visible-light** **N 8.18**
Seong Jun Kang
Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin, Gyeonggi-do 446-701, Republic of Korea

16:30 **Anchoring of CdSe over CdS through SILAR to form core-shell heterostructure nanowires towards photoelectrochemical application** **N 8.19**
Sutripto Majumder and Babasaheb Raghunath Sankapal
Nanomaterials and device laboratory, Department of Applied Physics, Visvesvaraya National Institute of Technology, South Ambazari Road, Nagpur, Maharashtra, India.

16:30 **Synthesis, Luminescence and Raman spectra of Ag2-3xEuxWO4 semiconductors for opto-electronic devices** **N 8.20**
Ivo Mateus Pinatti (1) Paula F. S. Pereira (2) Clayane C. dos Santos (1) Elson Longo (2) Jack Silver (3) Terry G. Ireland (3) George R. Fern (3) Ieda L. V. Rosa (1)
(1) CDMF, LIEC, Federal University of São Carlos (UFSCar), P.O. Box 676, São Carlos 13565-905, Brazil , (2) CDMF, LIEC, São Paulo State University (UNESP), P.O. Box 355, Araraquara 14800-900, Brazil, (3) Wolfon Centre for Materials Processing, Brunel University London Kingston Lane, Uxbridge, Middlesex, UB8 3PH, UK.

16:30 **Illustrations of the role of the surface in ZnO nanoparticles in biological application** **N 8.21**
Zeggai Oussama , Ould-Abbes Ammaria , belarbi moussab
1-Hassiba ben bouali university, BP 151,02000 chlef Algeria. 2-Research unit of Materials and Renewable energies (URMER), University Abou Bakr Belkaïd, B.P. 119, Tlemcen, Algeria.

16:30 **Tunable Schottky junctions used for organic molecular devices: ADT on the Cu(111) surface** **N 8.22**
Guirong Su, Sha Yang, Shuang Li and Wei Liu*
Nano Structural Materials Center, School of Material Science and Engineering, Nanjing University of Science and Technology, Nanjing 210094, jiangsu, China

16:30 **Enhancement in optoelectronic properties via controllable growth of NaYF4: Yb3+, Tm3+@ZnO nanoparticles** **N 8.23**
Li Wang1, Long Ren1, David Mitchell2, Xiaoxue Xu3, Chenshuo Ma3, Xun Xu1, Dayong Jin3, Yi Du1,*, Shi Xue Dou1
1 Institute for Superconducting and Electronic Materials (ISEM), Australian Institute for Innovative Materials (AIIM), University of Wollongong, Wollongong, NSW 2500, Australia 2 Electron Microscopy Centre, University of Wollongong, Wollongong, NSW 2500, Australia 3 Faculty of Science, Institute for Biomedical Materials and Devices, University of Technology Sydney, New South Wales 2007, Australia

16:30 **Characteristics of Contact Resistance between the Metal and Semiconductor by Adding Insulator Layer** **N 8.24**
Hyunjung Kim1, Woochool Jang2, Heewoo Lim1, Youngkyun Kweon1, Hyeongtag Jeon1, 2, *
1Department of Nano-Scale Semiconductor Engineering, Hanyang University, Seoul 133-791, South Korea, 2Division of Materials Science and Engineering, Hanyang University, Seoul 133-791, South Korea

16:30 **Graphene-like layers grown on ferroelectric surfaces** **N 8.25**
Nicoleta G. Apostol, George A. Lungu, Ioana C. Bucur, Luminița Hrib, Lucian Pintilie, Cristian M. Teodorescu
National Institute of Materials Physics, Atomiștilor 405A, 077125 Măgurele – Ilfov, Romania

16:30 **Enhanced out-coupling efficiency of organic light emitting diodes using vacuum nanohole array** **N 8.26**
Sohee Jeon, Jun-Ho Jeong, Jae Ryoun Youn, Jang-Joo Kim
Korea Institute of Machinery and Materials, Korea Institute of Machinery and Materials, Seoul National University, Seoul National University

16:30 **Supression of excess current in quantum dot light emitting diodes by insulating polymer-passivated ZnO electron transport layer** **N 8.27**
Moo Hyun Kim, Byoung-Hwa Kwon, Kyungmok Kim and Duk Young Jeon
Moo Hyun Kim, Kyungmok Kim, and Duk Young Jeon : Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Byoung-Hwa Kwon : Electronics and Telecommunications Research Institute,

16:30 **Vapor-Transport Synthesis of a Novel 2D Material** **N 8.28**
Mehdi Ramezani, Mustafa M. Fadlelmula, Mir Majid Molaie, Gönenç Bozbıyık, Seymur Cahangirov, Aykutlu Dana, T. Serkan Kasirga
Bilkent University UNAM- National Nanotechnology Research Center, Bilkent, Ankara, Turkey 06800 Institute of Materials Science and Nanotechnology, Bilkent University, Bilkent, Ankara, Turkey, 06800

16:30 **Solar cells using N,N'-substituted thiourea-based lead sulfide quantum dots** **N 8.29**
Jorick Maes, Xiaoliang Zhang, Emile Drijvers, Erik Johansson, Zeger Hens
Physics and Chemistry of Nanostructures Group (PCN), Ghent University, 9000 Ghent, Belgium Center for NanoBiophotonics, Ghent University, 9000 Ghent, Belgium, Department of Chemistry Ångström, Physical Chemistry, Uppsala University, 75120 Uppsala, Sweden, Physics and Chemistry of Nanostructures Group (PCN), Ghent University, 9000 Ghent, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Ghent, Belgium, Department of Chemistry Ångström, Physical Chemistry, Uppsala University, 75120 Uppsala, Sweden, Physics and Chemistry of Nanostructures Group (PCN), Ghent University, 9000 Ghent, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Ghent, Belgium

16:30 **Photoluminescent properties of the complex metal oxide nanopowders** **N 8.30**
Popovych D.I. (1,2), Savka S.S.(1), Serednytski A.S.(1), Venhryn Y.I.(1)
1. Pidstryhach Institute for Applied Problems of Mechanics and Mathematics NASU, 3b, Naukova Str., 79060 Lviv, Ukraine, 2. National University "Lvivska Polytechnika", Bendera Str. 12, 79013 Lviv, Ukraine.

16:30 **Structural, electrical and optical properties of Gd and Al co-doped ZnO thin films deposited by DC reactive magnetron co-sputter** **N 8.32**
S. Lardjane1, M. Arab Pour Yazdi2, N. Martin2, H. Sun2, G. Merad1, A. Billard2
1 Division Etude et Prédiction des Matériaux (DEPM), Unité de Recherche Matériaux et Energies Renouvelables (URMER) Université Abou Bekr Belkaid, Tlemcen 13000, Algérie 2 Institut FEMTO-ST, UMR 6174 CNRS, Université Bourgogne Franche-Comté, 15B, Avenue des montboucons 25030 BESANCON Cedex, France

16:30 **Synthesis of Cesium lead bromide nano-crystal at lower temperature by using additive solvent** **N 8.33**
Jin Kyoung Park, Jin Hyuck Heo, Sang Hyuk Im*
Functional Crystallization Center (ERC), Department of Chemical Engineering, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin-si, Gyeonggi-do 446-701, Republic of Korea

16:30 **Characterization of Noble Metal/TiO2 Nanostructures for application in the plasmonic solar cell** **N 8.34**
N. E. Stankova1*, P. A. Atanasov1, R. G. Nikov1, D. Hirsch2, B. Rauschenbach2, At. N. Tzonev3, A. Kapoor4,
1Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsaridradsko shose Blvd., Sofia 1784, Bulgaria, 2Leibniz Institute of Surface Modification (IOM), 15 Permoserstrasse, D-04318 Leipzig, Germany, 3Department of Solid State Physics and Microelectronics, Faculty of Physics, University of Sofia, 5 J. Bouchier Blvd., Sofia, Bulgaria, 4Department of Electronic Science, University of Delhi South Campus, New Delhi - 110021, India

16:30 **White-light bright luminescence in electrochemically-produced porous Si/ZnO nanostructures** **N 8.35**
S. Dellis, N. Pliatsikas, N. Kalfagiannis, O. Lidor, I. Fuchs, G. Vourlias, S. Sotiropoulos, D. C. Koutsogeorgis, Y. Mastai, P. Patsalas
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom,Department of Chemistry and the Institute of Nanotechnology, Bar-Ilan University, Ramat-Gan, Israel, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece,Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom, Department of Chemistry and the Institute of Nanotechnology, Bar-Ilan University, Ramat-Gan, Israel, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece

16:30 **Role of intrinsic and extrinsic carrier capture processes on exciton recombination in I-III-VI2 nanocrystals** **N 8.36**
Valerio Pinchetti(1), Monica Lorenzon(1), Hunter McDaniel(2), Francesco Meinardi(1), Victor I. Klimov (3), Sergio Brovelli(1)
(1) Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, I-20125 Milano, Italy, (2) UbiQD, Los Alamos, New Mexico, 87544, USA, (3) Chemistry Division & Center for Advanced Solar Photophysics, Los Alamos National Laboratory, NM 87545, USA

16:30 **Strain-balanced GaAsN/GaAsBi type II double quantum wells operating at 1.3 and 1.55 µm** **N 8.37**
K. Chakir, I. Guizani, C. Bilel, A. Rebey
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro–Epitaxies et Applications, 5019 Monastir, Tunisia

16:30 **Short-range structure and photoluminescent properties of the CaTiO3:Pr,La and SrTiO3:Pr,La phosphors** **N 8.38**
Guilherme Kubo Ribeiro, Lucas Angelini Deltreggia1, Fabio de Simões Vicente1, Maria Inês Basso Bernardi2, Alexandre Mesquita1
1 UNESP - Univ Estadual Paulista – Departamento de Física, IGCE, Rio Claro, SP, Brazil 2 Instituto de Física de São Carlos, Universidade de São Paulo, São Carlos, SP, Brazil

16:30 **Direct Current-Induced Oxidization of Metallic Nanowires and their Resistive Switching Properties** **N 8.39**
1_Yu-Chuan Shih, 1_Kai-De Liang, 1_Yu-Ze Chen , 1_Hung-Wei Tsai , 2_Mu-Tung Chang and 1_Yu-Lun Chueh
1_Department of Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan 30013 2_Nano Technology Research Center, Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan 30013

16:30 **Structural and optoelectronic properties of β-In2S3 thin films to be applied on cadmium reduced solar cells** **N 8.40**
U. Galarza-Gutierrez1, M.L. Albor-Aguilera1, A. Remolina-Millan1, J.M. Flores-Marquez2, C. Hernandez-Vasquez1, M.A. Gonzalez-Trujillo3, D. Jimenez-Olarte4
1 ESFM – Instituto Politecnico Nacional, Depto. de Fisica, U.P.A.L.M., Zacatenco, CDMX, 07738, Mexico, 2 ESIQIE – Instituto Politecnico Nacional, Depto. Metalurgia y Mat., U.P.A.L.M., Zacatenco, CDMX, 07738, Mexico, 3 ESCOM- Instituto Politecnico Nacional, Depto. de Ciencias Basicas, U.P.A.L.M., Zacatenco, CDMX, 07738, Mexico, 4 Departamento de Fisica, Centro de Investigación y Estudios Avanzados del Instituto Politecnico Nacional, CDMX, 07360, Mexico.

16:30 **The enhancement of CRI of white LEDs using YAG:Ce3+ paste with red component** **N 8.41**
Jung Hyeon Yoo, Seok Bin Kwon, Chul Woo Lee, Young Hyun Song, Dae Ho Yoon
School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, 440-746, Republic of Korea , SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon, 440-746, Republic of Korea

16:30 **Field Emission reverse current through double potential Barriers in Graphene/Oxide/n-Semiconductor Schottky junctions** **N 8.42**
AC Varonides
Physics & ECE Dept, University of Scranton Scranton, PA 18510

16:30 **Zn Nanoparticle Formation in ZnO Crystal by Nd:YAG Laser Radiation** **N 8.43**
Arturs Medvids, Pavels Onufrijevs, Liga Grase, Ilze Birska, Hidenori Mimura
Arturs Medvids, Pavels Onufrijevs, Liga Grase, Ilze Birska, Hidenori Mimura

16:30 **Energy band gap for the CH3NH3PbI3 systems and its dependence on the structure and the organic cation confinement** **N 8.44**
I. Ornelas, J. Pilo, A. Miranda, E. Carvajal, M. Cruz–Irisson
Instituto Politécnico Nacional, Escuela Superior de Ingeniería Mecánica y Eléctrica–Culhuacán, Av. Santa Ana 1000, C.P. 04430, Ciudad de México, México

16:30 **Work function engineering of graphene anode by solution processible MoOx-doping for efficient polymer light-emitting diodes** **N 8.45**
Dongchan Lee, Donghyuk Kim, Yonghee Lee, Duk Young Jeon
Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, 291 Daehak-ro, Yuseong-gu, Daejeon, 305-701, Republic of Korea

16:30 **Competition between relaxation, reemission from traps, and sequential hopping in the PPC effect of ZnO nanowires** **N 8.46**
R. Schwarz and P. Sanguino
Department of Physics and CeFEMA, Instituto Superior Técnico, P-1049-001 Lisbon, Portugal

16:30 **Highly Luminescent, Size Tunable MoS2 Quantum Dots based Optoelectronic Devices** **N 8.48**
Subhrajit Mukherjee, Soumen Das, Samit K. Ray
Advanced Technology Development Centre, Indian Institute of Technology, Kharagpur, India

Wednesday 24 May 2017

Organic and hybrid electronics : Toshinori Matsushima

08:30 **Simple methods to control the electrical properties of organic semiconductors near interfaces for printed electronics** — N 9.1
B. Kippelen, V. A. Kolesov, C. Fuentes-Hernandez, N. Aizawa, F. A. Larrain, W.-F. Chou, S. Choi
Center for Organic Photonics and Electronics, School of Electrical and Computer Engineering, Georgia Institute of Technology

09:00 **Multi-lamellar organic materials for organic electronics and ambipolar charge transport** — N 9.2
Yiming Xiao, Danli Zeng, Xiaolu Su, Martin Brinkmann, Benoît Heinrich, Bertrand Donnio, Ji-Seon Kim, Jeong Weon Wu, Jean-Charles Ribierre, Emmanuelle Lacaze, Thierry Barisien, David Kreher, André-Jean Attias, Fabrice Mathevet
Institut Parisien de Chimie Moleculaire, UPMC-CNRS, 4 place Jussieu, Paris, France, Institut Charles Sadron, 23 rue du Loess, Strasbourg, France, Département des Matériaux Organiques, IPCMS, 23 rue du Loess, Strasbourg, France, Centre for Plastic Electronics, Department of Physics, Imperial College London, London SW7 2AZ, United Kingdom, CNRS-Ewha International Research Center, CERC, Ewha Womans University, Korea, Institut des NanoScience de Paris, UPMC-CNRS, 4 Place Jussieu, Paris, France

09:15 **High-performance plastic nanoelectronics enabled by adhesion lithography** — N 9.3
Dimitra G. Georgiadou, James Semple, Gwenhivir Wyatt-Moon, Thomas D. Anthopoulos
Physics Department & Centre for Plastic Electronics, Imperial College London, London, United Kingdom

09:30 **Highly Sensitive Tunable Room Temperature Infrared Hybrid Organic-Nanocrystals Detector** — N 9.4
A. Neubauer, S. Yochelis, Y. Paltiel
Applied Physics Department and the Center for Nano-Science and Nano-Technology, the Hebrew University of Jerusalem, Jerusalem, 91904 Israel.

09:45 **Multifunctional photo-switchable transistors based on high mobility polymers and photochromic diarylethenes** — N 9.5
Marco Carroli (a), Tim Leydecker (a), Martin Herder (b), Stefan Hecht (b), Emanuele Orgiu (a) and Paolo Samorì (a)
(a) Nanochemistry Laboratory, ISIS/UMR CNRS 7006, Université de Strasbourg, 8 allée Gaspard Monge, 67000 Strasbourg, France, (b) Department of Chemistry & IRIS Adlershof, Humboldt-Universität zu Berlin, Brook-Taylor-Straße 2, 12489 Berlin, Germany

10:00 **Coffee break**

Silicon nanostructures and devices : Iwan Moreels

10:30 **Heterogeneous integration of lithium niobate on silicon substrates for electrooptic modulation and second-harmonic generation** — N 10.1
Sasan Fathpour 1,2, Ashutosh Rao 1, Jeff Chiles 1, Saeed Khan 1, Payam Rabiei 3, Seyfollah Toroghi 3, Marcin Malinowski 1, Amirmahdi Honardoost 1, and Guillermo F. Camacho-González 1
1 CREOL, The College of Optics and Photonics, University of Central Florida, Orlando, FL, USA 2 Department of Electrical Engineering, University of Central Florida, Orlando, FL, USA 3 Partow Technologies, LLC, Orlando, FL, USA

11:00 **Silicon Nanowires Array: From Photonics to Sensing** — N 10.2
M. J. Lo Faro1, A.A. Leonardi1-2-3, C. D'andrea1, P. Musumeci3, M A Iatì1, M. Galli4, G. Franzò2, F. Iacona2, P. Gucciardi1, C. Vasi1, G. Palazzo5, L. Torsi5, F. Priolo2,3,6, B. Fazio1, A. Irrera1.
1 CNR-IPCF, Istituto per i Processi Chimico-Fisici, V.le F. Stagno D'Alcontres 37, 98158 Messina, Italy, 2 MATIS CNR-IMM, Istituto per la Microelettronica e Microsistemi, Via Santa Sofia 64, 95123 Catania, Italy, 3 Dipartimento di Fisica ed Astronomia, Università di Catania, Via Santa Sofia 64, 95123 Catania, Italy, 4 Dipartimento di Fisica, Università degli Studi di Pavia, via Bassi 6, 27100 Pavia, Italy 5 Dipartimento di Chimica- Università degli Studi di Bari "Aldo Moro"Via Orabona 4, 70126, Bari, 6 Scuola Superiore di Catania, Via Valdisavoia 9, 95123 Catania, Italy,

11:15 **Sub-THz response of strained-silicon MODFETs** — N 10.3
J. A. Delgado Notario, E. Javadi, J. Calvo-Gallego, E. Diez, J. E. Velázquez, Y. M. Meziani, K. Fobelets
Universidad de Salamanca (Spain), University of Tehran (Iran), Universidad de Salamanca (Spain),Universidad de Salamanca (Spain),Universidad de Salamanca (Spain),Universidad de Salamanca (Spain), Imperial College London (UK)

11:30 **Avalanche electroluminescence in silicon nanowires** — N 10.4
Monuko du Plessis, Trudi-Heleen Joubert
Carl and Emily Fuchs Institute for Microelectronics (CEFIM), Department of Electrical, Electronic and Computer Engineering, University of Pretoria, Pretoria, South Africa.

11:45 **Tin nanocrystals in silicon – a comparison of DLTS and PL** — N 10.5
L. Scheffler, M. J. Haastrup, S. Roesgaard, J. L. Hansen, B. Julsgaard
Institute for Physics and Astronomy, Aarhus University, Denmark, Institute for Physics and Astronomy, Aarhus University, Denmark, Interdisciplinary Nanoscience Center (iNano), Aarhus University, Denmark, Interdisciplinary Nanoscience Center (iNano), Aarhus University, Denmark, Interdisciplinary Nanoscience Center (iNano), Aarhus University, Denmark, Institute for Physics and Astronomy, Aarhus University, Denmark

12:00 **Tuning thermal transport in Si nanowires by isotope engineering: perspective for thermoelectric applications** — N 10.6
M. Royo, R. Rurali
Institut de Ciència de Materials de Barcelona (ICMAB–CSIC) Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain

12:15 **Lunch break**

Nanocrystal synthesis : Sergio Brovelli

14:00 **Advantages of 2D Structuring for Colloidal Semiconductor Nanomaterials** — N 11.1
Vladimir Lesnyak
Physical Chemistry, TU Dresden, Bergstr. 66b, 01062 Dresden, Germany

14:30 **Nanocrystal composition determination from scanning transmission electron microscopy, verified using atom probe tomography.** — N 11.2
Søren Roesgaard(1), Etienne Talbot(2), Jacques Chevallier(1), John L. Hansen(1,3), and Brian Julsgaard(1,3).
(1) Interdisciplinary Nanoscience Center (iNano), Aarhus University, Gustav Wieds Vej 14, 8000 Aarhus C, Denmark., (2) Groupe de Physique des Matériaux, Université et INSA de Rouen, UMR CNRS 6634, av. de l'Université, 76800 Saint Etienne du Rouvray, France., (3) Department of Physics and Astronomy, Aarhus University, Ny Munkegade 120, 8000 Aarhus C, Denmark.

14:45 **Quantum dot self-assembly driven by a surfactant-induced morphological instability** — N 11.3
Ryan B. Lewis, Pierre Corfdir, Hong Li, Jesús Herranz Zamorano, Carsten Pfüller, Oliver Brandt, Lutz Geelhaar
Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5-7, 10117 Berlin, Germany

15:00 **Synthesis and Characterization of Novel MoS2 and MoS2-MoOx Nanostructures** — N 11.4
Gal Radovsky, Vered Sheff, Arina Vaysman and Ariel Ismach
Department of Materials Science and Engineering, Tel Aviv University, Ramat Aviv, Tel Aviv 6997801, Israel.

15:15 **Repairing Nanoparticle Surface Defects** — N 11.5
Emanuele Marino (1), Thomas E. Kodger (1, 2), Marc Heggen (3), and Peter Schall (1).
(1) Van der Waals – Zeeman Institute, Universiteit van Amsterdam, Science Park 904 1098XH, Amsterdam, The Netherlands, (2) Agrotechnology and Food Sciences, Wageningen University and Research, Stippeneng 4, 6708 WE, Wageningen, The Netherlands, (3) Ernst Ruska Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, For-schungszentrum Jülich GmbH, 52425 Jülich, Germany.

15:30 **Coffee break**

16:15 **Plenary Session**

Thursday 25 May 2017

Nanowires-Optoelectronic properties : Jean-Charles Ribierre

08:30 **Design of 1D-like nanosources and waveguides** **N 12.1**
J.L. Duvail,1,* A. Garreau,1 J. Bigeon,2 N. Huby,2 B. Bêche,2 F. Massuyeau,1 S. Cordier,3 Y. Molard,3 E. Faulques1
1 Institut des Matériaux Jean Rouxel, UMR 6502 CNRS Université de Nantes, France , 2 Institut de Physique de Rennes, UMR 6251 CNRS Université de Rennes-1, France , 3 Institut des Sciences Chimiques de Rennes, UMR CNRS Université de Rennes-1, France.

09:00 **Optoelectronic properties of HgTe nanoplatelets** **N 12.2**
Clement Livache,1,2 Eva izquierdo,2 Bertille Martinez,1,2 Sandrine Ithurria,2 Emmanuel Lhuillier1*
1Sorbonne Universités, UPMC Univ. Paris 06, CNRS-UMR 7588, Institut des NanoSciences de Paris, 4 place Jussieu, 75005 Paris, France 2Laboratoire de Physique et d'Etude des Matériaux, ESPCI-ParisTech, PSL Research University, Sorbonne Université UPMC Univ Paris 06, CNRS, 10 rue Vauquelin 75005 Paris, France.

09:15 **InP based colloidal quantum dots as single photon emitter** **N 12.3**
Vigneshwaram Chandrasekaran, Mickael D. Tessier, Dorian Dupont, Pieter Geiregat, Edouard Brainis, Zeger Hens
Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, Ghent, 9000, Belgium

09:30 **Fully-Inorganic Based Cesium Lead Bromide (CsPbBr3) Nanocrystal for Optoelectronic Devices** **N 12.4**
Chul Woo Lee, Seung Hee Choi, Young Hyun Song, Bong Kyun Kang, Seok Bin Kwon, and Dae Ho Yoon
School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), Suwon, 440-746, Republic of Korea, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU), Suwon 440-746, Republic of Korea

09:45 **Colloidal Quantum Dots: Surface Chemistry and Optoelectronic Applications** **N 12.5**
Zhenyu Yang, Edward H. Sargent
The Edward S. Rogers Department of Electrical and Computer Engineering, University of Toronto, 10 King's College Road, Toronto, Ontario M5S 3G4, Canada

10:00 **Coffee break**

Physics of inorganic semiconductors : Jeong Weon Wu

10:30 **Magnetic polaron on dangling bond spins in CdSe colloidal nanocrystals** **N 13.1**
Louis Biadala,/ Elena V. Kozhemyakina, Anna V. Rodina, Dmitri R. Yakovlev, Benjamin Siebers, Tangi Aubert, Michel Nasilowski, Zeger Hens, Benoit Dubertet, Alexander L. Efros, Manfred Bayer
IEMN, CNRS, Avenue Henri Poincaré, 59491 Villeneuve-d'Ascq, France, Experimentelle Physik 2, Technische Universit¨at Dortmund, 44227 Dortmund, Germany, Ioffe Institute, Russian Academy of Sciences, 194021 St. Petersburg, Russia, Experimentelle Physik 2, Technische Universit¨at Dortmund, 44227 Dortmund, Germany,Experimentelle Physik 2, Technische Universit¨at Dortmund, 44227 Dortmund, Germany, Universiteit Gent, Department of Inorganic and Physical Chemistry, 9000 Ghent, Belgium, Laboratoire de Physique et d'Etude des Mat´eriaux, ESPCI, CNRS, 75231 Paris, France,Universiteit Gent, Department of Inorganic and Physical Chemistry, 9000 Ghent, Belgium, Laboratoire de Physique et d'Etude des Mat´eriaux, ESPCI, CNRS, 75231 Paris, France, Naval Research Laboratory, Washington DC 20375, USA, Experimentelle Physik 2, Technische Universit¨at Dortmund, 44227 Dortmund, Germany

11:00 **Strain dependence of band gaps and exciton energies in pure and mixed transition-metal dichalcogenides** **N 13.2**
Rodrick Kuate Defo, Shiang Fang, Sharmila N. Shirodkar, Georgios A. Tritsaris, Athanasios Dimoulas, Efthimios Kaxiras
Rodrick Kuate Defo, Shiang Fang, Efthimios Kaxiras. Department of Physics, Harvard University, Cambridge, Massachusetts 02138, USA Sharmila N. Shirodkar, Georgios A. Tritsaris, Efthimios Kaxiras. John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, Massachusetts 02138, USA Athanasios Dimoulas. Institute of Nanoscience and Nanotechnology, National Center for Scientific Research Demokritos, 15310, Aghia Paraskevi, Athens, Greece

11:15 **Space-and-time coherent dynamics of a correlated electron-hole pair in by-layer heterostructures** **N 13.3**
G. Goldoni, F. Grasselli, A. Bertoni
Deparment of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia, Italy, Deparment of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia, Italy, Istitute for Nanoscience, National Research Council, Modena, Italy,

11:30 **Localization of Confined Acoustic Phonons in Colloidal Dot-in-Rod Heterostructures** **N 13.4**
Mario Miscuglio, Miao-Ling Lin, Francesco Di Stasio, Ping-Heng Tan, Roman Krahne Istituto Italiano di Tecnologia, Genoa, Italy, Dipartimento di Chimica e Chimica Industriale, Unversità di Genova, Genoa, Italy, Institute of Semiconductors, Chinese Academy of Science, Beijing, China,

11:45 **Spin dynamics of coexisting core and shell trions in CdSe/CdS nanocrystals: evidence of surface-assisted spin-relaxation process** **N 13.5**
V. Pinchetti(1), G. Vaccaro(1), W. Bae(2), F. Meinardi(1), V. I. Klimov(2), S. Brovelli(1)
(1) Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via Roberto Cozzi 55, I-20125 Milano, Italy, (2) Chemistry Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, United States

12:00 **Charge carrier dynamics and trapping in TMDC devices towards optoelectronic applications** **N 13.6**
Iddo Amit, Nicola J. Townsend, Tobias J. Octon, C. David Wright, Monica F. Craciun, Saverio Russo
Centre for Graphene Science, College of Engineering, Mathematics and Physical Sciences, University of Exeter, United Kingdom

12:15 **Lunch**

Nanolasers and inorganic LEDs : Jean-Charles Ribierre

14:00 **Quantum Dot Lasers for Integrated Photonics** **N 14.1**
Peter M. Smowton, S. Shutts, R. Thomas, S.N. Elliott, S. Gillgrass, A.B. Krysa
Peter M. Smowton, S. Shutts, R. Thomas, S.N. Elliott, S. Gillgrass, Cardiff University A.B. Krysa, University of Sheffield

14:30 **A quantitative study of the material gain in colloidal core/shell Quantum Dots** **N 14.2**
Suzanne Bisschop, Pieter Geiregat, Tangi Aubert, Dries Van Thourhout, Edouard Brainis, Zeger Hens
Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Ghent, Belgium Photonics Research Group, INTEC Department, UGhent-IMEC, Techn. park-Zwijnaarde 15, 9052 Gent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Ghent, Belgium Photonics Research Group, INTEC Department, UGhent-IMEC, Techn.park-Zwijnaarde 15, 9052 Gent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Ghent, Belgium, Photonics Research Group, INTEC Department, UGhent-IMEC, Techn. park-Zwijnaarde 15, 9052 Gent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Ghent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Ghent, Belgium,

14:45 **Significant performance enhancement of InGaN/GaN nanorod LEDs with graphene electrodes by alumina surface passivation** **N 14.3**
G. Sarau1,2, M. Latzel2,3, P. Büttner2, K. Höflich1,2, M. Heilmann2, W. Chen4, X. Wen4, G. Conibeer4, S. Christiansen1,2,5
1. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, 2. Max Planck Institute for the Science of Light, Staudtstr. 2, 91058 Erlangen, Germany, 3. Institute of Optics, Information and Photonics, Friedrich-Alexander-Universität Erlangen-Nürnberg, Staudtstr. 7/B2, 91058 Erlangen, Germany, 4. School of Photovoltaic and Renewable Energy Engineering, University of New South Wales, Kensington, Sydney 2052, Australia, 5. Physics Department, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany

15:00 **Nanostructured emissive layer for light emitting diodes** **N 14.4**
Sofia Paulo, Werther Cambarau, Emilio Palomares, Eugenia Martinez-Ferrero
Sofia Paulo, Eugenia Martinez-Ferrero: Eurecat, Avda. Ernest Lluch 36, 08302 Mataró (Spain), Sofia Paulo, Werther Cambarau, Emilio Palomares: ICIQ, Avda. Països Catalans 16, 43007 Tarragona (Spain)

15:15 **Control of coupling and emission dynamics in InAs/InAlGaAs/InP hybrid quantum well-quantum dot structures emitting at 1.55 μm** — N 14.5

Wojciech Rudno-Rudziński, Marcin Syperek, Aleksander Maryński Janusz Andrzejewski, Jan Misiewicz, Sven Bauer, Vitalii I. Sichkovskyi Johann P. Reithmaier, Grzegorz Sęk
Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, St. Wyspiańskiego 27, 50-370 Wrocław, Poland, Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, St. Wyspiańskiego 27, 50-370 Wrocław, Poland, Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, St. Wyspiańskiego 27, 50-370 Wrocław, Poland, Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, St. Wyspiańskiego 27, 50-370 Wrocław, Poland, Technische Physik, Institute of Nanostructure Technology and Analytics, CINSaT, University of Kassel, Heinrich Plett-Str. 40, D-34132 Kassel, Germany, Technische Physik, Institute of Nanostructure Technology and Analytics, CINSaT, University of Kassel, Heinrich Plett-Str. 40, D-34132 Kassel, Germany, Technische Physik, Institute of Nanostructure Technology and Analytics, CINSaT, University of Kassel, Heinrich Plett-Str. 40, D-34132 Kassel, Germany, Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, St. Wyspiańskiego 27, 50-370 Wrocław, Poland,

15:30 **Broadband amplified spontaneous emission and random lasing from wurtzite CdSeCdS giant-shell nanocrystals** — N 14.6

Francesco Di Stasio, Anatolii Polovitsyn, Ilaria Angeloni, Iwan Moreels, Roman Krahne
Nanochemistry Department, Istituto Italiano di Tecnologia, Via Morego 30, Genoa 16163, Italy

15:45 **Optically Pumped Lasing From Dilute Nitride GaAs/GaNAs Core/Shell NWs** — N 14.7

Shula Chen (1), Mattias Jansson (1), Jan E. Stehr (1), Yuqing Huang (1), Fumitaro Ishikawa (2), Weimin M. Chen (1), Irina Buyanova (1)
(1) Department of Physics, Chemistry, and Biology, Linköping University, 58183, Linköping, Sweden, (2) Graduate School of Science and Engineering, Ehime University, Matsuyama 790-8577, Japan.

16:00 **Coffee break**

Poster : Iwan Moreels

16:30 **Synthesis of manganese-doped zinc selenide (ZnSe:Mn) nanoparticles in aqueous medium and their surface modification** — N 15.1

Svitlana Sovinska, Adam Zaba, Katarzyna Matras-Postolek
Faculty of Chemical Engineering and Technology, Cracow University of Technology, Warszawska St. 24, Krakow, 31-155 Poland

16:30 **Study of structural, electronic, magnetic and optical of Cr- and Fe -doped CdTe** — N 15.2

A. Zitouni, S. Bentata, B. Bouadjemi, T. Lantri, Z. Aziz, S. Cherid, A. Sefir
Laboratory of Technology and Solid's Properties, Faculty of Sciences and Technology, Abdelhamid Ibn Badis University, BP 227 Mostaganem 27000, Algeria

16:30 **Many-body Effect, Carrier Mobility, and Device Performance of Hexagonal Arsenene and Antimonene** — N 15.3

Yangyang Wang, Pu Huang, Meng Ye, Ruge Quhe, and Jing Lu
Nanophotonics and Optoelectronics Research Center, Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology, Beijing 100094, P. R. China

16:30 **The preparation and ferromagnetism of single crystal ε-Fe3N(111) film on SrTiO3(100) substrate** — N 15.4

Yaping Qi, Xiangbo Liu, Ju Gao
Department of Physics, The University of Hong Kong, Pokfulam Road, Hong Kong, China

16:30 **Revisiting the neutral C-vacancy in Diamond: Localization of electrons in DFT** — N 15.5

Danny E.P. Vanpoucke, Ken Haenen
UHasselt, Institute for Materials Research (IMO-IMOMEC), Agoralaan, 3590 Diepenbeek, Belgium, IMOMEC, IMEC vzw, 3590 Diepenbeek, Belgium, UHasselt, Institute for Materials Research (IMO-IMOMEC), Agoralaan, 3590 Diepenbeek, Belgium, IMOMEC, IMEC vzw, 3590 Diepenbeek, Belgium

16:30 **Tunable optical nonlinearity of nanostructured TiO2 thin films decorated with noble metal nanoparticles** — N 15.6

Avesh Kumar1,*, T. Mohanty2, R. P. Singh1
1, Physical Research Laboratory, Navrangpura, Ahmedabad-380009, India 2, School of Physical Sciences, Jawaharlal Nehru University, New Delhi-110067, India

16:30 **Single-crystalline GaN nanomembranes** — N 15.7

M. Benaissa (1), R.T. ElAfandy (2), D. Ihiawakrim (3), Tien Khee Ng (2), O. Ersen (3), Boon S. Ooi (2)
(1) LMPHE, Physics Department, Faculté des Sciences, Mohammed V University, 4 Avenue Ibn Batouta, B.P. 1014 RP, 10000 Rabat, Morocco (2) Photonics Laboratory, Computer, Electrical and Mathematical Sciences and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal , 23955-6900 , Kingdom of Saudi Arabia (3) Institut de Physique et Chimie de Strasbourg

16:30 **Study on Work Function shift in different ratio of Ti/Al HKMG Deposited by ALD with Various Thermal Treatment** — N 15.8

Tai-Chen Kuo, Wen-Hsi Lee
National Cheng-Kung University

16:30 **Temperature induced enhancement of tunneling injection photoluminescence in coupled InGaN QW-QDs nanostructures** — N 15.9

Z. C. Su, S. J. Xu
Department of Physics, Shenzhen Institute of Research and Innovation (SIRI), and HKU-CAS Joint Laboratory on New Materials, The University of Hong Kong, Pokfulam Road, Hong Kong, China

16:30 **Improved reliability performance of nanoscale junctionless DG MOSFET with graded channel doping engineering** — N 15.10

Toufik Bentrcia 1, Fayçal Djeffal 1,2 , Djemai Arar 2 and Zohir Dibi2
1 LEPCM, Department of Physics, University of Batna 1, Batna 05000, Algeria. 2 LEA, Department of Electronics, University of Batna 2, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

16:30 **Effects of nanowire fin structure on transconductance characteristics of AlGaN/GaN FinFETs** — N 15.11

Yong Tae Kim1 and Jung Hee Lee2
1Semiconductor Materials & Devices Lab., Korea Institute of Science and Technology Seoul, Korea 2School of Electronic Engineering, Kyungpook National University Daegu, Korea

16:30 **ELECTRONIC STRUCTURE OF Ga1 – XAlXAs NANOSTRUCTURES GROWN ON THE GaAs SURFACE BY ION IMPLANTATION** — N 15.12

S.B. Donaev, B.E. Umirzakov
Tashkent state technical university

16:30 **The electrical switching properties of Ge10Se5Sb85 chalcogenide glass** — N 15.13

S. Abouelhassan
Physics Department ,Faculty of Science, Jazan University, KSA

16:30 **Visible-light Sensitization of Boron-Doped Nanocrystalline Diamond Electrodes** — N 15.14

L. Kavan, Z. Vlckova-Zivcova, H. Krysova, P. Cigler, V. Mortet
J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Dolejškova 3, CZ-18223 Prague 8, Czech Republic, Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Flemingovo nam. 2, 166 10 Prague 6, Czech Republic, Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic

16:30 **Attenuation of carrier thermionic emission in self-assembled InAs QDs by varying capping layer composition** — N 15.15

Debiprasad Panda, Debabrata Das, Vinayak Chavan, Nilesh Shinde, Subhananda Chakrabarti
Department of Electrical Engineering, Indian Institute of Technology Bombay, India

16:30 **Investigations of formation the nanoscale defects in crystalline and powder ZnSe doped Fe for laser application** — N 15.16

E. Gavrishuk**, M. Zykova*, E. Mozhevitina**, R. Avetisov**, V. Ikonnikov**, D. Savin**, K. Firsov***, S. Kazantsev***, I. Kononov***, I. Avetissov*
*Dmitry Mendeleev University of Chemical Technology of Russia **G.G. Devyatykh Institute of Chemistry of High-Purity Substances RAS ***Prokhorov General Physics Institute of RAS

16:30 **Resistive Switching Characteristics and Behaviors in Ni/NiO/HfO2 Nanowire ReRAM Device.** — N 15.17

Ting-Kai Huang, Jui-Yuan Chen, Yi-Hsin Ting and Wen-Wei Wu
Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 300, Taiwan

16:30 **Observing Resistive Switching Behavior in Core-shell Ni/NiO Nanowires Crossbar Memristor** — N 15.18

Yi-Hsin Ting, Jui-Yuan Chen, Chun-Wei Huang, Ting-Kai Huang, Wen-Wei Wu
Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 300, Taiwan

16:30 **APPLICATION OF ION IMPLANTATION FOR NANOSIZED STRUCTURES ON THE SURFACE AND SUBSURFACE REGION OF SEMICONDUCTOR** **N 15.19**
B.E. Umirzakov, A.K. Tashatov, E. Rabbimov
Tashkent state technical university

16:30 **Characteristics of Resistive Switching in ZnO/SiOx Multi-Layers for Transparent Nonvolatile Memory Devices** **N 15.20**
Kyongmin Kim, Eunkyeom Kim, Youngill Kim, Jung Hyun Sok, and Kyoungwan Park
University of Seoul, Applied Materials Korea, Daegu Gyeongbuk Institute of Science & Technology, Korea

16:30 **Synthesis of TiO2 Nanorods for Schottky Type UV-Photodetectors and Third-Generation Inorganic Solar Cells** **N 15.21**
Elif Peksu, Ozge Guller, Hakan Karaağaç*
Istanbul Technical University, Department of Physics, Maslak, 34469 İstanbul, TURKEY

16:30 **Hydrogen response characteristics of 100MeV O7+ ions irradiated nanocrystalline SnO2 films** **N 15.22**
Riti Sethi, Apurva Gupta, Udai B. Singh, Anver Aziz, G.B.V.S. Lakshmi, D.K. Avasthi and Azher M. Siddiqui
Department of Physics, Jamia Millia Islamia, New Delhi-110025, Nanostech Laboratory, Indian Institute of Technology-Delhi, New Delhi-110016, Inter University Accelerator Center, Aruna Asaf Ali Marg, New Delhi-110067, Amity University, Noida, Uttar Pradesh-201313

16:30 **INVESTIGATION OF STRUCTURAL, OPTICAL AND ELECTRICAL PROPERTIES OF In DOPED SnO2 THIN FILMS DEPOSITED BY SPRAY PYROLYSIS** **N 15.23**
A. Hadri, A. El Hat, M. Sekkati, A. Mzerd
laboratory of Materials Physics, University Mohammed V, Faculty of Sciences, Physics Department, Rabat, Morocco.

16:30 **Microwave – assisted synthesis, surface modification and characterization of Cu2ZnSnS4 (CZTS) nanocrystals** **N 15.24**
Adam Zaba, Svitlana Sovinska, Katarzyna Matras-Postolek, Michal Borysiewicz*, Tomasz Wojtowicz**
Cracow University of Technology, Warszawska St. 24, Cracow, 31-155 Poland, Institute of Electron Technology, Lotnikow Av. 32/46, Warsaw, 02-688 Poland*,Institute of Physics, Lotnikow Av. 32/46, Warsaw, 02-688 Poland**

16:30 **Control of free carrier density in core-shell nanowires by radial material modulation** **N 15.26**
Andrea Bertoni, Fabrizio Buscemi, Miquel Royo, Guido Goldoni
Istituto Nanoscienze - CNR, Modena, Italy Deparment of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia, Italy, Deparment of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia, Italy, Institut de Ciència de Materials de Barcelona (ICMAB–CSIC), Barcelona, Spain

16:30 **Seed Layer Thickness Effects of Atomic Layer Deposited SrTiO3 thin film** **N 15.27**
Sang Hyeon Kim, Woongkyu Lee, Cheol Hyun An, Hoju Song, Dae Seon Kwon and Cheol Seong Hwang*
Department of Materials Science and Engineering, Seoul National University, Seoul 151-744, Korea , Memory Thin Film Technology Team, Memory Division, Samsung Electronics Co.Ltd, Department of Materials Science and Engineering, Northwestern University, Evanston, IL 60208

16:30 **High sensitive GaN nanowire humidity senor enhanced by UV photoexcitation** **N 15.28**
Mingzeng Peng
University of Science and Technology Beijing, China

16:30 **Microwave Photodetection in an Ultraclean Suspended Bilayer Graphene p–n Junction** **N 15.29**
Minkyung Jung,/ Peter Rickhaus, Simon Zihlmann, Peter Makk, Christian Schönenberger
Department of Physics, University of Basel, Klingelbergstrasse 82, CH-4056 Basel, Switzerland, Division of Nano-Energy, DGIST, 333 Techno Jungang-Daero, Hyeongpung, Daegu, Korea 42988

16:30 **Nanoheterostructure p-(Ag2O-HgCdTe) formed by ion implantation** **N 15.30**
A.B. Smirnov1, R.K. Savkina1, R.S. Udovytska1, Krystab T.G2
1V. Lashkaryov Institute of Semiconductor Physics, NASU, pr.Nauki 43,03028, Kyev, Ukraine 2Instituto Politécnico Nacional - ESFM, Department of Physics, Av. IPN, Ed. 9 U.P.A.L.M., 07738, Mexico D.F.

16:30 **Characterization of nanostructured CdSb and Cd1-xZnxSb thin film heterojunctions** **N 15.31**
Strebezhev V.M., Kleto G.I., Yuriychuk I.M., Vorobets G.I., Kukurudziak M.S., Bobko M.A.
Physical, Technical and Computer Sciences Institute, Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine

16:30 **In-situ Electric Field-Induced Modulation of Photoluminescence in Rare Earth doped Ba(Zr,Ti)O3 Ceramics** **N 15.32**
Yi-Lok Chan, K. W. Kwok
Department of Applied Physics, The Hong Kong Polytechnic University, Kowloon, Hong Kong, China. email: apkwkwok@polyu.edu.hk (K. W. Kwok)

16:30 **Dopant-free mono-material diode made from the semimetal bismuth** **N 15.33**
Farzan Gity*, Lida Ansari*, Martin Lanius**, Peter Schüffelgen**, Gregor Mussler**, Detlev Grützmacher**, Jim Greer*
* Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland T12 R5CP ** Peter Grünberg Institute 9 & Jülich Aachen Research Alliance (JARA-FIT), Research Center Jülich, Germany

16:30 **Over Etching of Ge Layers and Resulted Anormal Device Performance** **N 15.34**
Chun-Lin Chu, Bo-Yuan Chen and Guang-Li Luo
National Nano Device Laboratories

16:30 **Precise Composition Control for Multicomponent Cu-Zn-In-Se Colloidal Nanocrystals** **N 15.35**
Maksym Yarema,1 Nuri Yazdani,1 Nikola Dordevic,1 Weyde M. M. Lin,1 Olesya Yarema,1 Deniz Bozyigit,1 Petr Khomyakov,2 Mathieu Luisier,2 Vanessa Wood1
1 - Laboratory for Nanoelectronics, Department of Information Technology and Electrical Engineering, ETH Zurich, CH-8092 Zurich, Switzerland 2 - Nano TCAD Group, Department of Information Technology and Electrical Engineering, ETH Zurich, CH-8092 Zurich, Switzerland

16:30 **Development of High efficient Silicon-MoS2 Heterojunction Photodetector with large area scalability** **N 15.36**
Veerendra Dhyani, Samaresh Das
Centre for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi-110016, India

16:30 **Direct Growth of layer controlled MoS2 on Graphene for Atomically Thin 2D photodetector Application** **N 15.37**
DaeGuen Choi, Youngjun Kim, Whang Je Woo, Jusang Park, Hyungjun Kim
School of Electrical and Electronic Engineering, Yonsei University, Seoul 120-749, Korea

16:30 **FABRICATION AND CHARACTERIZATION OF HIGHLY DOPED N-TYPE JUNCTION IN GERMANIUM** **N 15.38**
Siti Rahmah Aid(1),Nur Nadhirah Mohamad Rashid(1), Umar Abdul Aziz(1),Anthony Centeno(1),Satoru Matsumoto(1), Akira Suwa(2), Hiroshi Ikenoue(2), Fang Xie(3)
(1)Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia, Jalan Sultan Yahya Petra, 54100 Kuala Lumpur, Malaysia, (2) Graduate School of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan, (3) Department of Material, Imperial College London, England, United Kingdom

16:30 **Capacitance study of silicon multilayers containing tin nanocrystals** **N 15.39**
M. J. Haastrup, L. Scheffler, J. L. Hansen, B. Julsgaard
Institute for Physics and Astronomy, Aarhus University, Denmark, Institute for Physics and Astronomy, Aarhus University, Denmark, Interdisciplinary Nanoscience Center (iNano), Aarhus University, Denmark, Interdisciplinary Nanoscience Center (iNano), Aarhus University, Denmark, Institute for Physics and Astronomy, Aarhus University, Denmark

16:30 **Phonons confinement in GaP twin and crystal phase superlattices nanowires** **N 15.40**
Z. Azdad[1] ,M. De Luca[1], S. Assali[2], Y. Ren[2], X Cartoixà [3], R. Rurali[4], E. P. A. M. Bakkers[2], and I. Zardo[1]
[1] Department of Physics, University of Basel, Basel, Switzerland [2] Department of Applied Physics, Technical University of Eindhoven, Eindhoven, The Netherlands [3] Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, 08193 Bellaterra, Barcelona, Spain [4] Institut de Ciència de Materials de Barcelona (ICMAB–CSIC), Barcelona, Spain

16:30 **High sensitivity flame sensor based on PbS Colloidal Quantum Dots** **N 15.41**
A. De Iacovo1, C. Venettacci1, L. Colace, L. Scopa2 and S. Foglia2
1 NOOEL-Nonlinear Optics and OptoElectronics Lab, Dept. of Engineering, University Roma Tre, 00146, Rome Italy 2 CNR, Istituto dei Materiali per l'Elettronica ed il Magnetismo, Rome, Italy

16:30 **Nonlinear properties associated to 1s-1p interband transition in AlAs/GaAs core/shell spherical quantum dot** **N 15.42**
A. EL Aouami, M. EL Haouari, A. Talbi, E. Feddi, F. Dujardin
Groupe d'Optoélectronique des Boites Quantiques de Semiconducteurs, ENSET Mohamed V University, Rabat, Morocco.

16:30 **Thickness Controlled Few-Layer Black Phosphorus via Hydrogen Plasma Treatment** **N 15.43**
Wan Li1, Zhinan Guo2, Xue-Feng Yu2*, and Paul K. Chu1*
1 Department of Physics & Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China, 2 Institute of Biomedicine and Biotechnology, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen 518055, China.

16:30 **PROPERTIES OF As2Se3 CHALCOGENIDE GLASSES DOPED WITH MANGANESE** **N 15.44**
Paiuk O.1, Revutska L.2, Stronski A.1, Strelchuk V.1, Gudymenko A.1, Vuichyk M.1, Gubanova A.3, Kryskov Ts.3, Oleksenko P.1, Lahderanta E.
1V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine. 2National Technical University of Ukraine “KPI”, Kyiv, Ukraine. 3Kamianets-Podilsky National University, Kamianets-Podilsky, Ukraine. 4Lappeenranta University of Technologies, Lappeenranta, Finland.

16:30 **Investigation of optical anisotropy in amorphous TiO2 films produced by pulsed-laser deposition** **N 15.45**
Nadya E. Stankova1, Ivan G. Dimitrov1, Petar A. Atanasov1, D. Kovacheva2, At.N. Tzonev3
1Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsaridradsko shose Blvd., Sofia 1784, Bulgaria, 2Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Acad. Georgi Bontchev str. Bl.11, 1113 Sofia, Bulgaria 3Department of Solid State Physics and Microelectronics, Faculty of Physics, University of Sofia, 5 J. Bouchier Blvd., Sofia, Bulgaria

16:30 **Optical and photoelectrical properties of nanolamellar structures obtained by thermal annealing of InSe plates in Zn vapors** **N 15.46**
Dumitru Untila 1,2, Igor Evtodiev 1,2, Iuliana Caraman 3, Nicolae Spalatu 4, Liliana Dmitroglo 1, Mihail Caraman 1
1 Faculty of Physics and Engineering, Moldova State University, A. Mateevici, 60, MD-2009, Chisinau, Republic of Moldova, 2 Institute of the Electronic Engineering and Nanotechnologies “D. Ghitu”, Academy of Sciences of Moldova, Academiei, 3/3, MD-2028, Chisinau, Republic of Moldova, 3 Engineering Department, “Vasile Alecsandri” University of Bacau, Calea Marasesti, 157, RO-600115, Bacau, Romania, 4 Tallinn University of Technology, Department of Materials Science, Ehitajate tee, 5, EE-19086, Tallinn, Estonia

16:30 **Investigation of optical gain in 1.55 μm p-i-n GaNAsBi-based DQWs** **N 15.47**
I. Guizani, K. Chakir, M. M. Habchi and A. Rebey*
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro-Epitaxies et Applications, 5019 Monastir, Tunisia

16:30 **Studying thermal properties of normal and twinned Ge nanowires through Raman spectroscopy** **N 15.48**
Dipanwita Majumdar1*, Subhajit Biswas2, Tandra Ghoshal3, Justin D. Holmes2,4, and Achintya Singha1
1Department of Physics, Bose Institute, 93/1 Acharya Prafulla Chandra Road, Kolkata 700009, India *Presently, Condensed Matter Physics Division, Saha Institute of Nuclear Physics, Kolkata 700064, India 2Materials Chemistry & Analysis Group, Department of Chemistry and the Tyndall National Institute and 3Materials Research Group, Department of Chemistry and the Tyndall National Institute, University College Cork, Cork, Ireland 4AMBER@CRANN, Trinity College Dublin, Dublin, Ireland

16:30 **First-principles investigation of graphane with 3d transition-metal adatoms** **N 15.49**
MP Molepo, EB Lombardi
College of Graduate Studies,University of South Africa, UNISA 0003, Pretoria, South Africa

16:30 **Excitonic states in InP-based coupled QD – QW structures – eight-band k·p theory combined with Hartree-Fock approximation** **N 15.50**
Janusz Andrzejewski
Laboratory for Optical Spectroscopy of Nanostructures, Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, Wyb. Wyspiańskiego 27, 50-270 Wrocław, Poland

16:30 **HETERO-NANOSTRUCTURES BASED ON QUASI—2D GaSe LAYERED CRYSTALS, THIN LAYERS AND QUANTUM DOTS OF THE IV—VI COMPOUNDS** **N 15.51**
A.P. Bakhtinov (1), V.N. Vodopyanov (1), Z.D. Kovalyuk (1), V.V. Netyaga (1), O.S. Lytvyn (2)
(1) Institute for Problems of Materials Science, NAS of Ukraine, Chernivtsi Branch, Chernivtsi, Ukraine, (2) Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine

16:30 **Luminous characteristics of Al2O3/YAG:Ce3+ ceramic phosphor plate** **N 15.52**
Seok Bin Kwon, Young Hyun Song, Chul Woo Lee, and Dae Ho Yoon
School of Advanced Materials Science and Engineering, SungKyunKwan University, Suwon 440-746, Republic of Korea, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon 440-746, Republic of Korea

16:30 **Thin Film Germanium Photonic Architectures Exhibiting Enhanced Absorption from VIS to NIR Frequencies** **N 15.53**
Pau Molet, Juan Luis Garcia-Pomar, Cristiano Matricardi, Miquel Garriga, Maria Isabel Alonso, Agustín Mihi
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Catalonia, Spain

16:30 **Strain and strain energy in axial-heteroepitaxial GaAs/InAs nanopillars analyzed by atomistic and continuum elastic calculations** **N 15.54**
Thomas Riedl 1,2, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany

16:30 **Quality of low cost power generating material is depends on the Nano-mechanisms involved in the deposition** **N 15.55**
Dr. Dhananjoy Roy
Post Graduate Department of Physics, Barasat Govt. College (Affilated to West Bengal State University) 10 KNC Road, Barasat, 24 PG(N) - 700124, West Bengal, India Email: dhananjoy1964@rediffmail.com

16:30 **GROWTH OF KNN THIN FILMS FOR NON-LINEAR OPTICAL APPLICATIONS** **N 15.57**
Shweta Sharma, Vinay Gupta, Monika Tomar
Department of Physics and Astrophysics, University of Delhi, Delhi, India, Department of Physics and Astrophysics, University of Delhi, Delhi, India, Physics Department, Miranda House, University of Delhi, Delhi, India

16:30 **Experimental analysis of transport properties of Se-Te-Sn-Ag alloy** **N 15.58**
Ankita Srivastava, Neeraj Mehta* Department of physics, Banaras Hindu University, Varanasi 221005, India Email:ankitaphysicsbhu19@gmail.com
Corresponding author* Dr. Neeraj Mehta Department of physics, Banaras Hindu University, Varanasi 221005, India

16:30 **Performance Improvement of SCM based RoF System against Non-Linear Distortions by Employing different Modulation Techniques** **N 15.59**
Suresh Kumar, Abhimanyu Nain
Suresh Kumar , Assistant Prof., UIET, MDU Rohtak, India , + 91-9466825595
Abhimanyu Nain ,Assistant Prof., GJUS&T Hisar, India.

16:30 **Investigation of the Si:Au nanowhiskers grown and doped by pulsed laser deposition method** **N 15.61**
K. Maksimova, U.Koneva, P. Shvets, A.Kozlov, A. Goikhman
REC “Functional Nanomaterials”, I. Kant Baltic Federal University, Nevskogo 14, Kaliningrad, 238300, Russian Federation

16:30 **Experimental analysis of transport properties of Se-Te-Sn-Ag alloy** **N 15.62**
Ankita Srivastava, Neeraj Mehta* Department of physics, Banaras Hindu University, Varanasi 221005, India Email:ankitaphysicsbhu19@gmail.com
Corresponding author* Dr. Neeraj Mehta Department of physics, Banaras Hindu University, Varanasi 221005, India

Inorganic nanostructures-Optoelectronics : Juan Ignacio Climente

08:45 **Morphology, structure and enhanced PL of molecular beam epitaxial In0.2Ga0.8As layers on nanopillar patterned GaAs** — **N 16.1**
Thomas Riedl 1,2, Vinay Kunnathully 1,2, Alexander Karlisch 1,2, Dirk Reuter 1,2, Nils Weber 1,2, Cedrik Meier 1,2, Roland Schierholz 3, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany 3. Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Wilhelm-Johnen Straße, 52425 Jülich, Germany

09:00 **GaSb based Mid-Infrared Photonic Materials and Devices Monolithically grown onto Silicon** — **N 16.2**
P. D. Hodgson, E.Delli, E. Repiso, A. Craig, A. Marshall, A. Krier, P. J. Carrington
Department of Engineering, Lancaster University, Lancaster, LA1 4YW, UK, Department of Physics, Lancaster University, Lancaster, LA1 4YB, UK,

09:15 **Modification of n-Si(100)/ZnO(:C) interface by carbon incorporation** — **N 16.3**
A.V. Vasin, A.V. Rusavsky, V.P. Kostylyov, V.M. Vlasyuk, Yu.V. Gomeniuk, A.N. Nazarov, S. Prucnal, W. Skorupa
Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine
Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany

09:30 **Few layers and multilayers MoS2/WS2 heterojunctions: optical, electronic and interface properties** — **N 16.4**
Intu Sharma and B. R. Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi, New Delhi, 110016, India

09:45 **Temperature dependent negative differential resistance behavior at Pt/Nb:SrTiO3 interface** — **N 16.5**
Yeon Soo KIM 1, Sung Moon HWANG 2, Vadim Sh.YALISHEV 3, Jihoon JEON1, Mi Jung LEE 1, Shavkat U. YULDASHEV 3, Taekjip CHOI 2, Bae Ho PARK*1
1Division of Quantum Phases & Devices, Department of Physics, Konkuk University, 2HMC, Department of Nanotechnology and Advanced materials engineering, Sejong University, 3Quantum-Functional Semiconductor Research Center, Dongguk University

10:00 **Coffee break**

Nanostructured diodes, detectors and sensors : Iwan Moreels

10:30 **Hybrid Carbon-Nanotubes and Nanoparticles Simple Infrared Printable Detectors** — **N 17.1**
Lilach Saltoun, Shira Yochelis, Ela Sachyani, Shlomo Magdassi, Yossi Paltiel
The Hebrew University of Jerusalem

10:45 **Photodetectors based on heterostructures n-Si/p-nanostructured semiconductor** — **N 17.2**
Dana Cristea, Paula Obreja, Cosmin Obreja, Bogdan Bita
National Institute for Research and Development in Microtechnologies - IMT Bucharest 077190, Voluntari - Bucharest, Romania

11:00 **Noise characterization of Near Infrared PbS Colloidal Quantum Dots photodetectors** — **N 17.3**
A. De Iacovo1, C. Venettacci1, L. Colace1, L. Scopa2 and S. Foglia2
1 NOOEL-Nonlinear Optics and OptoElectronics Lab, Dept. of Engineering, University Roma Tre, 00146, Rome Italy 2 CNR, Istituto dei Materiali per l'Elettronica ed il Magnetismo, Rome, Italy

11:15 **GeSi nanocrystals /TiO2 multilayers with photosensing properties** — **N 17.4**
Catalin Palade (1), Adrian Slav (1), Ana-Maria Lepadatu (1), Florin Comanescu (2), Munizer Purica (2), Adrian Dinescu (2), Valentin Serban Teodorescu (1), Raluca Müller (2), Magdalena Lidia Ciurea (1)
(1) National Institute of Materials Physics, Romania (2) National Institute for Research and Development in Microtechnologies, Romania

11:30 **High performance UV photodetector based on ZnO nanotubes grown on p-Si substrate** — **N 17.5**
Tahani Flemban, Idris Ajia, Norah Alwadai, Md Azimul Haque, Tom Wu, and Iman Roqan
Physical Sciences and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia.

11:45 **Synthesis of ZnSe:Ag nanowires and their surface modifications for photovoltaic applications** — **N 17.6**
Svitlana Sovinska, Adam Zaba, Katarzyna Matras-Postolek
Faculty of Chemical Engineering and Technology, Cracow University of Technology, Warszawska St. 24, Krakow, 31-155 Poland

12:00 **Hybrid YIG-nanodiamond system for enhanced quantum entanglement and nanoscale sensing** — **N 17.7**
P. Andrich, C.F. de las Casas, X. Liu, H.L. Bretscher, J.R. Berman, F.J. Heremans, P.F. Nealey, D.D. Awschalom
P. Andrich, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, USA, C.F. de las Casas, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, USA, X. Liu, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, USA, H.L. Bretscher, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, USA, J.R. Berman, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, F.J. Heremans, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, Materials Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA, P.F. Nealey, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, Materials Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA, D.D. Awschalom, Institute for Molecular Engineering, University of Chicago, Chicago, Illinois 60637, Materials Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA,

12:15 **Lunch**

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM O

Wide bandgap semiconductors for LEDs, solar and related energy technologies

Symposium Organizers :

Haiyan OU, Denmark Technical University, Lyngby, Denmark

Mikael SYVÄJÄRVI, Linköping University, Sweden

Ole Martin LØVVIK, University of Oslo, Norway

Satoshio KAMIYAMA, Meijo University, Nagoya, Japan

Be published in Advanced Materials Proceedings (VBRI Press)

Monday 22 May 2017

SiC : Didier Chaussende

09:00 **Review of SiC materials technology** **O 1.1**
Peter J. WELLMANN
Crystal Growth Lab, Materials Department 6 (i-meet), University of Erlangen (FAU), Martnesstr. 7, 91058, Erlangen, Germany

09:30 **Integrated optical bias selector based on a tandem SiC optical filter** **O 1.2**
M. Vieira, M. A. Vieira, P. Louro, V. Silva, A Fantoni
Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1959-007 Lisboa, Portugal , CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal, DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal,

09:45 **Structure and infrared response of 4H SiC homoepitaxial wafers** **O 1.3**
Ondrej Caha (1,2), Maria Losurdo (3), Kurt Hingerl (4), Josef Humlicek (1,2)
(1) Central European Institute of Technology, Masaryk University, Kotlarska 2, CZ-61137 Brno, Czech Republic, (2) Faculty of Science, DCMP, Masaryk University, Kotlarska 2, CZ-61137 Brno, Czech Republic, (3) Institute of Nanotechnology, CNR-NANOTEC, Dept. Chemistry, Via Orabona 4, 70126 Bari, Italy, (4) Center for Surface and Nanoanalytics, Johannes Kepler University in Linz, Altenbergerstrasse 69, 4040 Linz, Austria

10:00 **Coffee break**

LED : Mikael Syväjärvi

10:30 **Liquid Solution Phase Epitaxial Growth of Al-doped f-SiC for LEDs** **O 2.1**
Kai Tang, Xiang Ma, Casper van der Eijk, Haiyan Ou2
SINTEF Materials and Chemistry, Trondheim, Norway, Department of Photonics Engineering, Technical University of Denmark, Denmark

10:45 **Indium-free Transparent Ohmic Contacts to N-polar n-type GaN** **O 2.2**
M. A. Hopkins, S. Thornley, J. Dutson, G. Christmann, M. Benkhaira, C. Ballif, S. Nicolay, J. Niemela, M. Creatore, J. Ellis, D.W.E. Allsopp
M. A. Hopkins, D.W.E. Allsopp are with Dept of Electrical and Electronic Engineering, University of Bath, Bath, BA2 7AY, UK S. Thornley, J. Dutson are with Plasma Quest Ltd, Osbourne Way, Hook, Hampshire, RG27 9UT, UK G. Christmann, M. Benkhaira, C. Ballif, S. Nicolay are with CSEM, Rue Jaquet-Droz 1, 2002 Neuchatel, Switzerland J. Niemela, M. Creatore are with Department of Applied Physics, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands J. Ellis is with Plessey Semiconductors Ltd., Tamerton Road, Roborough, Plymouth, PL6 7BQ, UK

11:00 **Saturation in ceramic phosphors illuminated by a blue laser diode** **O 2.3**
A. Krasnoshchoka, A. Thorseth, C. Dam-Hansen, D. D. Corell, P. M. Petersen, O. B. Jensen
DTU Fotonik, Department of Photonics Engineering, Technical University of Denmark, Frederiksborgvej 399, Roskilde, Denmark

11:15 **Quenching of red Mn4+ luminescence in K2TiF6:Mn4+ w-LED phosphors.** **O 2.4**
Tim Senden, Relinde van Dijk-Moes, Andries Meijerink.
Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, Utrecht University, P.O. Box 80000, 3508 TA Utrecht, The Netherlands

11:30 **Lunch**

SiC : Peter Wellmann

14:00 **Liquid Phase Epitaxy of Silicon Carbide: perspectives for high quality, heavily doped epilayers** **O 3.1**
Didier Chaussende, Yun-Ji Shin, Kanaparin Ariyawong, Jean-Marc Dedulle, Eirini Sarigiannidou, Odette Chaix-Pluchery, Thierry Ouisse
CNRS, Univ. Grenoble Alpes, LMGP, F-38000 Grenoble, France

14:30 **Characterization of defects and stress in 3C-SiC grown by Sublimation Epitaxy using 3C-SiC-on-Si templates** **O 3.2**
P. Schuh, M. Schöler, G. Litrico, F. La Via, M. Mauceri, P. J. Wellmann
Crystal Growth Lab, Materials Department 6 (i-meet), FAU Erlangen-Nuremberg, Martensstr. 7, D-91058 Erlangen, Germany, Crystal Growth Lab, Materials Department 6 (i-meet), FAU Erlangen-Nuremberg, Martensstr. 7, D-91058 Erlangen, Germany, CNR-IMM, sezione di Catania, Stradale Primosole 50, I-95121, Italy, CNR-IMM, sezione di Catania, Stradale Primosole 50, I-95121, Italy, E.T.C. Epitaxial Technology Center, Sedicesima Strada, I-95121 Catania, Italy,Crystal Growth Lab, Materials Department 6 (i-meet), FAU Erlangen-Nuremberg, Martensstr. 7, D-91058 Erlangen, Germany

14:45 **Fabrication and Luminescence Properties in Rare Earth Doped a-SiC Thin Films** **O 3.3**
L. F. Flores Escalante1, K. Y. Tucto Salinas1, J. A. Guerra Torres1, 2, A. Töfflinger3, R. Weingärtner1
1Departamento de Ciencias, Sección Física, Pontificia Universidad Católica del Perú, Av. Universitaria 1801, Lima 32, Perú, 2Materials Science 6, Institute of Materials for Electronics and Energy Technology (I-MEET), Friedrich-Alexander-Universität Erlangen–Nürnberg, Martensstrasse 7, 91058 Erlangen, Germany, 3Chair Materials for Electronics, Institute of Materials Engineering and Institute of Micro and Nanotechnologies MacroNano®, TU Ilmenau, Gustav-Kirchhoff-Str. 5, 98693 Ilmenau, Germany.

15:00 **Low Temperature Photoluminescence of 6H fluorescent SiC** **O 3.4**
Yi Wei, Ulrike Künecke, Andres Osvet, Valdas Jokubavicius, Mikael Syväjärvi, Peter Wellmann, Haiyan Ou
Department of Photonis Engineering, Technical University of Denmark, Institute of Materials for Electronics and Energy Technology (I-MEET), Department of Materials Science and Engineering, University of Erlangen-Nuremberg,Institute of Materials for Electronics and Energy Technology (I-MEET), Department of Materials Science and Engineering, University of Erlangen-Nuremberg, Department of Physics, Chemistry and Biology, Linköping University, Department of Physics, Chemistry and Biology, Linköping University, Institute of Materials for Electronics and Energy Technology (I-MEET), Department of Materials Science and Engineering, University of Erlangen-Nuremberg, Department of Photonis Engineering, Technical University of Denmark

15:15 **Investigation of 3C-SiC/SiO2 interfacial point defects from ab initio g-tensor calculations and EPR measurements** **O 3.5**
T. A. Nugraha, M. Rohrmueller, U. Gerstmann, S. Greulich-Weber, A. Stellhorn, J. L. Cantin, J. Von Bardeleben, W. G. Schmidt, S. Wippermann
Max-Planck-Institut fuer Eisenforschung, University of Paderborn, University of Paderborn, Solar Weaver GmbH, University of Paderborn, Pierre and Marie Curie University, University of Paderborn, Max-Planck-Institut fuer Eisenforschung

Optoelectronics : Kai Tang

08:30 **Sol-Gel Derived Silicon Carbide - A Versatile Material for Energy Applications** **O 4.1**
Olivia Kettner (a), Sanja Simic (b), Birgit Kunert (a), Robert Schennach (a), Roland Resel (a), Thomas Griesser (c), Bettina Friedel* (a,d)
(a) Institute of Solid State Physics, Graz University of Technology, 8010 Graz, Austria, (b) Institute for Electron Microscopy, Graz University of Technology, 8010 Graz, Austria, (c) Chemistry of Polymeric Materials, Montanuniversität Leoben, 8700 Leoben, Austria, (d) Energy Research Center, Vorarlberg University of Applied Sciences, 6850 Dornbirn, Austria

09:00 **Dielectric and light-emission properties of Cr4+ doped CaIn2O4-C hybrid nanostructure** **O 4.2**
Barkha Tiwari and Shanker Ram
Materials Science Centre, Indian Institute of Technology, Kharagpur, India Contact details: +91-9434611138, kit152barkha@gmail.com

09:15 **Chemical bath-deposited ZnO films doped with group-13 metals** **O 4.3**
Stefan Edinger, Neha Bansal, Martin Bauch, Rachmat Adhi Wibowo, Raad Hamid, Gregor Trimmel, Theodoros Dimopoulos
AIT Austrian Institute of Technology, Center for Energy, Photovoltaic Systems, Vienna, Austria, AIT Austrian Institute of Technology, Center for Low-Emission Transport, Vienna, Austria, Graz University of Technology, Institute for Chemistry and Technology of Materials, Graz, Austria

09:30 **Engineering Valence Band Dispersion for High Mobility p-type Semiconductors** **O 4.4**
Benjamin A.D. Williamson(1), John Buckeridge(1), Robert G. Palgrave(3), David O. Scanlon(1,2)
(1) University College London Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK , (2) Diamond Light Source Ltd. Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK , (3) University College London, Christopher Ingold Building, Department of Chemistry, London WC1H 0AJ, UK

09:45 **Coffee break**

Optoelectronics : Satoshi Kamiyama

10:15 **High Mobility Amorphous In2O3-CdO Alloy Thin Films Synthesized by Room Temperature Sputtering** **O 5.1**
Chao Ping Liu, Cheuk Kai Kwok, Chun Yuen Ho, J. A. Zapien, Kin Man Yu
Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Ave., Kowloon, Hong Kong

10:30 **Bandgap reduction and the effects of post-deposition annealing on (ZnO)1-X(GaN)X thin films** **O 5.2**
V. S. Olsen, B. G. Svensson, A. Kuznetsov, L. Vines
University of Oslo, Physics Department/Center for Materials and Nanotechnology, P.O. Box 1048 Blindern, N-0316 Oslo, Norway

10:45 **Characterization and Modelling of the Optical Properties of Photochromic Oxygen-containing Yttrium Hydride thin films** **O 5.3**
J. Montero, F. A. Martinsen, S. Zh. Karazhanov, E. S. Marstein
Institute for Energy Technology, P.O. Box 40, NO-2027 Kjeller, Norway

11:00 **Sublimation growth of a new promising semiconductor Al4SiC4** **O 5.4**
Hoang-Long Le Tran, Eirini Sarigiannidou , Odette Chaix-Pluchery, Isabelle Gélard, Thierry Ouisse and Didier Chaussende
Univ. Grenoble Alpes, CNRS, LMGP, F38000 Grenoble, France

11:15 **Rapid, Microwave-assisted Synthesis of Nanocrystalline ZnAl2O4: Structural and Optical Properties** **O 5.5**
Samvit G. Menon, Suresh D. Kulkarni, K. S. Choudhari, S. A. Shivashankar, and Santhosh C.
Samvit G. Menon, Suresh D. Kulkarni, K. S. Choudhari, and Santhosh C - Department of Atomic and Molecular Physics, Manipal University, Manipal, Karnataka, India-576104 S. A. Shivashankar - Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru, Karnataka, India -560012

11:30 **Lunch**

LED : Haiyan Ou

14:00 **The essential role of oxygen in activation the blue emitting light from Cerium doped Aluminum nitride thin films** **O 6.1**
Alaa eldin GIBA1,2, Philippe PIGEAT1, Stéphanie BRUYERE1, Hervé RINNERT1, Flavio SOLDERA2, Frank MÜCKLICH2, Raul GAGO-FERNANDEZ3, David HORWAT1
1Institut Jean Lamour – UMR CNRS 7198– Université de Lorraine, Nancy, France, 2Department Materials Science and Engineering, Saarland University, D-66123 Saarbrücken, Germany, 3Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas, E-28049 Madrid, Spain.

14:15 **Enhancement of Eu emission in GaN using a metamaterial approach** **O 6.2**
A. Lesage, A. Capretti, T. Inaba, T. Kojima, B. Mitchell, A. Koizumi, T. Gregorkiewicz and Y. Fujiwara
Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Osaka, Japan

14:30 **Photodetection of modulated light of white RGB LEDs with a-SiC:H device** **O 6.3**
P. Louro, M. A. Vieira, M. Vieira
Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1949-014 Lisboa, Portugal Tel: 351 21 8317290, Fax: 351 21 8317114, plouro@deetc.isel.ipl.pt , CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal

14:45 **LEDs based upon AlGaAs heterostructures: effect of ionizing radiation and factors of long-term operation** **O 6.4**
A.V.Gradoboev [1,2], A.V. Simonova [1]
[1] National Research Tomsk Polytechnic University, Tomsk, Russia, [2] Joint-Stock Company “Research Institute of Semiconductor Devices”, Tomsk, Russia

15:00 **Stoichiometric control of CH3NH3PbBr3 perovskite films toward highly efficient LEDs** **O 6.5**
Mingue Shin, Joonyun Kim, Byungha Shin*
Department of Materials Science and Engineering, KAIST

15:15 **Coffee break**

Poster session : The organizers

16:00 **High-power white-light-emitting materials by blue lase diode** **O 7.1**
1Soonho Park, 1Jongho Ryu, 2Taewook Kang, 3Sunghoon Lee, 4Heelack Choi, 1Jongsu Kim
1Department of display engnieering, Pukyoung National University, Busan, 608-737, South Korea 2Interdisciplinary Program of LED and Solid State Lighting Engineering, Pukyong National University, Busan, 608-739, South Korea 3P-Project Team, Hyosung Corporation, Gyeonggi-do, 431-080, South Korea 43Department of Materials Science Engineering, Pukyong National University, Busan, 608-739, South Korea

16:00 **Roof-top solar energy harvesting minus unwanted heat** **O 7.2**
Mr. SUMIT KUMAR
Dr. B R Ambedkar National Institute of Technology Jalandhar, India

16:00 **Interband transitions and optical constants of GaS(x)Se(1-x) layered mixed crystals by ellipsometry** **O 7.3**
Mehmet Isik, Nizami Hasanli
Department of Electrical and Electronics Engineering, Atilim University, Ankara, Turkey (Mehmet Isik), Physics Department, Middle East Technical University, Ankara, Turkey (Nizami Hasanli)

16:00 **Band gap energy and refractive index tuning in GaS(x)Se(1-x) semiconducting crystals** **O 7.4**
Nizami Hasanli, Mehmet Isik, Ahmet Ogan
Physics Department, Middle East Technical University, Ankara, Turkey (Nizami Hasanli, Ahmet Ogan), Department of Electrical and Electronics Engineering, Atilim University, Ankara, Turkey (Mehmet Isik)

16:00 **Influence of ionizing irradiation on reliability of LEDs based upon AlGaAs heterostructures** **O 7.5**
A.V.Gradoboev [1,2], A.V. Simonova [1], K.N. Orlova [1]
[1] National Research Tomsk Polytechnic University, Tomsk, Russia, [2] Joint-Stock Company ?Research Institute of Semiconductor Devices?, Tomsk, Russia

16:00 **High responsive flexible, broad band piezo-photodetector** **O 7.6**
Arijit Sarkar, Ajit K. Katiyar, S. Mukherjee and Samit K. Ray
Advanced Technology Development Center, Indian Institute of Technology, Kharagpur-721302, India, Department of Physics, Indian Institute of Technology, Kharagpur-721302, India, Advanced Technology Development Center, Indian Institute of Technology, Kharagpur-721302, India, Department of Physics, Indian Institute of Technology, Kharagpur-721302, India

16:00 **Improvement of electrical device properties of homojunction interface in tungsten doped IZO thin film transistor** **O 7.7**
Hyun-Woo Park1, Kwun-Bum Chung1*, Dukhyun Choi2, Jang-Yeon Kwon3
1Division of Physics and Semiconductor Science, Dongguk University, Seoul, 100-715, Korea , 2Department of Mechanical Engineering, School of Engineering, Kyung Hee University, Yongin, 446-701, Republic of Korea , 3Yonsei Institute of Convergence Technology, Yonsei University, Incheon, 406-840, Korea

16:00 **Acoustic Electroluminescent Device on Piezoelectric Layer** **O 7.8**
M. M. Afandi, T.W. Kang, W.T. Jang, S.H. Park, J.S. Kim
Department of Display Engineering, Pukyong National University, 608-737, Republic of Korea, Interdisciplinary of LED and Solid State Engineering, Pukyong National University, 608-737, Republic of Korea, Department of Display Engineering, Pukyong National University, 608-737, Republic of Korea, Department of Display Engineering, Pukyong National University, 608-737, Republic of Korea, Department of Display Engineering, Pukyong National University, 608-737, Republic of Korea

16:00 **Ti0.5Al0.5O-Dielectric AlGaN/GaN MOS-HEMTs by Using Non-Vacuum Ultrasonic Spray Pyrolysis Deposition** **O 7.9**
C. S Lee*,1, W. C. Hsu2, H. Y. Liu1, B. J. Chiang1, Y. C. Chen1, S. T. Yang1, C. G. Lin1, X. C. Yao1, J. Y. Lin1, Y. T. Shen1, and Y. C. Lin1
1: Department of Electronic Engineering, Feng Chia University, 100, Wenhwa Road, Taichung, Taiwan 40724, R.O.C. 2: Institute of Microelectronics, Department of Electrical Engineering, National Cheng-Kung University, 1, University Road, Tainan, Taiwan 70101, R.O.C.

16:00 **Reduction in optical reflection at intermediate adhesive layer for mechanically stacked multi junction solar cells** **O 7.10**
T. Sameshima, Y. Ogawa, M. Hasumi
Tokyo University of Agriculture and Technology

16:00 **Smart Vehicle Lighting System using a-SiCH Technology** **O 7.11**
M. A. Vieira, M. Vieira, P. Louro, P. Vieira
Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1949-014 Lisboa, Portugal Tel: 351218317290, Fax: 351218317114, mv@isel.ipl.pt , CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal Instituto de Telecomunicações, Instituto Superior Técnico, 1049-001, Lisboa, Portugal

16:00 **UV-Assisted Atmospheric Pressure Spatial Atomic Layer Deposition of ZnO** **O 7.12**
Ravi Raninga, Robert L. Z. Hoye, Judith Driscoll
University of Cambridge, University of Cambridge, University of Cambridge

16:00 **Atomic structure of inclined dislocation observed in GaN grown Si(111)** **O 7.13**
Yewon Jo1, Wontaek Ryu2, Hionsuck Baik1, Mino Yang1*
1 Seoul Center, Korean Basic Science Institute, Seoul 02841, Korea, 2 Center for Inter-University Research Facility, Kookmin university, Seoul 02707, Korea

16:00 **Parameters changes of LEDs based on GaP under irradiation by gamma-quanta** **O 7.14**
A.V.Gradoboev (1,2), K.N. Orlova (1), A.V. Simonova (1)
(1) National Research Tomsk Polytechnic University, Tomsk, Russia, (2) Joint-Stock Company “Research Institute of Semiconductor Devices”, Tomsk, Russia

16:00 **Characterizations of MOVPE- grown GaN layers on GaAs (110) substrate** **O 7.15**
I. Daldoul(a), N. Chaaben(a), I. Guizani(a), Y. El Gmili(b), A. Bchetnia(a), J. P. Salvestrini(b,c) and A. Rebey(a).
(a)Unité de Recherche sur les Hétéro-Epitaxies et Applications, Faculté des Sciences de Monastir 5019, Université de Monastir, Tunisia. (b)CNRS, UMI 2958 Georgia Tech - CNRS, 57070 Metz, France. (c)Université de Lorraine, Centrale Supelec, LMOPS, EA4423, 57070 Metz, France Corresponding authors. Tel: +216 73 500 274, fax: +216 73 500 578. E-mail: imendaldoul9@gmail.com

16:00 **Synthesis of g-C3N4/Silica Gels for White-Light-Emitting Devices** **O 7.16**
Aiwu Wang, Chris Lee, Haidong Bian, Zhe Li, Yawen Zhan, Jun He, Yu Wang, Jian Lu,* and Yang Yang Li
Department of Physics and Materials Science City University of Hong Kong

16:00 **Atmospheric pressure spatial atomic layer deposition of nickel oxide hole-extraction layers for solar cells** **O 7.17**
Lana Lee, Baodan Zhao, Le Yang, William Lansbury, Dr Robert Hoye, Dr Dawei Di, Prof Judith Driscoll
University of Cambridge

16:00 **Effect of Er3+ concentration on optical properties and conversion characteristics of Gd2O3:Er compacted nanopowders** **O 7.18**
A. F. Zatsepin, Yu. A. Kuznetsova, V. A. Pustovarov, M. A. Mashkovtsev, V. N. Rychkov
Ural Federal University, Mira st., 19, Ekaterinburg, 620002, Russia

16:00 **Fabrication and Characterization of new hybrid materials for efficient and sustainable organic solar cells** **O 7.19**
Donia Fredja (1), Chaouki Ben Hassen (1), Slim Elleuch (2), Habib Feki (2), Nassira Chniba (3) Boudjada, Tahar Mhiri (1), Mohamed Boujelbene (1)
(1) Laboratoire Physico-Chimie de l'Etat Solide, LR11 ES51, Faculté des Sciences de Sfax, Université de Sfax, BP 3071 Sfax, Tunisie, (2) Laboratoire de Physique Appliquée (LPA), Université de Sfax, Faculté des Sciences, BP 1171, 3000 Sfax, Tunisie (3) Laboratoire de Cristallographie, CNRS, 25 avenue des Martyrs, BP 166, 380, France

16:00 **Beyond Conventional Doping in SnO2** **O 7.20**
Benjamin A.D. Williamson(1), David O. Scanlon(1,2)
(1) University College London Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK , (2) Diamond Light Source Ltd. Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK

16:00 **Investigation of deep electronic levels in n-type and p-type 3C-SiC using photoluminescence** **O 7.21**
Florian BARTEN, Martin WILHELM, Peter J. WELLMANN
Crystal Growth Lab, Materials Department 6 (i-meet), University of Erlangen (FAU), Martnesstr. 7, 91058, Erlangen, Germany

16:00 **Optimization of the SiC powder source size distribution for the sublimation growth of long crystal boules** **O 7.22**
Matthias ARZIG (1), TaChing HSIAO (2), Peter J. WELLMANN (1)
(1) Crystal Growth Lab, Materials Department 6 (i-meet), University of Erlangen (FAU), Martnesstr. 7, 91058, Erlangen, Germany. (2) Industrial Technology Research Institute of Taiwan (ITRI), 195, Sec 4, Chung Hsing Rd., Chutung, Hsinchu 31040, Taiwan

16:00 **The properties of Ti-doped ZnO thin films deposited by DC reactive magnetron co-sputtering .** **O 7.23**
Bouaraba Fazia, Lamri Salim , Belkaid Mohamme Said.
Laboratoire Des Technologies Avancées Du Génie Electrique, Université Mouloud Mammeri de Tizi-Ouzou, Algérie. ICD-LASMIS, Université de Technologie de Troyes, UMR 6281, CNRS, Antenne de Nogent Pole Technologique de Haute-Champagne, France.

16:00 **Intense red emission from lightly Mn doped magnesium titanates** **O 7.24**
L.V. Borkovska1, L.Yu. Khomenkova1, I.V. Markevich1, M. Osipyonok1, M. Baran1, O. Marchylo1, M. Boisserie2, X. Portier2, T. Kryshtab3
1) V. Lashkaryov Institute of Semiconductor Physics, 45 Pr. Nauky, Kyiv 03028, Ukraine, 2) CIMAP, Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 6 Blvd. Maréchal Juin, 14050 Caen, France, 3) Instituto Politécnico Nacional – ESFM, Av. IPN, Ed.9 U.P.A.L.M., 07738 Mexico D.F., Mexico.

16:00 **The Luminescence and Magnetic Behavior of Color Tuned LaF3:RE3 (RE= Ce, Gd, Eu) Nanoparticles** **O 7.25**
Navadeep Shrivastava, Latif U. Khan, Jose M. Vargas, Carlos Ospina, Dinesh K. Shukla, Jose A.Q. Coeraqora,Yasir Javed, Hermi F Brito, Maria C. F. C. Felinto, Surender K. Sharma
Department of Physics, Federal University of Maranhão, Av. dos Portugueses, 1966 - Bacanga, São Luis - MA, 65080-805, Brazil. Department of Fundamental Chemistry, Institute of Chemistry, University of Sao Paulo, Av. Prof. Lineu Prestes, 748, 05508-000, São Paulo-SP, Brazil. Department of Neutron Physics, Bariloche Atomic Center,-Institute of Balseiro, Av. Exequiel Bustillo 9799, Bariloche San Carlos, Río Negro, Argentina. Advanced Materials Research Institute, University of New Orleans, 2000 Lakeshore Drive, New Orleans, LA 70148 Brazilian Nanotechnology National Laboratory (LNNano–CNPEM), Rua Giuseppe Máximo Scolfaro 10000, 13083-100, Campinas-SP, Brazil. UGC-DAE Consortium for Scientific Research, Indore Centre University Campus, Khandwa Road, Indore 452017, India Applied Physics Center, Institute of Physics, University of Brasilia, DF 70910-900 Brazil Department of Physics, University of Agriculture, Faisalabad, Pakistan Nuclear and Energy Research Institute - IPEN, University of Sao Paulo, Av. Prof. Lineu Prestes, 2242 - SP, 05508-000 São Paulo-SP, Brazil.

16:00 **Maximizing cubic phase of GaN growth in nano-scale inverted-pyramidshaped holes of Si (100) substrate** **O 7.26**
Qingbin Ji1, Tao Wang1, Wei Zhang2, Xixiang Zhang3,*, Xinqiang Wang1, Yahong Xie2,*, Xiaodong Hu1,*
1 State Key Laboratory for Artificial Microstructure and Microscopic Physics, School of Physics, Peking University, Beijing 100871, China 2Department of Materials Science and Engineering, University of California, Los Angeles, California 90095, United States 3Division of Physical Science and Engineering and Core Laboratories, King Abdullah University of Science and Technology, Thuwal 23955-6900, Kingdom of Saudi Arabia

16:00 **Hydrogen gas sensing based on MgZnO thin film prepared by RF-sputtering** **O 7.27**
Tien-Chai Lin1, Wen-Chang Huang2*, Jyun-Yan Wu2
1 Department of Electrical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yung-Kang Dist., Tainan, 71003, Taiwan, ROC 2 Department of Electro-Optical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yung-Kang Dist., Tainan, 71003, Taiwan, ROC *Corresponding author: Wen-Chang Huang (wchuang@mail.ksu.edu.tw)

Nitrides : Bettina Friedel

08:30 **Study of photoluminescence mechanism of InGaN multi-quantum-welll based LEDs grown on novel high quality semi-bulk InGaN buffer** **O 8.1**
Saiful Alam1,2,3, Suresh Sundaram 2, Xin li 2, Miryam E. Jamroz 3, Youssef El. Gmili 2, Ivan C. Robin 3, Jean-Paul Salvestrini 2, Paul L. Voss 1,2, Abdallah Ougazzaden 1,2*
1. School of Electrical & Computer Engineering, Georgia Institute of Technology, 30332, Atlanta, GA, USA. 2. Georgia Tech Lorraine, UMI 2958, Georgia Tech-CNRS, 57070 Metz, France. 3. CEA-LETI, Minatec Campus, F-38054 Grenoble, France.

08:45 **Electrode of metalic carbon nanotube for p-GaN and its application for LED** **O 8.2**
Toshiya Yokogawa, Syota Miyake
Yamaguchi University, Department of Material Science and Engineering

09:00 **Molecular control over Cu/GaN Schottky barrier diode using Thiol Porphyrin** **O 8.3**
Manjari Garg, Tejas R. Naik, Subramaniyam Nagarajan, V. Ramgopal Rao, Rajendra Singh
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India, Department of Electrical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai-400 076, Maharashtra, India, Department of Micro and Nanosciences, Aalto University, P.O. Box 13500, FI-00076, Aalto, Finland

09:15 **The optical and electronic properties of defects in GaN** **O 8.4**
John Buckeridge, Zijaun Xie, Yu Sui, C. Richard A. Catlow, Aron Walsh, David O. Scanlon, Alexey A. Sokol
University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, United Kingdom, Department of Physics, Harbin Institute of Technology, 92 Xidazhi Street, Harbin 150001, P. R. China

09:30 **Aluminium & Rare earth nitride alloys for piezoelectric energy harvesting, a theoretical perspective** **O 8.5**
Patrick Daoust, Patrick Desjardins, Remo Masut
Polytechnique Montréal, Génie Physique, Polytechnique Montréal, Génie Physique, Polytechnique Montréal, Génie Physique

09:45 **Coffee break**

Solar cells : Ole Martin Løvvik

10:15 **Synthesis, modification and application in solar cells of one-dimensional ZnS nanocrystals** **O 9.1**
Adam Zaba, Svitlana Sovinska, Elzbieta Nowak, Jerzy Sanetra, Katarzyna Matras-Postolek
Cracow University of Technology, Warszawska St. 24, Cracow, 31-155 Poland

10:30 **Numerical Analysis of CuGaS2/Cd1-x ZnxS Thin Film Solar Cell** **O 9.2**
Faisal Baig,Yousaf H. Khattak ,Bernabé María,Hanif Ullah
School of Design EngineeringG, Departament of Applied Physics,Universitat Politècnica de València, Spain , Department of Electrical Engineering,Federal Urdu University of Science, Arts and Technology,Islamabad, Pakistan

10:45 **Influence of the oxygen flow ratio on the microstructure and optical proprieties of CuxO thin films** **O 9.3**
1- Lamia Radjehi 2- Salim Laamri 3- Abdelkader Djelloul
1- LASPI2A Laboratoire des Structures, Propriétés et Interactions Inter Atomiques, Khenchela University, Algeria and Université de Technologie de Troyes Antenne de Nogent-Pole Technologique de Haute champagne Rue Lavoisier, 52800 Nogent BP 41, France 2-Université de Technologie de Troyes Antenne de Nogent-Pole Technologique de Haute champagne Rue Lavoisier, 52800 Nogent BP 41, France
3- a LASPI2A Laboratoire des Structures, Propriétés et Interactions Inter Atomiques, Khenchela University, Algeria

11:00 **Fabrication and characterization of amorphous CuAlO2/InGaZnO4 heterojunction solar cells by pulse DC sputtering method** **O 9.4**
Sakuchika Sakai, and Kousaku Shimizu
Graduate School of Industrial Technology, Nihon University

11:15 **ZnO-GaN alloys for energy materials** **O 9.5**
Gustavo Baldissera, Clas Persson
Department of Materials Science and Engineering, Royal Institute of Technology, SE-100 44 Stockholm, Sweden, Department of Materials Science and Engineering, Royal Institute of Technology, SE-100 44 Stockholm, Sweden, Department of Physics, University of Oslo, P.O. Box 1048 Blindern, NO-0316 Oslo, Norway,

SYMPOSIUM P

Silicon & Silicon nanostructures: from recent fundamental research to novel applications

Symposium Organizers :

Daniel HILLER, University of Freiburg, Germany

Dirk KÖNIG, University of New South Wales, Sydney, Australia

Walter WEBER, TU Dresden, Germany

Zachary HOLMAN, Arizona State University, Tempe, USA

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Monday 22 May 2017

08:50 **Welcome & Opening Remarks**

Si-Nanocrystals: Optical Properties I : Chairs: R. Tilley, D. König

09:00 **Exploring and understanding the performance limits of light-emitting Si nanostructures in oxide matrices** — P 1.1
J. Valenta (a), M. Greben (a), S. Gutsch (b), J. Laube, D. Hiller (b), M. Zacharias (b), and S. Dyakov (c).
(a) Faculty of Mathematics & Physics, Charles University, Prague, Czechia. (b) Faculty of Engineering, IMTEK, Albert-Ludwigs-University Freiburg, Germany. (c) Center for Photonics and Quantum Materials, Skolkovo Institute of Science &Technology, Russia.

09:30 **Factors limiting the emission efficiency of silicon quantum dots in the visible range** — P 1.2
B. van Dam, C. Osorio, M.A. Hink, R. Muller, A.F. Koenderink, K. Dohnalova
B. van Dam, K. Dohnalova - Insitute of Physics, University of Amsterdam, Amsterdam, The Netherlands, C. Osorio, R. Muller, A.F. Koenderink - Center for Nanophotonics, AMOLF, Amsterdam, The Netherlands, M.A. Hink - Section of Molecular Cytology and van Leeuwenhoek Centre for Advanced Microscopy, Swammerdam Institute for Life Sciences, University of Amsterdam, Amsterdam, the Netherlands

09:45 **Super-blinking promoting non-radiative Auger recombination in silicon nanocrystals** — P 1.3
Federico Pevere, Fatemeh Sangghaleh, Benjamin Bruhn, Ilya Sychugov, Jan Linnros
Department of Materials and Nano Physics, KTH Royal Institute of Technology, Electrum 229, 16440 Kista, Sweden

10:00 **Coffee Break**

Si-Nanocrystals: Optical Properties II : Chairs: J. Valenta, D. Hiller

10:30 **Solution synthesis, optical properties and applications of metal doped silicon nanocrystals** — P 2.1
B. F. P. McVey1,2, M. Al Miamani1,2, D. Koenig3,4, J. J. Gooding1,2, R. D. Tilley1,2,5
1School of Chemistry, UNSW, Sydney, NSW, Australia 2Australian Centre for Nanomedicine, UNSW, Sydney, NSW, Australia 3Integrated Materials Design Centre (IMDC), School of Chemical Engineering, UNSW, Sydney, NSW, Australia 4School of Photovoltaic and Renewable Energy (SPREE), UNSW, Sydney, NSW, Australia 5Electron Microscope Unit of the Mark Wainwright Analytical Centre, UNSW, Sydney, NSW, Australia

11:00 **Luminescence of silicon nanocrystals: from indirect to direct bandgap** — P 2.2
Katerina Kusova
Institute of Physics of the ASCR, v.v.i.

11:30 **The Influence of Surface Groups on the Optical Properties of Silicon Nanocrystals: Photoluminescence through In-gap States** — P 2.3
Arzu Angı,a Regina Sinelnikov,b Al Meldrum,c Jonathan G. C. Veinot,b Isacc Balberg,d Doron Azulay,d Oded Millo*d and Bernhard Rieger*a
a. WACKER-Lehrstuhl für Makromolekulare Chemie, Technische Universität München, Lichtenbergstrasse 4, 85747 Garching, Germany. b.Department of Chemistry, University of Alberta, 11227 Saskatchewan Drive, Edmonton, Alberta, Canada T6G 2G2 c.Department of Physics, University of Alberta, Edmonton, Alberta T6G 2G2, Canada d.Racah Institute of Physics, The Hebrew University of Jerusalem, Jerusalem 91904, Israel.

11:45 **Lewis Acid Protection: A Synthetic Route Towards Switchable Silicon Nanocrystals** — P 2.4
Alyxandra N. Thiessen (1), Tapas K. Purkait (2), Jonathan G. C. Veinot (1)
(1) Department of Chemistry, University of Alberta, Edmonton, Alberta T6G 2G2, Canada (2) Department of Chemistry, Johns Hopkins University, 3400 N. Charles St, Baltimore, MD 21218, USA

12:00 **Surface Plasmon Enhanced Photoluminescence from Silicon Quantum Dots Monolayer** — P 2.5
Asuka Inoue, Hiroshi Sugimoto, Minoru Fujii
Department of Electrical and Electronic Engineering, Graduate School of Engineering, Kobe University

12:15 **Electroluminescence emission of Si NC / SiO2 multilayers under pulsed electrical excitation** — P 2.6
J. López-Vidrier,1 D. Hiller,1 S. Gutsch,1 J. Laube,1 O. Blázquez,2 S. Hernández,2 B. Garrido2 and M. Zacharias1
1Laboratory for Nanotechnology, MTEK, Faculty of Engineering, University of Freiburg, Georges Köhler Allee 103, 79110, Freiburg, Germany. 2MIND-IN2UB, Departament d'Electrònica, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain.

12:30 **Lunch**

Silicene : Chairs: K. Kusova, W. Weber

14:00 **Low Dimensional Exotic Forms of Silicon** — P 3.1
Guy Le Lay
Aix-Marseille University, PIIM, UMR 7345, Marseille, France, guy.lelay@univ-amu.fr

14:30 **First-principles predictions of substrate effects on silicene** — P 3.2
U. Schwingenschlogl
King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Thuwal 23955-6900, Saudi Arabia

15:00 **Predicting 2D silicon allotropes on layered chalcogenides** — P 3.3
Emilio Scalise, Michel Houssa
Max Planck Institut fuer Eisenforschung GmbH, Dusseldorf (Germany) Catholic university of Leuven, Leuven (Belgium)

15:15 **New insights on Silicene nanosheets on graphite surface** — P 3.4
P. Castrucci1, I. Berbezier2, A. Ronda2, M. Abbarchi2, F. Fabbri3, S. Piazzi4, M. Scarselli1, F. Jardali5, H. Vach5, R. Francini6 and M. De Crescenzi1
1 Dipartimento di Fisica, Università degli Studi di Roma "Tor Vergata", 00133 Roma, Italy 2 CNRS, Aix-Marseille Université, IM2NP, UMR 7334, Campus de St. Jérome, 13397 Marseille, France 3 IMEM CNR, Parco Area delle Scienze, 43124 Parma (Italy) 4 Hypatia Research Consortium, c/o Italian Space Agency, Via del Politecnico, 00133, Roma 5 CNRS-LPICM, Ecole Polytechnique, Université Paris-Saclay, 91128 Palaiseau, France 6 Dipartimento di Ingegneria Industriale, Università degli Studi di Roma "Tor Vergata", Via del Politecnico 1, 00133 Roma, Italy

15:30 **Coffee Break**

Si-Photovoltaics: Carrier Selective Contacts : Chairs: N. Usami, Z. Holman

16:00 **Carrier-selective contacts for high-efficiency silicon solar cells** — P 4.1
Stefan W. Glunz
Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany

16:30 **Catalytic-doping on Nanocrystalline Silicon Materials for the Use in Silicon Heterojunction Solar Cell** — P 4.2
Yong Liu, Weiyuan Duan, Malte Köhler, Manuel Pomaska, Do Yun Kim, Kaining Ding
IEK5-Photovoltaik, Forschungszentrum Jülich, Germany

16:45 **Phase-separated SiOx layers with vertically oriented silicon inclusions for passivating contacts in silicon solar cells** — P 4.3
Josua Stuckelberger (1), Philippe Wyss (1), Iris Mack (1), Gizem Nogay (1), Quentin Jeangros (1), Jörg Horzel (2), Christophe Allebé (2), Matthieu Despeisse (2), Franz-Josef Haug (1), Philipp Löper (1), Christophe Ballif (1,2)
(1) Ecole Polytechnique Fédérale de Lausanne (EPFL), Institute of Microengineering (IMT), Photovoltaics and Thin-Film Electronics Laboratory(PV-Lab), Neuchâtel, Switzerland (2) SwissCenter of Electronics and Microtechnology (CSEM), Neuchâtel, Switzerland

17:00 **Silicon Heterojunction Solar Cells with Silicon Nanoparticle Enabled Microcrystalline Silicon Thin Films** — P 4.4
Joe V. Carpenter III, Peter Firth, Jianwei Shi, Allison Boley, David Smith, and Zachary Holman
Joe V. Carpenter III, Materials Science and Engineering, Arizona State University, Tempe, AZ, 85287, US, Peter Firth, Electrical Engineering, Jianwei Shi, Electrical Engineering, Allison Boley, Physics, David Smith, Physics, and Zachary Holman, Electrical Engineering

17:15 **Break**

Si-Photovoltaics: Novel Materials : Chairs: S. Glunz, D. König

17:30 **BaSi2/Si heterostructure for photovoltaic applications** **P 5.1**
Noritaka Usami, Kazuma Takahashi, Jefferson Adrian Wibowo, Yoshihiko Nakagawa, Yasuyoshi Kurokawa
Graduate School of Engineering, Nagoya University

18:00 **Novel organic contacts for Si solar cells** **P 5.2**
Chao ZHAO, Rui-Qi PNG, Peter HO
National University of Singapore

18:15 **Fundamental study of laser interactions with periodic arrays of nanoscale Si fin structures.** **P 5.3**
Andrzej Gawlik, Janusz Bogdanowicz, Andreas Schulze, Jan Misiewicz, Wilfried Vandervorst
Imec, Kapeldreef 75, 3001 Leuven, Belgium KU Leuven, Department of Physics and Astronomy, Institute for Nuclear and Radiation Physics, Celestijnenlaan 200D, 3001 Leuven, Belgium Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland, Imec, Kapeldreef 75, 3001 Leuven, Belgium, Imec, Kapeldreef 75, 3001 Leuven, Belgium, Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland, Imec, Kapeldreef 75, 3001 Leuven, Belgium KU Leuven, Department of Physics and Astronomy, Institute for Nuclear and Radiation Physics, Celestijnenlaan 200D, 3001 Leuven, Belgium

Doping of Si-Nanostructures : Chairs: Y. Rosenwaks, Z. Holman

08:45 **Dopants and Defects in Si Nanocrystal Networks: a delicate Balance** **P 6.1**
Martin Stutzmann, and Many Others
Walter Schottky Institut Technische Universität München Am Coulombwall 4 85748 Garching, and many Other Places

09:15 **P Doping of Oxide Embedded Silicon Nanocrystals: The Role of P position** **P 6.2**
Sebastian Gutsch1, Jan Laube1, Julian Lopez-Vidrier1, Margit Zacharias1, Keita Nomoto23, Daniel Hiller1, and Dirk König3
1 Laboratory for Nanotechnology, IMTEK, University of Freiburg, Germany 2 The University of Sydney, Australia 3 University of New South Wales (UNSW), Sydney, Australia

09:30 **Electrical characterisation of silicon nanowire devices with dense-pitches doped by monolayer doping** **P 6.3**
Ray Duffy, Alessio Ricchio, Noel Kennedy, Dan O'Connell, Alan Hydes, Nikolay Petkov, Justin D. Holmes, Paul K. Hurley, Brenda Long
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland. Materials Chemistry and Analysis Group, Department of Chemistry, University College Cork, Cork, Ireland. AMBER@CRANN, Trinity College Dublin, Dublin 2, Ireland

09:45 **Role of the cap layer on the competition between evaporation and diffusion of the source atoms in the Molecular Doping** **P 6.4**
S. Caccamo, G. Fisicaro*, A. La Magna and R.A. Puglisi
Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi (CNR-IMM), Strada Ottava 5, Zona Industriale, 95121 Catania, Italy, * University of Basel Department of Physics, Klingelbergstrasse 82 CH-4056 Basel, Switzerland

10:00 **Coffee Break**

Group-IV Nanowires I : Chairs: E. Tutuc, W. Weber

10:30 **GROUP IV NANOWIRES AS MODEL SYSTEMS TO EXPLORE PHASE BEHAVIOUR, NUCLEATION AND INTERFACE DYNAMICS IN NANOSCALE SYSTEMS** **P 7.1**
S. Hofmann
Department of Engineering, University of Cambridge, United Kingdom

11:00 **Electrostatically Formed Nanowires: a Platform for Sensors, Transistors and Electronic Devices** **P 7.2**
Yossi Rosenwaks, Alex Henning, Nandhini Swaminathan, Assaf Peled, Gideon Segev, Klimentiy Shimanovich
Faculty of Engineering, Tel-Aviv University, Tel-Aviv 69978

11:30 **Light emission from fractal array of silicon nanowires** **P 7.3**
M. J. Lo Faro1, A.A. Leonardi1-2-3, C. D'andrea1, P. Musumeci3, M A Iatì1, M. Galli4, G. Franzò2, F. Iacona2, P. Gucciardi1, C. Vasi1, F. Priolo2-3-5, B. Fazio1, A. Irrera1
1 CNR-IPCF, Istituto per i Processi Chimico-Fisici, V.le F. Stagno D'Alcontres 37, 98158 Messina, Italy, 2 MATIS CNR-IMM, Istituto per la Microelettronica e Microsistemi, Via Santa Sofia 64, 95123 Catania, Italy, 3 Dipartimento di Fisica ed Astronomia, Università di Catania, Via Santa Sofia 64, 95123 Catania, Italy, 4 Dipartimento di Fisica, Università degli Studi di Pavia, via Bassi 6, 27100 Pavia, Italy 5 Scuola Superiore di Catania, Via Valdisavoia 9, 95123 Catania, Italy

11:45 **Correlative microscopy for detailed investigation of silicon nanowire nucleation and growth** **P 7.4**
M. Hývl, J. Červenka, J. Stuchlík, H. Stuchlíková, J. Kočka, A. Fejfar
Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10, 162 00 Prague 6, Czech Republic

12:00 **Bottom-up Regrowth of Silicon Nanowires for Advanced 3D Nanoscale Probes** **P 7.5**
A. Behroudj, A. Djaberi Dashtestani, M. Nilsen, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

12:15 **Local formation of InAs nanocrystals in Si by masked ion implantation and flash lamp annealing** **P 7.6**
L. Rebohle, R. Wutzler, S. Prucnal, R. Hübner, R. Böttger, Y.M. Georgiev, A. Erbe, M. Helm, W. Skorupa
Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden - Rossendorf, Bautzner Landstraße 400, 01328 Dresden, Germany

12:30 **Lunch**

Group-IV Nanowires II : Chairs: S. Hofmann, Z. Holman

14:00 **Growth and Electronic Properties of Coherently Strained Group IV Core-Shell Nanowire Heterostructures** **P 8.1**
Emanuel Tutuc, Feng Wen, David C. Dillen, Kyounghwan Kim
Microelectrics Research Center, Department of Electrical Engineering, The University of Texas at Austin

14:30 **Direct measurement of the Fermi Level Pinning in Silicon Nanowires** **P 8.2**
S. Strehle, S. Challinger, N. Hibst, I. Baikie
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, KP Technology, Burn Street, Wick Caithness, KW1 5EH, United Kingdom, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, KP Technology, Burn Street, Wick Caithness, KW1 5EH, United Kingdom

14:45 **Resolving the 3D Boron distribution in vertical Si nanowires using atom probe tomography** **P 8.3**
D. Melkonyan*, **, C. Fleischmann **, L. Arnoldi*, **, A. Veloso**, J. Bogdanowicz**, R. J. H. Morris*, ** and W. Vandervorst *, **
* Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium ** Imec vzw, Kapeldreef 75, Heverlee – 3001, Belgium

15:00 **Controlled catalyst-induced doping of silicon nanowires using post-transition metals** **P 8.4**
Jiri Cervenka, Martin Silhavik, Martin Muller, Jiri Stuchlik, Ha Stuchlikova, Antonín Fejfar and Jan Kocka
Department of Thin Films and Nanostructures, Institute of Physics ASCR, v. v. i., Prague, Czech Republic

15:15 **Silicon nanowire radial tandem junction applications in light harvesting and light sensing** **P 8.5**
Junzhuan Wang, Fan Yang, Xiaolin Sun, Linwei Yu, Jun Xu, Yi Shi, and Kunji Chen
ational Laboratory of Solid State Microstructures/School of Electronics Science and Engineering/Collaborative Innovation Center of Advanced Microstructures, Nanjing University, 210093, Nanjing, P. R. China

15:30 **Crystal Phase Effects in Si Nanowires** **P 8.6**
Michele Amato, Thanayut Kaewmaraya, Alberto Zobelli, Maurizia Palummo, Riccardo Rurali
Centre de Nanosciences et de Nanotechnologies and Laboratoire de Physique des Solides, CNRS, Université Paris-Sud, Université Paris-Saclay, 91405 Orsay, France, Dipartimento di Fisica, Università di Roma Tor Vergata, Via della Ricerca Scientifica 1, 00133 Roma, Italy, INFN, Laboratori Nazionali di Frascati, Via E. Fermi 40, I-00044 Frascati, Italy, Institut de Ciència de Materials de Barcelona (ICMAB–CSIC), Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain

15:45 **Silicon Nanowires Dressed with REDOX Molecules for Memristive Devices** **P 8.7**
L.E. Calvet, D. Querlioz
Centre de Nanosciences et de Nanotechnologies, CNRS UMR 9001, Univ. Paris-Sud, Université Paris-Saclay, C2N – Orsay, 91405 Orsay, France

16:00 **Coffee Break**

Poster Session : Chairs: D. Hiller, D. König

16:30 **Morphological properties of nanopillar patterned Si obtained by nanosphere lithography and metal-assisted wet-chemical etching** **P 9.1**
Michael Kismann 1,2, Thomas Riedl 1,2, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany

16:30 **Customized Si nanostructures by metal assisted chemical etching** **P 9.2**
G. Sandu(1), S. Melinte(1), and A. Vlad(2)
(1)Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium, (2) Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium.

16:30 **Localized Bottom-up Synthesis of Pt-Silicide Catalysed Silicon Nanowires for Vertical Single-Nanowire Electrode Arrays** **P 9.3**
A. Djaberi Dashtestani, N. Hibst, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

16:30 **Understanding the Metal Catalyst in Metal-Assisted Chemical Etching** **P 9.4**
M. O. Williams, D. Hiller, A. Jervell, T. Bergfeldt, M. Zacharias
M. O. Williams, D. Hiller, A. Jervell, M. Zacharias from: Laboratory for Nanotechnology, IMTEK, Faculty of Engineering, University of Freiburg, Georges Köhler Allee 103, 79110, Freiburg, Germany. T. Bergfeldt from: Karlsruhe Institute of Technology, Institute of Applied Materials, Hermann von Helmholtz Platz 1, 76344 Eggenstein Leopoldshafen, Germany.

16:30 **Periodic nanostructures formed on mesoporous silicon surface using ultra-short lasers** **P 9.5**
A. Talbi, A. Stolz, C. Boulmer-Leborgne, N. Semmar
GREMI-UMR 7344-CNRS-University of Orleans, 14 rue d'Issoudun, BP6744, 45071 Orleans Cedex2, France

16:30 **In-plane Self-turning and Twin Dynamics Renders Large Stretchability to Mono-Like Zigzag Silicon Nanowire Springs** **P 9.6**
Zhaoguo Xue,1,2 Taige Dong,1 Zhimin Zhu,1 Yaolong Zhao,1 Wanghua Chen,2 Linwei Yu,*1,2 Junzhuan Wang,1 Jun Xu,1 Kunji Chen,1 and Pere Roca i Cabarrocas2
1 National Laboratory of Solid State Microstructures/School of Electronics Science and Engineering/Collaborative Innovation Center of Advanced Microstructures, Nanjing University, 210093, Nanjing, P. R. China, E-mail : yulinwei@nju.edu.cn , 2 LPICM, CNRS, Ecole Polytechnique, Université Paris-Saclay, 91128 Palaiseau, France E-mail : linwei.yu@polytechnique.edu

16:30 **Optical Properties of Silicon Nanowires** **P 9.7**
K.A. Gonchar1,2, A.A. Zubairova1, V.A. Georgobiani1, L.A. Osminkina1,3, L.A. Golovan1, V.Ya. Gayvoronsky4, V. Sivakov5, V.Yu. Timoshenko1,3
1Department of Physics, M.V.Lomonosov Moscow State University, Leninskie Gory 119991 Moscow, Russia, 2Theoretical Physics and Applied Mathematics Department, Ural Federal University, 19 Mira street 620002 Ekaterinburg, Russia, 3Bio-nanophotonics Laboratory, National Research Nuclear University "MEPhI" (Moscow Engineering Physics Institute), 31 Kashirskoe sh., 115409 Moscow, Russia, 4Institute of Physics of the National Academy of Sciences of Ukraine, 03680, Kiev, Ukraine, 5Leibniz Institute of Photonic Technology, Albert-Einstein-Straße 9 D-07745 Jena, Germany

16:30 **Nonmonotonic Diameter Dependence of Thermal Conductivity of Extremely Thin Si Nanowires: Competition between Hydrodynamic Phonon** **P 9.8**
Yanguang Zhou, Ming Hu
Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

16:30 **Fabrication of ultra-thin silicon nanowire arrays using bimetal assisted chemical etching** **P 9.9**
Zhiyuan Tan, Zhengguang Hu, Chungang Guo, Xiaoling Wu,Guo-an Cheng, Ruiting Zheng
College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, China

16:30 **Engineering in-plane silicon nanowires for periodic island-chain structure and ultra-high stretchability >300%** **P 9.10**
Zhaoguo Xue,1 Taige Dong,1 Zhimin Zhu,1 Yaolong Zhao,1 Linwei Yu,*1,2 Junzhuan Wang,1 Jun Xu,1 Kunji Chen,1 and Pere Roca i Cabarrocas2
1 National Laboratory of Solid State Microstructures/School of Electronics Science and Engineering/Collaborative Innovation Center of Advanced Microstructures, Nanjing University, 210093, Nanjing, P. R. China, E-mail : yulinwei@nju.edu.cn 2 LPICM, CNRS, Ecole Polytechnique, Université Paris-Saclay, 91128 Palaiseau, France E-mail : linwei.yu@polytechnique.edu

16:30 **POROUS SILICON NANOWIRES (PSiNWr) FILM ELABORATED AND MODIFIED BY ORGANIC SPECIES** **P 9.11**
Chafiaa YADDADEN
CRTSE Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique Division Couches Minces Surfaces et Interfaces

16:30 **A study on electrical properties of tellurium and bismuth nanowire for low operation voltage device** **P 9.12**
Chien-Chao Huang, 1Wan-Ling Chu, 1Bai-Ting Cheng, 2Yu-Zen Tasi, and 1Chien-Neng Liao
National Nano Device Laboratories, Hsinchu 300, Taiwan 1Dept of Materials Eng. and Science, University of Tsing-Hua, Hsinchu, Taiwan 2Dept. of Electronic, University of Cheng-Shiu, Kaohsiung, Taiwan

16:30 **Toxic gases sensing based on silicon nanostructures: an ab-initio study** **P 9.13**
F. de Santiago, J. E. Santana, A. Trejo, A. Miranda, L. A. Pérez, M. Cruz-Irisson
Instituto Politécnico Nacional, ESIME-Culhuacán, Av. Santa Ana 1000, 04430, Ciudad de México, México, Instituto Politécnico Nacional, ESIME-Culhuacán, Av. Santa Ana 1000, 04430, Ciudad de México, México, Instituto Politécnico Nacional, ESIME-Culhuacán, Av. Santa Ana 1000, 04430, Ciudad de México, México, Instituto Politécnico Nacional, ESIME-Culhuacán, Av. Santa Ana 1000, 04430, Ciudad de México, México, Instituto de Física, Universidad Nacional Autónoma de México, Apartado Postal 20-364, 01000, Ciudad de México, México, Instituto Politécnico Nacional, ESIME-Culhuacán, Av. Santa Ana 1000, 04430, Ciudad de México, México

16:30 **Effect of hydrogenation of amorphous silicon surfaces on protein adsorption** **P 9.14**
L. Filali, Y. Brahmi, J.D. Sib, D. Benlekhal, Y. Bouizem, A. Kebab, L. Chahed
Department of physics, University of Oran1 Ahmed Ben Bella

16:30 **The impact of standard wet-chemistry MLD processing on the structural integrity of nanostructured silicon** **P 9.15**
Brenda Long, Noel Kennedy, Dan O'Connell, Alan Hydes, Nikolay Petkov, Paul K. Hurley, Justin D. Holmes, Ray Duffy
Department of Chemistry, University College Cork, Cork, Ireland. Tyndall National Institute, Lee Maltings, Cork, Ireland. CRANN & AMBER, Trinity College Dublin, Dublin 2, Ireland.

16:30 **Direct imaging of dopant distribution at nanoscale: Powerful correlative SIMS imaging techniques for semiconductor innovations** **P 9.16**
S. Eswara, L. Yedra, J. -N. Audinot, T. Wirtz
Advanced Instrumentation for Ion Nano-Analytics (AINA), MRT Dept, Luxembourg Institute of Science and Technology, 41, rue du Brill, L-4422 Belvaux, Luxembourg

16:30 **Preparation of CuIn0.7Ga0.3Se2 Thin films For the Fabrication of a Si-Nanowires Based Third Generation Solar Cell** **P 9.17**
Hakan Karaagac1*, Elif Peksu1 , Hamed Behzad1, Sare Akgoz1, Mehmet Parlak2
1 Department of Physics Eng., Istanbul Technical University, 34469, Maslak, Istanbul, Turkey. 2 Department of Physics, Middle East Technical University, 06800, Cankaya, Ankara, Turkey

16:30 **Carrier selective contacts based on V2O5-Ag-V2O5 structures** **P 9.18**
Joaquim Puigdollers, Luis Guillermo Gerling, Gerard Masmitja, Eloi Ros, Raul, Perea,Isidro Martin, Pablo Ortega, Cristobal Voz, Ramon Alcubilla
Dept Enginyeria Electrònica. Universitat Politècnica Catalunya. Barcelona (Spain)

16:30 **OPTICAL MODELING OF ULTRATHIN SILICON SOLAR CELLS WITH PC1D** **P 9.19**
LUIGI ABENANTE
ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development

16:30 **Enhanced Passivation Quality of Intrinsic Amorphous Silicon by Hydrogen Plasma for Silicon Heterojunction Solar Cell Application** **P 9.20**
Ergi Dönerçark, Raşit Turan
Micro and Nanotechnology - Middle East Technical University, Center for Solar Energy Research and Applications (GÜNAM) - Middle East Technical University

16:30 **Electronic transport properties of a-Si:H passivation layers for silicon hetero-junction solar cells** **P 9.21**
Shota Nunomura, Isao Sakata, Koji Matsubara
Research center for photovoltaics, National institute of advanced industrial science and technology(AIST), Tsukuba, Ibaraki 305-8568, Japan

16:30 **Porous microspheres granulated from Si-SiOx core-shell nanoparticles for Li-ion battery's anode** **P 9.22**
Boyun Jang
Separation and Conversion Materials Laboratory, Korea Institute of Energy Research, 152 Gajeong-ro, Yuseong-gu, Daejeon, 305-343, Republic of Korea

16:30 **Effect of the thermal budget on the thickness of ultra-thin silicon layers detached by Kerf-Free approach: Stress-induced cleav** **P 9.23**
N. Zayyoun1,2, T. Pingault1, P. S. Pokam-Kuisseu1, E. Ntsoenzok1,3, J-P. Blondeau1,3
1 CEMTHI - CNRS, Site Cyclotron, 3A rue de la Férollerie, 45071 Orléans, France 2 LCS, Faculty of Sciences, Mohammed V University, Rabat, Morocco 3 Université d'Orléans, Château de la Source, 45100 Orléans, France

16:30 **New Application of Graphene for Advanced Lithography** **P 9.24**
Sang Won Kim, Minsu Seol, Yeonchoo Cho, Dongwook Lee, Keonwook Shin, Seongjun Park, Hyeon-Jin Shin
Samsung Advanced Institute of Technology (SAIT), Samsung Electronics, 130 Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-803, Republic of Korea

16:30 **Ab initio simulations of pseudomorphic Silicene and Germanene 2D lateral heterostructures** **P 9.25**
Alberto Debernardi, Luigi Marchetti
CNR-IMM, sede Agrate Brianza, via Olivetti 2, I-20864, Agrate Brianza, Italy, CNR-IMM, sede Agrate Brianza, via Olivetti 2, I-20864, Agrate Brianza, Italy, Universitá degli studi di Milano, via Celoria 16, I-20133, Milano, Italy

16:30 **The performance enhancement of Si MOSFETs by selective heating technology** **P 9.26**
1Bai-Ting Cheng, 2Yu-Zen Tasi, and Chien-Chao Huang
National Nano Device Laboratories, Hsinchu 300, Taiwan 1Dept of Materials Eng. and Science, University of Tsing-Hua, Hsinchu, Taiwan 2Dept. of Electronic, University of Cheng-Shiu, Kaohsiung, Taiwan

16:30 **An Innovative Ion Sensitive Device Based on Side-Contacted Field Effect Diode (S-FED)** **P 9.27**
E. Mohammadi, N. Manavizadeh
Faculty of Electrical Engineering, K. N. Toosi University of Technology, Tehran, Iran

16:30 **Voltage and size scalability of Side-contacted Field Effect Diode** **P 9.28**
B. Jafari Tochaei, N. Manavizadeh, E. Mohammadi
Faculty of Electrical Engineering, K. N. Toosi University of Technology, Tehran, Iran

16:30 **Optically Active Devices in Silicon for Hardware Attack Protection** **P 9.29**
Elham Amini, Bernd Szyszka, Christian Boit
Technische Universität Berlin, Germany

16:30 **P-doping of Silicon Nanocrystals in Oxynitride vs. Oxide Matrix** **P 9.30**
Julian López-Vidrier1, Sebastian Gutsch1, Margit Zacharias1, Keita Nomoto2,3, and Daniel Hiller1
1 Laboratory for Nanotechnology, IMTEK, University of Freiburg, Germany 2 The University of Sydney, Australia 3 University of New South Wales, Sydney, Australia

16:30 **Phosphorus in the Si Nanocrystal – SiO2 System: Location and Electronic Structure** **P 9.31**
Dirk König(a,b), Sebastian Gutsch(b), Hubert Gnaser(c), Michael Wahl(c), Michael Kopnarski(d), Jörg Göttlicher(e), Ralph Steininger(e), Margit Zacharias(b), Daniel Hiller(b)
(a) Integrated Material Design Centre (IMDC), University of New South Wales, Sydney, Australia. (b) Laboratory of Nanotechnology, Dept. of Microsystems Engineering (IMTEK), University of Freiburg, Germany. (c) Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Germany. (d) Institute for Surface and Thin Film Analysis (IFOS) Ltd., Kaiserslautern, Germany. (e) ANKA Synchrotron Radiation Facility, Karlsruhe Institute of Technology, Germany

16:30 **Plane-View TEM Study of Silicon Nanocrystals in Silicon Oxide, Oxynitride and Nitride** **P 9.32**
Jan Laube1, Sebastian Gutsch1, Julian López-Vidrier1, Christian Kübel2, Margit Zacharias1
1: Laboratory for Nanotechnology, Department of Microsystems Engineering (IMTEK), University of Freiburg, Georges-Koehler-Allee 103, 79110 Freiburg im Breisgau, Germany 2: Karlsruhe Nano and Micro Facility (KNMF) and Institute of Nanotechnology (INT), Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

16:30 **Formation of continuous Si nano-particles based mono-layers on various substrates by e-beam evaporation** **P 9.33**
Ø. Dahl*, A. Ulyashin**
*SINTEF Material and Chemistry, Trondheim, Norway **SINTEF, Material and Chemistry, Oslo, Norway

16:30 **Raman and SEM analysis of thin Si layers fabricated by thermal spraying of silicon powder on various substrates** **P 9.34**
A. S. Azar (1), M. Vardavoulias (2), T. Halvorsen (3) , M. Moen (3), K. Mork (3), P. A. Carvalho (1), A. Ulyashin (1)
(1) SINTEF, Oslo, Norway (2) PYROGENESIS, Athens, Greece (3) RESITEC, Kristiansand, Norway

16:30 **Carrier Multiplication in Nanocrystals: a new Theoretical Tool** **P 9.35**
Stefano Ossicini, Ivan Marri, Marco Govoni
University of Modena and Reggio Emilia, Department of Science and Methods for Engineering (DISMI), via Amendola 2 Reggio Emilia, 42122, Italy, Centro S3, CNR-Istituto Nanoscienze, via Campi 213/a Modena, 41125, Italy, Institute for Molecular Engineering, the University of Chicago, 5747 South Ellis Avenue Chicago, 60637, Illinois (USA)

16:30 **Hydrophilic luminescent silicon nanoparticles in steric colloidal solutions: their size, agglomeration and toxicity** **P 9.36**
K. Herynková, P. Šimáková, A. Fučíková, O. E. Cibulka, M. Hubalek Kalbáčová
Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10, 162 53 Prague 6, Czech Republic, Institute of Inherited Metabolic Disorders,1st Faculty of Medicine, Charles University, Prague, Czech Republic

16:30 **Photoluminescence in Ge/Si quantum dot heterostructures** **P 9.37**
A.V. Dvurechenskii1,2, A.F.Zinovieva1, V.A.Zinovyev1, A.V.Nenashev1, Zh. V. Smagina1, O. M. Borodavchenko3 V. D. Zhivulko3 and A. V. Mudryi3
1Rzhanov Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences, Lavrent'eva 13, 630090 Novosibirsk, Russia 2Novosibirsk State University, 630090 Novosibirsk, Russia 3Scientific-Practical Material Research Centre of the National Academy of Science, P. Brovki 19, 220072 Minsk, Belarus

16:30 **Role of surface charge distribution on band-structure and optical properties of silicon nanocrystals** **P 9.38**
Chia-Ching Huang(1), Hui Nie(2), Jonathan Wilbrink(2), Jos MJ Paulusse(2), Katerina Dohnalova(1)
(1) Institute of Physics, University of Amsterdam, Science Park 904, 1098XH, Amsterdam, the Netherlands, (2) MIRA Institute, University of Twente, P.O. Box 217, 7500 AE, Enschede, the Netherlands

16:30 **Evolution of dynamic parameters extracted from impedance spectroscopy due to oxidation of nanostructured porous silicon** **P 9.39**
Walter Morales(2), Carlos Vargas(1,2), Taina Ramírez(1,2), Daniela Chaves(2). Arturo Ramirez-Porras(1,2)
(1) Centro de investigación en Ciencia e Ingeniería de Materiales, Universidad de Costa Rica, San José, Costa Rica, 11501 (2) Escuela de Física, Universidad de Costa Rica, San José, Costa Rica, 11501

16:30 **The role of defects in inducing colour tuning of strong photoluminescence in low-k SiCxOy:H films** **P 9.40**
Rui Huang, Zhenxu Lin, Hongfei Li, Jie Song
School of Materials Science and Engineering, Hanshan Normal University

16:30 **Deposition and forming of nanoparticles on the hydrogenated silicon thin films** **P 9.41**
J. Stuchlík, R. Fajgar, J. Kupčík, T.H. Stuchlíková, M. Ledinsky, J. Čermák, V. Píč, Z. Remeš, V. Mortet, A. Shklyaev, V. Volodin
J. Stuchlík, T.H. Stuchlíková, M. Ledinsky, J. Čermák, V. Píč, Z. Remeš, V. Mortet, Institute of Physics ASCR, v. v. i. Cukrovarnická 10/112, 162 00 Praha 6, Czech Republic, EU R. Fajgar, J. Kupčík, Institute of Chemical Process Fundamentals of the ASCR, v. v. i.,Rozvojová 135, 165 02 Praha 6, Czech Republic, EU Kupčík, Institute of Inorganic Chemistry CAS, Řež u Prahy, Czech Republic, EU Z. Remeš, Faculty of Biomedical Engineering CTU in Prague, Kladno, Czech Republic, EU A. Shklyaev, V. Volodin, Novosibirsk State University, ul. Pirogova 2, Novosibirsk, 630090 Russia and A.V. Rzhanov Institute of Semiconductor Physics, Russian Academy of Sciences, Lavrent'eva ave., 13, 630090, Novosibirsk, Russia)

16:30 **Binary gold-silicon nanoparticles: fabrication, structural and optical properties, application** **P 9.42**
Yury V. Ryabchikov
1 Aix-Marseille University, 163, avenue de Luminy, Marseille, France 13288 2 P.N. Lebedev Physical Institute of Russian Academy of Sciences, 53 Leninskii Prospekt, Moscow 199 991, Russia

16:30 **Photonic crystal slabs with broadband and efficient directional light emission** **P 9.43**
L. Ondic (1), M. Varga (1), K. Hruska (1), J. Valenta (2), A. Kromka (1), I. Pelant (1)
(1) Institute of Physics, Academy of Sciences of the Czech Republic, v.v.i., Cukrovarnicka 10, 162 00, Prague 6, Czech Republic (2) Charles University, Faculty of Mathematics and Physics, Ke Karlovu 3, 121 16, Praha 2, Prague , Czech Republic

16:30 **Ferromagnetism in Silicon Single Crystals with Positively Charged Vacancy Clusters** **P 9.44**
Yu Liu, Xinghong Zhang, Quan Yuan, Jiecai Han, Shengqiang Zhou, Bo Song
Helmholtz-Zentrum Dresden-Rossendorf, Harbin Institute of Technology

16:30 **Design of polarization independent optical triplexer with cascaded multimode-interference couplers and waveguide crossings** **P 9.45**
Hideki Yokoi, Kazuki Tsuchida, Daiki Matsumoto
Graduate School of Engineering and Science, Shibaura Institute of Technology

16:30 **Integrated racetrack micro-resonator based on porous silicon ridge waveguides for sensing application** **P 9.46**
P. Girault, P. Azuelos, N. Lorrain, L. Poffo, J. Lemaitre, P. Pirasteh, A. Gutierrez, I. Hardy, M. Thual, L. Bodiou, M. Guendouz, J. Charrier
UMR FOTON, CNRS, Université de Rennes 1, ENSSAT, Lannion, France

16:30 **Investigation of mesoporous aSi:H with embedded aluminium nanoparticles** **P 9.47**
T. Kjeldstad(1), A. Thøgersen(2), E. Monakhov(1) and A. Galeckas(1)
(1) Department of Physics/Centre for Materials Science and Nanotechnology, University of Oslo, P.O. Box 1048 Blindern, N-0316 Oslo, Norway. (2) SINTEF Materials and Chemistry, P.O. Box 124 Blindern, 0314 Oslo, Norway

16:30 **Functional oxides on Silicon and Sapphire substrates for photonic applications** **P 9.48**
Guillaume Marcaud, Sylvia Matzen, Carlos Alonso-Ramos, Xavier Le Roux, Mathias Berciano,Valérie Pillard, Pedro Damas, Thomas Maroutian, Guillaume Agnus, Ludovic Largeau, Eric Cassan, Delphine Marris-Morini, Philippe Lecoeur, Laurent Vivien
C2N- Centre for Nanoscience and Nanotechnology, CNRS, University of Paris-Sud, University of Paris Saclay, Building 220, rue André Ampère 91405 Orsay cedex

16:30 **Photoelectric response of Si-Au nanocomposites on crystalline silicon: The effect of metal content in the nanocomposite** **P 9.49**
O.S. Ken, D.A. Yavsin, M.M. Sobolev, S.A. Gurevich, O.M. Sreseli
Ioffe Institute, St. Petersburg, Politekhnicheskaya, 26

16:30 **Quantitative characterisation of Sb ion implantation dose in Si wafer by sheet resistance and Rutherford backscattering** **P 9.50**
Nianhua Peng, Adrian Cansell, Christopher Jeynes and Roger P Webb
Surrey Ion Beam Centre, ATI, FEPS, University of Surrey, Guildford GU2 7XH, Surrey, UK

16:30 **Activation of Silicon by Ion Implantation under Heating Sample at 200oC** **P 9.51**
T. Sameshima1, K. Yasuta1, M. Hasumi1, T. Nagao2, Y. Inouchi2
Tokyo University of Agriculture and Technology1, NISSIN ION EQUIPMENT CO., LTD.2

16:30 **Obtaining and study of the electrical properties of nanoscale structures of MeSi2 in different depths Si** **P 9.52**
Y.S. Ergashov, B.E. Umirzakov
Tashkent state technical university

16:30 **Kinetic formation of nano-sized thin films of Si - M (M = Li, Na, Rb, Ba)** **P 9.53**
A.S. Rysbaev, Zh.B. Khuzhaniyazov, I.R. Bekpulatov, B.E. Khayriddinov
Tashkent state technical university

16:30 **Assessment of the degree of ionization and electronegativity chemical bond in silicide films obtained by ion implantation method** **P 9.54**
A.S. Rysbaev, Zh.B. Khuzhaniyazov, I.R. Bekpulatov
Tashkent state technical university

16:30 **Influence of a chemical activity of implanted ions on a structure of a damaged Si layer of SIMOX** **P 9.55**
Kirill SHCHERBACHEV, Victor MORDKOVICH, Vladimir ZINENKO, Yurii AGAFONOF, Elena SKRYLEVA, Dmitrii KISELEV
National University of Science and Technology «MISIS» (MISIS), Moscow, Russian Federation, Institute of Microelectronics Technology, Chernogolovka, Russian Federation, Institute of Microelectronics Technology, Chernogolovka, Russian Federation, Institute of Microelectronics Technology, Chernogolovka, Russian Federation, National University of Science and Technology «MISIS» (MISIS), Moscow, Russian Federation, National University of Science and Technology «MISIS» (MISIS), Moscow, Russian Federation,

16:30 **A crystallisation model highlighting the gold nanoparticle effect in the metal induced crystallisation of amorphous silicon** **P 9.56**
Rachid Ouertani, Khawla Ghribi, Wissem Dimassi
Photovoltaic Laboratory, Research and Technology Center of Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia.

Si-Nanocrystals: Synthesis & Surface Functionalization : Chairs: R. Anthony, D. Hiller

08:45 **Simultaneous Etching and Surface functionalization of Silicon Nanocrystals** **P 10.1**
Jonathan G.C. Veinot
Department of Chemistry, University of Alberta

09:15 **Formation of Laminated Films of Silicon Quantum Dot Monolayers from the Colloidal Solution** **P 10.2**
Minoru Fujii, Hiroshi Sugimoto, Kenta Furuta
Department of Electrical and Electronic Engineering, Graduate School of Engineering, Kobe University

09:30 **Luminescent Solar Concentrators with high Power- and Cost-Efficiency based on Ultra-Earth-Abundant Indirect Band Gap Silicon Qua** **P 10.3**
Francesco Meinardi, Samantha Ehrenberg, Lorena Dhamo, Francesco Carulli, Michele Mauri, Francesco Bruni, Roberto Simonutti, Uwe Kortshagen and Sergio Brovelli
- Francesco Meinardi,Michele Mauri,Francesco Bruni,Sergio Brovelli Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via Cozzi 55, IT-20125 Milano, Italy Glass to Power Srl, Via Monte Nero 66, IT-20135 Milano, Italy -

09:45 **Thermal effects in the resonant energy transfer between Si nanocrystals** **P 10.4**
Arnon Lesage, Berend Smits, Tom Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands

10:00 **Coffee Break**

Si-Nanocrystals: Charge Transport, Synthesis, Plasmonics : Chairs: J. Veinot, Z. Holman

10:30 **Efficient Charge Transfer in Silicon Quantum Dot/Amorphous Hybrids** **P 11.1**
Reuben T. Collins, Idemudia Airuoyo, Tianyuan Guan, Grant Klafehn, Mark T. Lusk, P. Craig Taylor, Paul Stradins
Physics Department, Colorado School of Mines, Golden, CO 80401 USA, National Renewable Energy Laboratory, Golden, CO 80401 USA

11:00 **Non-equilibrium plasmas for nanoparticle synthesis: Silicon nanostructures** **P 11.2**
Rebecca Anthony
Michigan State University

11:30 **Quantum transport in gated dangling-bond atomic wires** **P 11.3**
S. Bohloul,Q. Shi, Robert A. Wolkow, H. Guo
S. Bohloul, Q. Shi, H. Guo: Center for the Physics of Materials and Department of Physics, McGill University, Montreal, Quebec H3A 2T8, Canada Robert A. Wolkow: National Institute for Nanotechnology, National Research Council of Canada, Edmonton, Alberta, Canada T6G 2M9 Department of Physics, University of Alberta, Edmonton, Alberta, Canada T6G 2E1

11:45 **Study of electron traps associated with oxygen superlattices in n-type silicon** **P 11.4**
E. Simoen1,2, S. Jayachandran1,3, A. Delabie1,4, M. Caymax1 and M. Heyns1,3
1 Imec, Kapeldreef 75 B-3001 Leuven, Belgium 2 also at Dept. Solid-State Sciences, Ghent University, Krijgslaan 281 S1, 9000 Gent, Belgium 3 also at KU Leuven, Dept. Metallurgy and Materials, Castle Arenberg 44, B-3001 Leuven, Belgium 4 also at KU Leuven, Dept. Chemistry, Celestijnenlaan 200F, B-3001 Leuven, Belgium

12:00 **Plasmonic response of Phosphorus-hyperdoped Silicon nanocrystals obtained by ultrahigh vacuum evaporation** **P 11.5**
S. Geiskopf (1), M. Stoffel (1), X. Devaux (1), Nikolay Cherkashin (2), C. Bonafos (2), A. Bouché (1), D. Mangin (1), M. Vergnat (1), H. Rinnert (1)
(1) Université de Lorraine, UMR CNRS 7198, Institut Jean Lamour, BP 70239, 54506 Vandœuvre-lès-Nancy, France, (2) CEMES-CNRS Université de Toulouse, rue Jeanne Marvig, BP 94347, 31055 Toulouse, Cedex 4, France

12:15 **Deposition of silicon nanoparticles on a substrate through arc discharge process** **P 11.6**
Amin S. Azar, Mohammed M'hamdi, Alexander G. Ulyashin
SINTEF Materials and Chemistry, Forskiningsveien 1, NO-0373 Oslo, Norway.

12:30 **Lunch**

Si-Nanoelectronics I : Chairs: R. Collins, W. Weber

14:00 **Quantum modeling of multi-gate SOI devices : from conventional CMOS to silicon qubits.** **P 12.1**
Y.-M. Niquet (1, 2), L. Bourdet (1, 2), Z. Zeng (1, 2), F. Triozon (1, 3), A. Corna (1, 4), M. Sanquer (1, 4), S. de Franceschi (1, 4), M. Vinet (1, 3)
(1) Université Grenoble Alpes, Grenoble, France , (2) CEA/INAC/MEM, Grenoble, France , (3) CEA LETI-MINATEC, Grenoble, France , (4) CEA/INAC/PHELIQS, Grenoble, France.

14:30 **Formation of Erbium Silicide on an Epitaxially-Grown Strained Si:P Layer** **P 12.2**
J.-Y. Kim (1), S.-H Choi (1), J. Kim (2),(3), H. Lee (1),(4), C.-W. Yang (1), and H. Kim (1)
(1) School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea (2) Department of Semiconductor and Display Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea (3) Semiconductor R&D Center, Samsung Electronics, Hwaseong 18488, Republic of Korea (4) Analytical engineering group, Samsung Advanced Institute of Technology (SAIT), Samsung Electronics Co., Suwon 16678, Republic of Korea

14:45 **Modulation Doping of Silicon using Aluminium-induced Acceptor States in Silicon Dioxide** **P 12.3**
Dirk König(abc), Daniel Hiller(bc), Sebastian Gutsch(c), Margit Zacharias(c), Sean Smith(a)
(a) Integrated Materials Design Centre (IMDC), University of New South Wales, Sydney, Australia (b) School of Photovoltaic and Renewable Energy Engineering (SPREE), UNSW, Sydney, Australia (c) Laboratory for Nanotechnology, Dept. of Microsystems Engineering (IMTEK), University of Freiburg, Germany

15:00 **Formation of Light Emitting Structures in Si by Molecular Ion Implantation and Thermal Annealing** **P 12.4**
K.V.Karabeshkin, M.A.Shevtsov, N.A.Sobolev, A.N.Tereschenko, A.I.Titov, P.A.Karaseov
Peter the Great Polytechnic University, St.Petersburg, Russia Ioffe Physical-Technical Institute, St.Petersburg, Russia Institute of Solid State Physics of RAS, Chernogolovka, Russia

15:15 **Fast Diffusion Pathways Of Intersitial Phosporus In Silicon** **P 12.5**
V.A. Borodin(1,2), M.G. Ganchenkova(2)
(1) RRC Kurchatov Institute, Kurchatov Pl., 1, 123182 Moscow, Russia, (2) NRNU MEPhI, Kashirskoe sh. 31, 115409 Moscow, Russia

15:30 **Coffee Break**

16:15 **Plenary Session**

Thursday 25 May 2017

Optical Si-Sensors & Bioimaging : Chairs: W. Green, Z. Holman

09:00 **Fluorescent-core whispering gallery mode sensors: Crossing the lasing threshold** **P 13.1**
A. Meldrum, S. Lane, W. Morrish, K. Gardner, P. West, A. Francois
University of Alberta, University of South Australia

09:30 **Vernier effect hybrid optical sensors based on porous silicon and polymer waveguides** **P 13.2**
Paul Azuelos, Nathalie Lorrain, Monique Thual, Mohammed Guendouz
UMR FOTON, CNRS, Université de Rennes 1, ENSSAT, Lannion, France

09:45 **Tuning the properties of silicon nanocrystals for bioimaging applications.** **P 13.3**
Angélique Faramus, Austin Toresdahl, Christopher Robidillo, Jonathan G.C. Veinot
Department of Chemistry, University of Alberta, Edmonton, Alberta T6G2G2, Canada

10:00 **Coffee Break**

Ge-Nanocrystals & SiGe : Chairs: A. Meldrum, D. König

10:30 **High-K materials and embedded nanocrystals for electronic and opto-electronic applications** **P 14.1**
David Lehninger, Florian Honeit, Jan Beyer, Frank Schneider, Johannes Heitmann
Institut für Angewandte Physik, TU Bergakademie Freiberg, D-09596 Freiberg

11:00 **lasing from epitaxial group-IV quantum dots by engineering of single defects** **P 14.2**
Lukas Spindlberger, Thomas Fromherz, Friedrich Schäffler, Antonio Polimeni, Mark T. Lusk, Martyna Grydlik, Moritz Brehm
Johannes Kepler University, Institute of Semiconductor and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria, Johannes Kepler University, Institute of Semiconductor and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria, Johannes Kepler University, Institute of Semiconductor and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria, CNISM and Department of Physics, Sapienza Universita di Roma, Piazzale A. Moro 2, 00185 Roma, Italy, Department of Physics, Colorado School of Mines, Golden, Colorado 80401, United States, Johannes Kepler University, Institute of Semiconductor and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria, Johannes Kepler University, Institute of Semiconductor and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria

11:15 **Work function tuning of Si and Ge surfaces with different atoms: an ab-initio study** **P 14.3**
Stefano Ossicini, Ivan Marri, Matteo, Bertochi, Michele Amato
Dipartimento di Scienze e Metodi dell'Ingegneria, Università di Modena e Reggio Emilia, Via Amendola 2 Pad. Morselli, I-42122 Reggio Emilia, Italy and CNR-Istituto di Nanoscienze-S3, via Campi 213 A,I-41125 Modena, Italy, CNR-Istituto di Nanoscienze-S3, via Campi 213 A,I-41125 Modena, Italy, Dipartimento di Scienze e Metodi dell'Ingegneria, Università di Modena e Reggio Emilia, Via Amendola 2 Pad. Morselli, I-42122 Reggio Emilia, Italy, Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, Universit_e Paris-Saclay, 91405 Orsay, France

11:30 **Strain-compensated formation of multi-stacked Ge quantum dots utilizing Si< sub>1-x< /sub>C< sub>x< /sub> spacer** **P 14.4**
Yuhki Itoh, Tomoyuki Kawashima, Katsuyoshi Washio
Graduate School of Engneering, Tohoku University, Division for International Advanced Research and Education, Tohoku Universtiy, Japan Society for the Promotion of Science Research Fellow ,

11:45 **Responsive Bipolar Phototransistors with Body-Strapping in Standard SiGe BiCMOS Process for Near-IR Applications** **P 14.5**
Klaus Y.-J. Hsu, Ya-Sen Chang
Institute of Electronics Engineering, National Tsing Hua University, Hsinchu, Taiwan

12:00 **Epitaxial growth and study of magnetic properties of self-assembled GeMn quantum dots for spin injection into silicon** **P 14.6**
Son Tung PHAM (1), Lisa MICHEZ(1), Alain RANGUIS(1), Sylvain BERTAINA(2), Vinh LE THANH(1)
(1) Aix-Marseille Université - CNRS CINaM-UMR, 13288 Marseille, France E-mail: tung@cinam.univ-mrs.fr E-mail: michez@cinam.univ-mrs.fr E-mail: ranguis@cinam.univ-mrs.fr E-mail: vinh.le-thanh@univ-amu.fr (2) Aix-Marseille Université - CNRS IM2NP-UMR, 13397 Marseille, France E-mail: sylvain.bertaina@im2np.fr

12:15 **Electronic and optical phenomena in Ge/Si quantum dot photodetectors** **P 14.7**
A.V. Dvurechenskii1, 2, A.I.Yakimov1,3, V.V.Kirienko1, A.A.Bloshkin1,2 A.A. Shklyaev1,2
1 Rzhanov Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences, Lavrent'eva 13, 630090 Novosibirsk, Russia 2 Novosibirsk State University, 630090 Novosibirsk, Russia 3 Tomsk State University, 634050 Tomsk, Russia

12:30 **Lunch**

Si-Nanocrystals: Carrier Dynamics & Charge Transport : Chairs: J. Heitmann, Z. Holman

14:00 **Carrier dynamics in Si quantum dots and nanowires studied with Time-resolved THz Spectroscopy** **P 15.1**
Matthew Bergren and Matthew C. Beard
National Renewable Energy Laboratory

14:30 **Terahertz photoconductivity in silicon nanocrystals networks** **P 15.2**
Vladimir Pushkarev(1), Hynek Němec(1), Sebastian Gutsch(2), Daniel Hiller(2), Jan Laube(2), Margit Zacharias(2), Tomáš Ostatnický(3), Petr Kužel(1).
1 - Institute of Physics ASCR, Na Slovance 2, 18221 Prague 8, CZ, 2 - Laboratory for Nanotechnology, Department of Microsystems Engineering (IMTEK), University of Freiburg, Georges-Koehler-Allee 103,79110 Freiburg im Vreisgau, Germany Institution, 3 - Faculty of Mathematics and Physics, Charles University in Prague, Ke Karlovu 3, 12116 Prague 2, Czech Republic.

14:45 **Charge transport in silicon nanocrystal field-effect transistors** **P 15.3**
Willi Aigner1), Julius Röwe1), Oliver Bienek1), Derese Desta2), Hartmut Wiggers3), Martin Stutzmann1), Rui N. Pereira1),3)
1) Walter Schottky Institut, Technische Universität München, Am Coulombwall 4, 85748 Garching bei München, Germany 2) Institute for Nanostructures, Nanomodelling and Nanofabrication and Department of Physics, University of Aveiro, 3810-193 Aveiro, Portugal 3) Institute for Combustion and Gasdynamics – Reactive Fluids - and CENIDE, Center for Nanointegration Duisburg-Essen, Universität Duisburg-Essen, Carl-Benz-Straße 199, 47057 Duisburg, Germany

15:00 **Transition from Auger to bimolecular recombination in silicon nanocrystals/SiO2 superlattices** **P 15.4**
T. Chlouba, F. Trojánek, D. Hiller, S. Gutsch, M. Zacharias, P. Malý
Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 5, 12116 Praha 2, Czech Republic, Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 5, 12116 Praha 2, Czech Republic, Department of Nanotechnology, IMTEK, Faculty of Engineering, Albert-Ludwigs-University Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Nanotechnology, IMTEK, Faculty of Engineering, Albert-Ludwigs-University Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Nanotechnology, IMTEK, Faculty of Engineering, Albert-Ludwigs-University Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 5, 12116 Praha 2, Czech Republic

15:15 **Coffee Break**

Si-Nanoelectronics II : Chairs: M. Beard, W. Weber

15:45 **„Doped" silicon without dopants – alternative for the realization of semiconductor devices** **P 16.1**
Joachim Knoch
RWTH Aachen University, Institute of Semiconductor Electronics

16:15 **Inducing n- and p-type Behaviour of Silicon Nano-Volumes by Embedding in Silicon Oxide and Nitride** **P 16.2**
D. König(ab), D. Hiller(b), N. Wilck(c), B. Berghoff(c), M. Müller(d), S. Thakur(e), G. Di Santo(e), L. Pettacia(e), J. Mayer(d), J. Knoch(c), M. Zacharias(b), S. Smith(a)
(a) Integrated Materials Design Centre, University of New South Wales, Australia (b) Chair of Nanotechnology, Institute of Microtechnology (IMTEK), Albert-Ludwigs University Freiburg, Germany (c) Institute of Semiconductor Electronics (IHT), RWTH Aachen University, Germany (d) Ernst-Ruska Center forMicroscopy and Spectroscopy with Electrons, RWTH Aachen University, Germany (e) Elettra - Sincrotrone Trieste, Basovizza, Trieste, Italy

16:30 **Low-k spacers for leading-edge FinFETs and FDSOI transistors** **P 16.3**
Fabian Koehler, Dina H. Triyoso, Han Tao, Bianca Antonioli-Trepte, and Klaus Hempel
GLOBALFOUNDRIES, Wilschdorfer Landstrasse 101, 01109 Dresden, Germany (Fabian Koehler, Bianca Antonioli-Trepte, Klaus Hempel), GLOBALFOUNDRIES, 400 Stone Break Rd Extension, Malta, NY 12020, USA (Dina H. Triyoso, Han Tao)

16:45 **Deep level transient spectroscopic investigation of phosphorus-doped silicon by self-assembled molecular monolayers** **P 16.4**
Xuejiao Gao1, Bin Guan1, Abdelmadjid Mesli2,Kaixiang Chen1,Yaping Dan1
1University of Michigan – Shanghai Jiao Tong University Joint Institute, Shanghai Jiao Tong University, 2Institut Matériaux Microélectronique Nanosciences de Provence, UMR 6242 CNRS, Université Aix-Marseille,

17:00 **Break**

Si-Photonics & Sensors : Chairs: J. Knoch, D. Hiller

17:15 **Methane trace-gas sensing enabled by silicon photonic integration** **P 17.1**
William M. J. Green(1), Chi Xiong(1), Marwan Khater(1), Yves Martin(1), Eric J. Zhang(1), Chu C. Teng(2), Jason S. Orcutt(1), Laurent Schares(1), Tymon Barwicz(1), Nathan Marchack(1), Steven J. Holmes(1), Swetha Kamlapurkar(1), Sebastian Engelmann(1), and Gerard Wysocki(2)
1 - IBM Thomas J. Watson Research Center, 1101 Kitchawan Rd, Yorktown Heights, NY 10598, USA 2 - Department of Electrical Engineering, Princeton University, Princeton NJ 08540

17:45 **Ab-initio study of nonlinear optical susceptibilities in narrow silicon nanowires** **P 17.2**
Daryoush Shiri
Department of Physics, Chalmers University of Technology, SE-412 96, Göteborg, Sweden

18:00 **Silicon Micropillars for pathogen Nucleic Acids isolation from biological sample** **P 17.3**
Salvatore Petralia (1), Emanuele Luigi Sciuto (2), Sabrina Conoci (1).
(1) STMicroelectronics, Stradale Primosole 50, 95121 Catania Ialy, (2) Department of Physics and Astronomy, University of Catania, Via Santa Sofia 64, 95123 Catania, Italy

18:15 **Closing Remarks**

SYMPOSIUM Q

Nano-engineering coatings and thin films

Symposium Organizers :

José Filipe VAZ, University of Minho, Braga, Portugal

Martin FENKER, fem Forschungsinstitut Edelmetalle + Metallchemie, Schwäbisch Gmünd, Germany

Philippe STEYER, INSA de Lyon – Laboratoire MATEIS, Villeurbanne, France

Tomas POLCAR, University of Southampton, U.K.

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Monday 22 May 2017

Fundamentals of thin film growth: diagnostics, analysis and modeling 1 : Kostas Sarakinos + Ivan Petrov

09:00 **CONTROL OF MICRO- AND NANOSTRUCTURE IN TRANSITION METAL NITRIDES AND BORIDES: RECENT ADVANCES** — **Q 1.1**
Ivan Petrov, G. Greczynski, J. Rosen, J. Birch, L. Hultman, J.E. Greene
Frederick Seitz Materials Research Laboratory and Materials Science Department, University of Illinois, Urbana, Illinois 61801, Department of Physics (IFM), Linköping University, SE-581 83 Linköping, Sweden

09:30 **Dynamic evolution of island morphology in non-wetting systems** — **Q 1.2**
Bo Lü1, Georgios Almyras1, Joseph E. Greene2,3, Kostas Sarakinos1
1 Nanoscale Engineering Division, Department of Physics, Chemistry and Biology, Linköping University, SE 581 83, Linköping, Sweden 2 Thin Film Physics Division, Department of Physics, Chemistry and Biology, Linköping University, SE-581 83 Linköping, Sweden 3 Materials Science and Physics Department, University of Illinois, Urbana, Illinois, USA

09:45 **Atomic scale investigations of thermally treated MoSiB/TiAlN nano-multilayers** — **Q 1.3**
E. Aschauer1, S. Sackl2, C.M. Koller1, T. Schachinger3, M. Arndt4, P. Polcik5, H. Riedl1,6, and P.H. Mayrhofer1,6
1Christian Doppler Laboratory for Application Oriented Coating Development, TU Wien, Austria 2 Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Austria 3 Technische Universität Wien, University Servicecenter for TEM (USTEM) Vienna, Austria 4Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein 5Plansee Composite Materials GmbH, Germany 6Institute of Materials Science and Technology, TU Wien, Austria

10:00 **Coffee break**

10:30 **Interdiffusion between float glass and aluminum-doped silica thin films** — **Q 1.4**
Jean-Thomas Fonné, Emmanuelle Gouillart, Hervé Montigaud, Ekaterina Burov, Sergey Grachev, Damien Vandembroucq
Surface du Verre et Interfaces, Joint Unit CNRS/Saint-Gobain UMR125, Aubervilliers, France,,,, Laboratoire PMMH, UMR 7636 CNRS/ESPCI Paris/Univ. Paris 6 UPMC/Univ. Paris 7 Diderot, 10 rue Vauquelin, 75231 Paris cedex 05, France

10:45 **Towards a better understanding of the early stages of metallic film growth using in situ and real time monitoring** — **Q 1.5**
C. Furgeaud, L. Simonot, A. Michel, C. Mastail, G. Abadias
Institut Pprime, UPR 3346, Université de Poitiers-CNRS-ENSMA, France

11:00 **Ab initio study of the atomic level structure of TiO2-TiN interfaces for antibiofouling applications** — **Q 1.6**
Julio Gutiérrez Moreno, Michael Nolan
Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland

11:15 **Multiscale Simulation of transition metal nitride thin film growth at Oblique Angle Deposition process via a kinetic Monte Carlo** — **Q 1.7**
C. Mastail, F. Nita, A. Michel, G. Abadias
Institut Pprime

11:30 **Tailoring microstructure, phase formation, stress, and electrical properties of copper thin films by HiPIMS** — **Q 1.8**
F. Cemin 1, G. Abadias 2, C. Furgeaud 2, A. Michel 2, T. Maroutian 3, P. Lecoeur 3, T. Minea 1, D. Lundin 1
1 LPGP, UMR 8578 CNRS, Université Paris-Sud, Orsay, France, 2 Institut Pprime, UPR 3346 CNRS, Université de Poitiers, Poitiers, France, 3 C2N – Orsay, UMR 9001 CNRS, Université Paris-Sud, Orsay, France,

11:45 **Pulsed laser deposition of garnets at a growth rate of 20-microns per hour** — **Q 1.9**
James A. Grant-Jacob, Stephen J. Beecher, David P. Shepherd, Robert W. Eason, and Jacob I. Mackenzie
Optoelectronics Research Centre, University of Southampton, Southampton SO17 1BJ, UK

12:00 **Crystallisation dynamics of highly-textured large-grain Ge Al bilayers observed by in-situ optical microscopy.** — **Q 1.10**
Daniel Pelati (1,2), Andrea Cattoni (1), Stéphane Collin(1), Jean-Christophe Harmand (1), Frank Glas (1), Phannara Aing (2), Fabrice Oehler (1)
(1) C2N, CNRS – Univ. Paris-Sud – Université Paris-Saclay, Site de Marcoussis - 91460 Marcoussis, France , (2) Riber SA, 95870 Bezon, France

12:15 **Lunch**

Fundamentals of thin film growth: diagnostics, analysis and modeling 2 : F.Vaz + J. Schmitz

14:00 **Influence of plasma conditions on nano-composite and nano-layered coatings** — **Q 2.1**
Gerry van der Kolk, Ivailo Dolchinkov
Ionbond Netherlands b.v.

14:30 **Deposition of Anatase-, Rutile-, and Mixed-Phases TiO2 Films by Mist-CVD and Photodetector Applications** — **Q 2.2**
Han-Yin Liu, Ching-Sung Lee, Wei-Chou Hsu, Guan-Jyun Liu, Ruei-Chin Huang, Wei-Hsin Liu, Fu-Yuan Hou, and Guan-Cheng Tu
Department of Electronic Engineering, Feng Chia University, Taichung City, Taiwan

14:45 **Thin amorphous carbon coating by using plasma-enhanced atomic layer deposition technique** — **Q 2.3**
Taejin Choi, Jeong-Gyu Song, Seunggi Seo, Seungmin Yeo, Hyungjun Kim, Byeonghyeon Jang, Soo-Hyun Kim,
Nanodevice Laboratory, School of Electrical and Electronic Engineering, Yonsei University, Seodaemun-Gu, Seoul 120-749, Republic of Korea, Nano-Devices and Process Laboratory, School of Materials Science and Engineering, Yeungnam University, Dae-Dong, Gyeongsan-Si 712-749, Republic of Korea,

15:00 **In-Situ Real-Time X-Ray Study of Copper Growth on Graphene** — **Q 2.4**
M. Pelletta, P. Siffalovic, M. Hodas*, Y. Halahovets, K. Vegso**, M. Jergel, E. Majkova
Institute of Physics, Slovak Academy of Sciences, Dubravska cesta 9, 845 11 Bratislava, Slovakia, *Institute of Applied Physics, University of Tubingen, 72076 Tubingen, Germany, **Japan Synchrotron Radiation Research Institute, 1-1-1, Kouto, Sayo-cho, Sayo-gun, Hyogo 679-5198 Japan

15:15 **Study of Si(001) surface layers after low-energy plasma immersion He+ implantation by complementary structural sensitive methods** — **Q 2.5**
A. Lomov, K. Shcherbachev, Yu. Chesnokov, A. Miakonkikh, D. Kiselev
Institute of Physics and Technology of Russian Academy of Sciences, Moscow, Russia, National University of Science and Technology MISiS, Moscow, Russia, National Research Centre "Kurchatov Institute", Moscow, Russia, Institute of Physics and Technology of Russian Academy of Sciences, Moscow, Russia, National University of Science and Technology MISiS, Moscow, Russia

15:30 **Coffee break**

Characterization methods at the nanoscale of nano-engineered thin films 1 : F. Vaz + M. Lavisse

16:00 **Low temperature thin films for next-generation microelectronics** — **Q 3.1**
Jurriaan Schmitz
MESA Institute for Nanotechnology, University of Twente, Enschede, The Netherlands

16:30 **Grain size correlated residual stress profile in W thin films revealed by the ion beam layer removal method** — **Q 3.2**
René Hammer*, Jozef Keckes**, Juraj Todt**, Bernhard Sartory*, Jochen Kraft***, and Stefan Defregger*
*Materials Center Leoben Forschung GmbH, Roseggerstraße 12, 8700 Leoben, Austria
**Montanuniversität Leoben, Franz-Josef-Straße 18, 8700 Leoben, Austria ***AMS AG, Tobelbader Strasse 30, 8141 Unterpremstätten, Austria

16:45 **Silicide formation and linked stress evolution during sputtering of Pd films on Si** — **Q 3.3**
J.J. Colin, A. Michel, C. Furgeaud, C. Mastail, G. Abadias
Institut Pprime, UPR 3346 CNRS-Université de Poitiers-ENSMA, Département de Physique et Mécanique des Matériaux, SP2MI, Bld Marie et Pierre Curie, Téléport 2, 86962 Chasseneuil, France

17:00 **Uniform Nanoparticle Thin Films with Independently Tunable Thickness and Porosity Formed Via Hypersonic Impaction** — **Q 3.4**
Peter Firth, Zachary Holman
Arizona State University,Swift Coat

17:15 **Assessment of Surface Damage Characteristic of Single- and Few-Layer h-BN, MoS2, and Graphene** — **Q 3.5**
Khac Bien Cuong Tran, Koo-Hyun Chung
School of Mechanical Engineering, University of Ulsan, Ulsan 680-749, South Korea.

Poster session 1: Preparation, Characterization and Properties of Thin Films : F. Vaz + T. Polcar

17:30 **Structural, Optical and Electrical properties of ZnO:Al thin films Grown by Magnetron Sputtering and Spray pyrolysis methods.** **Q PM.1**
Saâd Rahmane, Benchiha kheira, Allag Abdelkrim, Attouche Hafida and Kouidri Nabila
Laboratoire de Physique des couches minces et applications, Université de Biskra, BP 145 RP, 07000 Biskra, Algérie

17:30 **Asymmetric flexible ZTO/Ag/ITO and ITO/Ag/ZTO electrodes grown by roll-to-roll sputtering for flexible OLEDs** **Q PM.2**
Han-Ki Kim1 and Tae-Woong Kim2
1Kyung Hee University, Department of Advanced Materials Engineering for Information and Electronics, 1 Seocheon, Yongin, Gyeonggi-do 446-701, Republic of Korea
2Samsung Display, OLED R&D Center, Yongin, Gyeonggi-do 446-711, Republic of Korea

17:30 **The copper oxide thin films and its the transistor properties deposited by atomic layer deposition technique** **Q PM.3**
Jung-Dae Kwon, Se-Hun Kwon, and Jin-Seong Park.
Korea Institute of Materials Science, Pusan National University, and Hanyang University

17:30 **Coating properties of chemical solution processed MoS2 thin films on various oxides** **Q PM.4**
Joonam Kim, Ken-ichi Haga, Eisuke Tokumitsu
School of Materials Science, Japan Advanced Institute of Science and Technology

17:30 **INFLUENCE OF FORMATION NANOSCALE STRUCTURES ON THE EMISSION PROPERTIES AND PERFORMANCE CHARACTERISTICS OF FERRO ALLOYS** **Q PM.5**
S.B. Donaev, B.E. Umirzakov, D.A.Tashmukhamedova
Tashkent state technical university

17:30 **Atmospheric-pressure plasma processing for functional treatment and PECVD by using a novel dielectric barrier discharge reactor** **Q PM.6**
Woo Seok Kang, Min Hur, Jae-Ok Lee, Young-Hoon Song
Korea Institute of Machinery & Materials

17:30 **Characterization of a corrosion resistant coating deposited on S355 steel substrate by PVD HiPIMS process** **Q PM.7**
Quentin Hatte, Samuel Branchu, Pierre Antoine Dubos, Mireille Richard-Plouet, Pascal Casari, Pierre Yves Jouan
IRT Jules Verne, Chemin du Chaffault, 44340 Bouguenais , Institut de recherche en génie civil et mécanique, UMR6183, IUT de Saint-Nazaire, 58 rue Michel Ange, BP 420 - 44606 Saint Nazaire Cedex , Institut de recherche en génie civil et mécanique, UMR6183, IUT de Saint-Nazaire, 58 rue Michel Ange, BP 420 - 44606 Saint Nazaire Cedex , Institut des Matériaux Jean Rouxel, CNRS UMR6502, 2 rue de la Houssinière – BP 32229 44322 Nantes cedex 3 , Institut de recherche en génie civil et mécanique, UMR6183, IUT de Saint-Nazaire, 58 rue Michel Ange, BP 420 - 44606 Saint Nazaire Cedex , Institut des Matériaux Jean Rouxel, CNRS UMR6502, 2 rue de la Houssinière – BP 32229 44322 Nantes cedex 3

17:30 **Crystal shape control of methylamine lead halide materials** **Q PM.8**
Quyet Van Le, Ju Hyun Jeon, Soo Young Kim
Chung-Ang University, Chung-Ang University, Chung-Ang University

17:30 **Blue-UVC upconversion of Y2Si2O7:Pr3+ phosphor film** **Q PM.9**
1Youngwoo Jeong, 2Soonho Park, 2Jaehyoung Park, 3Taewook Kang, 4Heelack Choi, 5Taehoon Kim, 2, 3*Jongsu Kim
1Department of LED Convergence Engineering, Pukyong National University, Busan, 608-737, South Korea 2 Department of Display science & engnieering, Pukyoung National University, Busan, 608-737, South Korea 3 Interdisciplinary Program of LED and Solid State Lighting Engineering, Pukyong National University, Busan, 608-739, South Korea 4 Department of material science and engineering, Pukyoung National University, Busan, 608-737, South Korea 5 87, Gunjacheon-ro 21beon-gil, Siheung-si, Gyeonggi-do, Korea

17:30 **Characterization of 2-Dimensional Black Phosphorous Thin Films deposited using Inkjet Printing Process for TFT Applications** **Q PM.10**
Ho Young Jun, Eon Ju Lee, Si Ok Ryu*
School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan 712-749, South Korea

17:30 **A novel approach to silicon surface modification and functionalization based on cavitation processing** **Q PM.11**
1 R.K.Savkina, A.B. Smirnov, A. I. Gudymenko, V. P. Kladko, A. A. Korchovyi, A. S. Nikolenko, M.I. Smoliy, V. V. Strelchuk 2 T.G.Kryshtab
1 V.Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 41 Nauky av, Kyiv 03028, Ukraine, 2 Instituto Politécnico Nacional - ESFM, Department of Physics, Av. IPN, Ed. 9 U.P.A.L.M., 07738, Mexico D.F.

17:30 **Doping and Annealing Effects on Structural, Electrical and Optical Properties of Tin-doped Zinc-Oxide Thin Films** **Q PM.12**
E. PEKSU, H. KARAAGAC
Department of Physics, Istanbul Technical University

17:30 **The effect of Cu content on structural and optical properties of sol-gel derived CuxCo3-xO4 thin films** **Q PM.13**
Hamed Behzad Farhad E Ghodsi Elif Peksu Hakan Karaagac
Department of Physics, Faculty of Science, The University of Guilan, Namjoo Avenue, 413351914 Rasht, Iran Department of Physics Engineering , Istanbul Technical University, Maslak, 34469 Istanbul, Turkey

17:30 **Effect of energy on the formation of flexible hard Al-Si-N films prepared by magnetron sputtering** **Q PM.14**
Daniel Javdošňák, Jindřich Musil, Radomír Čerstvý, Stanislav Haviár, G. Remnev, V. Uglov
University of West Bohemia, Univerzitní 8, 306 14 Plzeň, Czech Republic

17:30 **Comparative Study On Patterned Electrode Organic Field Effect Transistors** **Q PM.15**
Bilal Istanbullu, Mahmut Kus
Bilal Istanbullu, Selcuk University, Advanced Technology Research and Application Center, Konya/TURKEY Selcuk University, Department of Nanotechnology and Advanced Materials, Konya/TURKEY Mahmut Kus, Selcuk University, Advanced Technology Research and Application Center, Konya/TURKEY Selcuk University, Departmant of Chemical Engineering, Konya/TURKEY

17:30 **Effect of SnS addition on the optical and dielectric properties of Sn-Sb-S nano-rods elaborated by glancing angle deposition** **Q PM.16**
Dhafer Abdelkader, Ferid Chaffar Akkari, Naoufel khemiri, Frédéric Antoni, Bruno Gallas, Mounir Kanzari
1.Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs-ENIT-Université Tunis ElManar,BP37,Lebelvédère 1002 Tunis-Tunisia 2. 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 3. Institut des NanoSciences de Paris-CNRS-Université Pierre et Marie Curie, 140 rue de Lourmel, 75015 Paris, France

17:30 **Composition dependent electron-phonon coupling and interface mixing of Pd1-xNix/Si due to swift heavy ion irradiation** **Q PM.17**
Paramita Patra1*, S. A. Khan2, D. Kabiraj2, Manju Bala2, D. K. Avasthi3, S. K. Srivastava1
1 Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302, India 2 Inter-University Accelerator Centre, Aruna Asaf Ali Marg, New Delhi 110 067, India 3 Amity University, Noida, Uttar Pradesh 201313, India *Email: patro.paro@phy.iitkgp.ernet.in

17:30 **Synthesis and characterization of thin films composite membranes with chemical resistance** **Q PM.18**
V. Satulu1, B. Mitu1, S.I. Voicu2, L. Kravets3, G. Dinescu1
1 National Institute for Lasers, Plasma and Radiation Physics, PO Box MG-36, 077125 Magurele Bucharest, Romania 2 Politechnical University of Bucharest, Faculty of Applied Chemistry and Material Science, Gh. Polizu Str. 1-7, S1, 011061 Bucureşti, Romania 3 Joint Institute for Nuclear Research, Flerov Laboratory of Nuclear Reactions, Joliot-Curie Str. 6, 141980 Dubna, Russia

17:30 **Low-Pressure Cold Spray WS2 coatings for dry film lubrication** **Q PM.19**
Adriana BALAN (1), Alice O. MATEESCU (2), Catalin CEAUS (1), Gheorghe MATEESCU (2), Ioan STAMATIN (1), Sanda VOINEA (1), Cornel SAMOILA (3), Dan CRISTEA (3)
(1) University of Bucharest, Faculty of Physics, 3 Nano-SAE Research Centre, 405 Atomistilor Str., 077125 Magurele, Romania (2) "Horia Hulubei" National Institute of Physics and Nuclear Engineering, 30 Reactorului Str., 077125 Magurele, Romania
(3) Transilvania University of Brasov, Materials Science Department, 29 Eroilor Blvd.,500036, Brasov, Romania

17:30 **Microstructural Features and Deformation-induced Martensites in Stainless Steel by Cryogenic Ultrasonic Impact Treatment** **Q PM.20**
M.A.Vasylyev1, B.N. Mordyuk1, S.I.Sidorenko2, S.M.Voloshko2, A.P.Burmak2
1Kurdyumov Institute for Metal Physics of the NAS of Ukraine, Ukraine, 2Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.

17:30 **Antireflective, self-cleaning and IR-shielding WO3-rGO coatings for PV glazing** **Q PM.21**
Maria Covei, Alexandru Enesca, Cristina Bogatu, Dana Perniu, Anca Duta
R&D Centre: Renewable Energy Systems and Recycling, Translvania University of Brasov, Romania

17:30 **Effects of surface nanocrystallization on the anodic oxidation behavior of Aluminum** **Q PM.22**
Asghar Heydari Astaraee, Reza Miresmaeili, Mahmood Aliofkhazraei, Sara Bagherifard, Mario Guagliano
Department of Materials Engineering, Tarbiat Modares University, P.O. Box: 14115-143, Tehran, Iran, Department of Materials Engineering, Tarbiat Modares University, P.O. Box: 14115-143, Tehran, Iran, Department of Materials Engineering, Tarbiat Modares University, P.O. Box: 14115-143, Tehran, Iran, Department of Mechanical Engineering, Politecnico di Milano, 20156 Milan, Italy, Department of Mechanical Engineering, Politecnico di Milano, 20156 Milan, Italy

17:30 **Metal-Insulator Transition Characteristic of Sol-Gel Derived V2O3 Thin Film** **Q PM.23**
Doohun Kim
Korea Electrotechnology Research Institute

17:30 **Enhanced crystallinity and electrical properties of metal oxide semiconductor by combustion reaction under deep UV radiation** **Q PM.24**
Jun-Gyu Choi, Won-June Lee, Myung-Han Yoon*
School of Materials Science and Engineering, Gwangju Institute of Science and Technology, South Korea

17:30 **Backside Carbon Gettering Approach to Grow High-quality Single-Crystal Monolayer Graphene for Optoelectronic Applications** **Q PM.25**
Irfan Haider Abidi, Abhishek Tyagi, Zhengtang Luo
Department of Chemical and Biomolecular Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong

17:30 **Tribological properties of oxides films grown by ALD method** **Q PM.26**
R. Pietruszka1, B. S. Witkowski1, S. Zimowski2, T. Stapinski3, M. Godlewski1,4
1Institute of Physics, Polish Academy of Sciences, Aleja Lotnikow 32/46, PL-02668 Warsaw, Poland 2AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Mickiewicza Av. 30, 30-059 Krakow, Poland 3AGH University of Science and Technology, Mickiewicza Av. 30, 30-059 Krakow, Poland 4Department of Mathematics and Natural Sciences College of Science, Cardinal Stefan Wyszynski University, Warsaw, Poland

17:30 **Nanocellulose fibers thin films: barrier properties and gas transport kinetics** **Q PM.27**
David Roilo, Cecilia Ada Maestri, Paolo Bettotti, Marina Scarpa, Riccardo Checchetto
David Roilo, Cecilia Ada Maestri, Paolo Bettotti, Marina Scarpa, Riccardo Checchetto
Department of Physics, University of Trento, via Sommarive 14, I-38123 Povo, TN, Italy.

17:30 **Effect of Hydrogen in Local Structural Variation in VO2 Films** **Q PM.28**
Dooyong Lee1,3, Hyegyeong Kim1, Sehwan Song1, Ji Woong Kim1, Ik Jae Lee2, Yooseok Kim3, Hyung-Joong Yun3, Jouhahn Lee3, Sang-Don Bu4, Sungkyun Park1,*
1 Department of Physics, Pusan National University, Busan 46241, Korea ,2 Energy & Environmental Materials Team, Pohang Accelerator Laboratory, Pohang 37673, Korea ,3 Advanced Nano Surface Research Group, Korea Basic Science Institute, Daejeon 34133, Korea ,4 Department of Physics, Chonbuk National University, Jeonju 54896, Korea

17:30 **Wide Spectral Photosensing Properties of ZTO Thin Film Transistor Fabricated Via Solution Process** **Q PM.29**
I-Wen Wang 1, Jeng-Ting Li 1, Jen-Sue Chen 1, and Jiann-Shing Jeng 2
1 Department of Materials Science and Engineering, National Cheng Kung University, Tainan 70101, Taiwan, 2 Department of Materials Science, National Tainan University, Tainan 70005, Taiwan

17:30 **E-beam deposition of Germanium and Zinc Sulphide thin films and multilayered structures for mid-Infrared applications** **Q PM.30**
M. Duris1.2., D. Deubel.1, L. Bodiou.2, C. Vaudry.1, J-C Keromnes.1 and J. Charrier.2,
1.KERDRY, 5 Rue Louis de Broglie, 22300 Lannion, France, 2.CNRS UMR 6082 Foton, ENSSAT CS 80518, 22305 Lannion, France

17:30 **Amorphous SiOC(:Er) films deposited by RF-magnetron sputtering as antioxidation coating on ZrB2–SiC ceramics** **Q PM.31**
A.V. Vasin*, A.V. Rusavsky*, I.P. Neshpor**, T.V. Mosina**, D.V. Vedel**, O.N. Grigoriev**, A.N. Nazarov*
*Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine,
**Frantsevich Institute of Materials Science Problems NAS of Ukraine, Kyiv, Ukraine

17:30 **Process characterization of reactive magnetron sputtering of Cu target for tuning the CuOx properties** **Q PM.32**
Catalin Vitelaru, Iulian Pana, Adrian Kiss, Nicolae Catalin Zoita
National Institute for Optoelectronics, 409 Atomistilor St., 077125 Magurele, Romania , Faculty of Physics, University of Bucharest, 405 Atomistilor St., Magurele 077125, Romania

17:30 **Evaluation of ZrCN and ZrCrSiCN coatings intended for tribological applications** **Q PM.33**
L.R. Constantin, A.C. Parau, M. Dinu, M. Balaceanu, A. Vladescu, M. Braic
National Institute for Optoelectronics, 409 Atomistilor St., Magurele-Bucharest, 077125 Romania, Phone/fax: +4021-457 57 59

17:30 **EFFECT OF ANEALING ATMOSPHERE AND INTERFACES ON A1 □ L10 FePt PHASE TRANSFORMATION IN MULTILAYERED [Pt/Fe]n FILMS** **Q PM.34**
M.Yu. Verbytska, Ye.O. Kholina, P.V. Makushko, T.I. Verbytska, S.I. Sidorenko, Yu.M. Makogon
National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», 03056, Prospect Peremogy 37, Kyiv, Ukraine

17:30 **Atmospheric-Pressure Chemical Vapour Deposition of graphene on Tin and Copper:Tin alloys** **Q PM.35**
Maryam Saeed, Ian Kinloch, Brian Debry
University of Manchester

17:30 **Co-synthesis of Ni-Al and Ni-Fe coatings by pack cementation** **Q PM.36**
D. Kourtidou, D. Chaliampalias, D. Karfaridis, C. Vogiatzis, E. Pavlidou, P. Patsalas, S.Skolianos, K. Chrissafis, G. Vourlias
Aristotle University of Thessaloniki

17:30 **Creating Coatings Combining High-Energy Methods of Electric-Spark Alloying and Shock Treatment** **Q PM.37**
S.I. Sidorenko, G.G. Lobachova, Ie.V. Ivashchenko, N.A. Shapovalova, K.V. Melashenko
Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.

17:30 **Epitaxial TiC/MgO films grown by a hybrid sputtering technique** **Q PM.38**
Nicolae-Catalin ZOITA, Adrian Emil KISS, Mihaela DINU, Catalin VITELARU, Viorel BRAIC
National Institute of Research and Development for Optoelectronics (INOE 2000)

17:30 **Elastic constants and stress-strain in thin films: application in fiber-textured gold film by X-Ray diffraction** **Q PM.39**
Edson M. Santos, D. Faurie
Universidade do Estado da Bahia- UNEB, LSPM-CNRS, Université Paris XIII, Sorbonne Paris Cité

17:30 **Enabling Organic Thin Film Positioning on Hydrophobic/Hydrophilic Hybrid Guide Templates Realized by Cold Spin-Casting** **Q PM.40**
Jung Hye Lee1, Hak-Jong Choi2, Heon Lee2, Yeon Sik Jung1
1Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon 34141, Korea, 2Department of Materials Science and Engineering, Korea University, Seoul, 02841, Korea

17:30 **Electrodeposition of crack-free Ni-W coatings in the pulse current mode** **Q PM.41**
Sergey M. Karabanov, Dmitry V. Suvorov, Yulia M. Stryuchkova, Gennady P. Gololobov, Viktor S. Gurov, Vladislav S. Loginov, Dmitry Yu. Tarabrin
Ryazan State Radio Engineering University, Ryazan, Russia

17:30 **On the relation between phase transformation, Si segregation and stress development in Mo/Si multilayers** **Q PM.42**
A. Michel, A. Fillon, G. Abadias
Institut Pprime, UPR 3346 CNRS-Université de Poitiers-ENSMA, Département de Physique et Mécanique des Matériaux, SP2MI, Bld Marie et Pierre Curie, Téléport 2, 86962 Chasseneuil, France

17:30 **Aerographite as Black Body Probe for High-Speed Infrared Thermography** **Q PM.43**
Jan Schäfer (1)*, Markus Becker (1), Florian Sigeneger (1), Jorit Gröttrup (2), Daria Smazna (2), Matthias Mecklenburg (3), Yogendra K. Mishra (2), Rainer Adelung (2), Bodo Fiedler (3), Rüdiger Foest (1)
(1) Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany, (2) Institute for Material Science, Christian-Albrechts-University of Kiel, Germany, (3) Institute for Polymer & Composites, Hamburg University of Technology, Germany

17:30 **Physical investigations on transparent conducting oxides thin films based on SnO2-ZnSnO alloys grown on sapphire substrates** **Q PM.44**
I.Saafi1, G. Schmerber2, A. Amlouk1, A.Dinia2, M. Amlouk1
1 Unité de Physique des dispositifs à Semi-conducteurs UPDS, Faculté des Sciences de Tunis, Université de Tunis El Manar, Tunisie. 2 Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504, 23 rue du Lœss, B.P. 43, 67034 Strasbourg Cedex 2, France

17:30 **Cu-Ni and Cu-MgO hetero-catalyst for position controlled n-layer graphene growth** **Q PM.45**
Hak Ki Yu
Dept. of Materials Science and Engineering and Dept. of Energy Systems Research, Ajou University, Suwon, Korea

17:30 **Self-piling Silicate Platelet Nanocomposite Films and Flame-blocking Properties** **Q PM.46**
Jau-Yu Chiou, Yu-Wei Hsiao, Jiang-Jen Lin
National Taiwan University

17:30 **Nitrogen-Incorporated Amorphous Carbon Thin Films with Tuneable Optoelectronic Properties Prepared via DC Magnetron Sputtering.** **Q PM.47**
James A. Behan, Serban N. Stamatin, Md. Khairul Hoque, Guido Ciapetti, Federico Zen, Letica Esteban-Tejeda, Paula E. Colavita
School of Chemistry, CRANN and AMBER Research Centres, Trinity College Dublin, College Green, Dublin 2, Ireland.

17:30 **Investigation of electrical and optical properties of low temperature TiN rf-magnetron sputtering** **Q PM.48**
D.V. Sosnin, D.A. Kudryashov, A.M. Mozharov
St. Petersburg Academic University, Khlopina 8/3, 194021 St. Petersburg, Russia

17:30 **Electron Nano-Tomography of Au-TiO2 thin films exhibiting Localized Plasmon Surface Resonance effects** **Q PM.49**
Siddardha Koneti, Marco S. Rodrigues, Joel Borges, Lucian Roiban, Filipe Vaz, Thierry Epicier, Philippe Steyer
Univ. Lyon, INSA-Lyon, MATEIS UMR CNRS 5510, 21 Avenue Jean Capelle, 69621, Villeurbanne cedex, France, Centro de Física, Universidade do Minho, Campus de Gualtar, 4710 - 057 Braga, Portugal, SEG-CEMUC, Mechanical Engineering Department, University of Coimbra, 3030-788 Coimbra, Portugal,

17:30 **Development of the multilayer container-type protective-coating under lower thermal treatment requirements** **Q PM.50**
Vilko Mandic, Christelle Nivot, Arnaud Tricoteaux, Philippe Champagne
University of Valenciennes and Hainaut-Cambresis (UVHC), Laboratory of Ceramic Materials and Associated Processes (LMCPA), Boulevard Charles de Gaulle, 59600 Maubeuge, France

17:30 **Crystallization processes in bicomponent thin film depositions: towards a realistic Kinetic Monte-Carlo simulation** **Q PM.51**
D. Martínez-Martínez, C. Herdes, Lourdes F. Vega
Center of Physics of the University of Minho, Campus de Azurem, 4800-058 Guimaraes, Portugal, Department of Chemical Engineering, University of Bath. United Kingdom, Gas Research Center and Chemical Engineering Department. The Petroleum Institute. P.O. Box 2533. Abu Dhabi. United Arabs Emirates.

17:30 **Annealing effect on the aluminum thin layer** **Q PM.52**
Abdelkrim Fedala, Ines Lachebi, and Mohamed Kechouane
USTHB, Faculté de Physique, Laboratoire de physique des matériaux, Equipe Couches Minces et Semiconducteurs, B.P. 32, El Alia, 16111 Bab-ezzouar, Algers, ALGERIA

17:30 **Corrosion resistance evaluation of Diamond-like Carbon Coatings** **Q PM.53**
T. Maerten, C. Jaoul, C. Le Niniven, F. Meunier, O. Jarry, P. Tristant
Oerlikon Balzers France & Université de Limoges-SPCTS, Université de Limoges-CNRS-SPCTS, Université de Limoges-CNRS-SPCTS, Oerlikon Balzers France, Oerlikon Metaplas, Université de Limoges-CNRS-SPCTS

17:30 **Structure and Mechanical Properties of Superhard Multilayer CrN/MoN coatings** **Q PM.54**
B.O. Postolnyi1,2, V.M. Beresnev3, G. Abadias4, L. Rebouta5, J.P. Araujo2, A.D. Pogrebnjak1
1Sumy State University, 2 Rymskogo-Korsakova st., 40007 Sumy, Ukraine 2IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Department of Physics and Astronomy, Faculty of Science, University of Porto, 687 Campo Alegre st., 4169-007 Porto, Portugal 3V.N. Karazin Kharkiv National University, 4 Svobody Sq., 61022 Kharkiv, Ukraine 4Institut Pprime, Department of Physics and Mechanics of Materials, CNRS - University of Poitiers - ENSMA, 11 Blvd. M. et P. Curie, BP 30179, F86962, Chasseneuil-Futuroscope cedex, France 5Centre of Physics, University of Minho, Alameda da Universidade, 4804-533 Guimarães, Portugal

Characterization methods at the nanoscale of nano-engineered thin films 2 : J.F. Pierson + T. Belmonte

08:30 **Opportunities to characterize thin films by advanced TEM** **Q 4.1**
T. EPICIER
Univ Lyon, INSA-Lyon, MATEIS, CNRS UMR 5510, F-69621 Villeurbanne, France

09:00 **DEPOSITING LOCALIZED COATINGS BY PLASMA WITH A SUB-MICROMETRIC RESOLUTION** **Q 4.2**
M. HAACKE, A. BOILEAU, NOEL, T. GRIES, T. BELMONTE
Université de Lorraine, Institut Jean Lamour, Département CP2S, UMR CNRS 7198, Parc de Saurupt, Nancy, F-54011, France.

09:15 **Reactive sputter deposition of high entropy alloys** **Q 4.3**
R. Dedoncker1, B. Braeckman1, N. Martin2, P. Djemia3, L.Belliard4, G. Abadias5, D. Depla1
1: Department of Solid State Sciences, Ghent University, Krijgslaan 281 (S1), 9000 Gent, Belgium 2: Institut FEMTO-ST, UMR CNRS 6174–Université de Franche Comté – CNRS – ENSMM – UTBM, 15B, Avenue des montboucons, 25030 Besançon Cedex, France. 3: Laboratoire des Propriétés Mécaniques et Thermodynamiques des Matériaux, UPR CNRS 9001, Université Paris-Nord, 99 av.J.B. Clément, 93430 Villetaneuse Cedex, France 4: INSP UPMC, Institut des NanoSciences de Paris, 4 Place Jussieu, 75252 Paris Cedex 05, France 5: Institut P', Département Physique et Mécanique des Matériaux, CNRS – Université de Poitiers – ENSMA, SP2MI, Téléport 2, BP 30179, Futuroscope-Chasseneuil, France

09:30 **Thin graphitic films obtained on Diamond Like Carbon by a combination of catalytic and thermal treatments** **Q 4.4**
F. Le Normand1, F. Antoni1 , N. Boubiche1, D. Muller1, S. Zafeiratos2, W. Luo2,
1: ICube, MaCEPV, 23 rue du Loess, 67037 Strasbourg France
2: ICPEES, ECPM, 25 rue Becquerel, 67087 Strasbourg Cedex 2, FRANCE

09:45 **Properties of fluorine-free tungsten thin film and its application as low resistance liner** **Q 4.5**
Romain Famulok*, Philippe Rodriguez*, Yannick Le Friec**, Jean-Philippe Reynard**, Karen Dabertrand**, Benoit-Noel Bozon***, Sylvie Favier*,**, Yann Mazel*, Emmanuel Nolot*, Bernard Previtali*, Patrice Gergaud*, Fabrice Nemouchi*
* Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LETI, MINATEC Campus, F-38054 Grenoble, France. ** STMicroelectronics, 850 rue Jean Monnet, BP 16, 38926 Crolles, France *** Applied Materials France, 864 chemin des Fontaines, 38190 Bernin, France

10:00 **Coffee break**

10:30 **Differences in morphology of amorphous CVD and PVD silicon thin films, newest insides in characterization** **Q 4.6**
Sebastian Gerke 1), Marilyne Sousa 1), Marina Krumova 2), Stefanie Ebert 2), Reinhart Job 3), Barbara Terheiden 2)
1) IBM Research – Zurich, 2) University of Konstanz, 3) Münster University of Applied Sciences

10:45 **A significant enhancement of the deposition rate in reactive ac magnetron sputtering of highly optically transparent ZrO2 films** **Q 4.7**
Jiri Rezek,Jaroslav Vlcek,Jiri Houska,Jiri Capek,Pavel Baroch
University of West Bohemia, Univerzitni 8, 30614 Plzen, Czech Republic

11:00 **Microstructural properties of Ti2AlN MAX-Phase thin films, synthesized by multilayer PVD techniques** **Q 4.8**
Lukas Gröner, Eduart Reisacher, Eberhard Nold, Alexander Fromm, Frank Meyer, Chris Eberl, Frank Burmeister
Fraunhofer IWM Freiburg

11:15 **Piezoelectric and structural properties of c-axis textured aluminium scandium nitride thin films with high scandium content** **Q 4.9**
Stefan Mertin, Vladimir Pashchenko, Bernd Heinz, Oliver Rattunde, Gabriel Christmann, Marc-Alexandre Dubois, Sylvain Nicolay, Paul Muralt
EPFL, EPFL, Evatec, Evatec, CSEM, CSEM, CSEM, EPFL 1 Electroceramic Thin Films Group, Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland 2 Evatec AG, Hauptstrasse 1a, CH-9477 Trübbach, Switzerland 3 CSEM, Rue Jaquet-Droz 1, CH-2002 Neuchâtel, Switzerland

11:30 **Correlation between nanostructure and X-ray reflectivity of iridium coatings** **Q 4.10**
Anne-Catherine Probst 1, Thorsten Döhring 1, Florian Emmerich 1, Manfred Stollenwerk 1, Franziska Riethmüller 1, Veronika Stehlíková 2, Mingwu Wen 3, Laura Proserpio 4
1: Aschaffenburg University of Applied Sciences, D-63743 Aschaffenburg, Germany, 2: Czech Technical University in Prague, CZ-16627 Prague 6, Czech Republic, 3: Institute of Precision Optical Engineering, Tongji University, Shanghai 200092, China, 4: Max-Planck-Institute for Extraterrestrial Physics, D-85748 Garching, Germany.

11:45 **High-temperature oxidation of multilayered CrAlYN coatings: implications of the presence of Y and type of steel** **Q 4.11**
T.C. Rojas, S. Domínguez-Meister, M. Brizuela, J.C. Sánchez-López
Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), Sevilla, Spain, Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), Sevilla, Spain,TECNALIA, Donostia-San Sebastián, Spain, Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), Sevilla, Spain,

12:00 **Light Scattering in Thermochromic Particulate VO2 Coatings** **Q 4.12**
J. Montero, Y.-X. Ji, C. G. Granqvist, G. A. Niklasson
J. Montero - Institute for Energy Technology, P.O. Box 40, NO-2027 Kjeller, Norway Y.-X. Ji, C. G. Granqvist, G. A. Niklasson - Department of Engineering Sciences, The Ångström Laboratory, Uppsala University,P. O. Box 534, SE-75121 Uppsala, Sweden

12:15 **Lunch**

Surface modification/functionalization : Gerry van der Kolk + Peter Panjan

14:00 **Grain-boundary and interface design for fracture toughness enhancement of nanostructured films** **Q 5.1**
Rostislav Daniel, Christian Mitterer, Jozef Keckes
Montanuniversität Leoben, Montanuniversität Leoben, Montanuniversität Leoben

14:30 **Preparation and characterization of flexible carbon nanotubes/Nafion® transparent conductive films** **Q 5.2**
Qi Tianjiao,Wang Hui , Wang Lin, Yang Fang
Institute of Chemical Materials China Academy of Engineering Physics

14:45 **Surface Modification and patterning of Polyimide Film via Ion Implantation** **Q 5.3**
Wenjia Shi, ,Kun Tian,Chungang Guo, Guo-an Cheng, Xiaolin Wu, Ruiting Zheng College of Nuclear Science and Technology Beijing Normal University Beijing, China, 100875

15:00 **Multi-functional fluorocarbon plasma polymer thin films fabricated by large area roll-to-roll sputtering** **Q 5.4**
Sang-Jin Lee, Sung Hyun Kim, Mac Kim, Tae-Woon Kang, Han-Ki Kim, Seong Keun Cho, Dong Seok Ham, Yong Suk Yang, Jae Heung Lee
Sang-jin Lee, Sung Hyun Kim, Mac Kim, Tae-Woon Kang, Seong Keun Cho, Dong Seok Ham, Jae Heung Lee : Korea Research Institute of Chemical Technology , Sung Hyun Kim, Mac Kim, Yong Suk Yang : Pusan National University , Han-Ki Kim : Kyung Hee University

15:15 **Fractionation of cellulose nanocrystals: from liquid crystal self-assembly to the formation of structural films** **Q 5.5**
Camila Honorato-Rios, Jan Lagerwall
University of Luxembourg, Physics & Materials Science Research Unit, Experimental Soft Matter Physics Group

15:30 **Radiation Effects on Mechanical Properties of Nanostructured ZrN Thin Films** **Q 5.6**
D. Craciun1, D. Pantelica2, P. Ionescu2, B. S. Vasile3, D. Cristea4 and V. Craciun1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania, 2Horia Hulubei National Institute for Physics and Nuclear Engineering, Magurele, Romania, 3Polytechnic University Bucharest, Bucharest, Romania, Transilvania University, Brasov, Romania

15:45 **SURFACE LAYER NANOSTRUCTURATION IN LOW-TEMPERATURE (LT) GAS ATMOSPHERE FOR TAYLORING SURFACE PROPERTIES OF INOX ALLOYS** **Q 5.7**
Corneliu Sarbu
National Institute of R&D for Materials Physics, Magurele, Romania

16:00 **Coffee break**

Nanostructured coatings or nano-engineered thin film architectures 1 : Ulf Helmersson + M. Fenker

16:30 **Vapor phase nanoparticle synthesis** **Q 6.1**
Ulf Helmersson, Rickard Gunnarsson, Sebastian Ekeroth, Sadegh Askari, Nils Brenning
Department of Physics, Linköping University, SE-581 83 Linköping, Sweden

17:00 **Large-scale, multifunctional coatings for automotive industry: a critical insight on anti-fogging properties** **Q 6.2**
Guillaume Naudin†*, Karima Bouamama*, Stéphane Delalande*, David Grosso†, Cédric Boissière†, Marco Faustini†.
†Chimie de la Matière Condensée de Paris, UMR UPMC-CNRS 7574, Université Pierre et Marie Curie (Paris 6), 4 place Jussieu, 75231, Paris, France, *PSA Peugeot Citroën, Direction Scientifique, Centre technique de Vélizy, route de Gisy, 78140 Vélizy-Villacoublay.

17:15 **Synthesis and analysis of electroplated Fe–Cu: from continuous to hierarchically porous films prepared by colloidal templating** **Q 6.3**
Evangelia Dislaki, Jordi Sort, Eva Pellicer
Departament de Física, Universitat Autònoma de Barcelona, E08193 Bellaterra, Spain, Institució Catalana de Recerca i Estudis Avançats (ICREA) and Departament de Física, Universitat Autònoma de Barcelona, E08193 Bellaterra, Spain, Departament de Física, Universitat Autònoma de Barcelona, E08193 Bellaterra, Spain

Poster session 2: Biological Characteristics of Biomaterials and Thin Films and Related Materials : M. Fenker + Philippe Steyer

17:30 **Interaction of Stem Cells with Metal Oxide Thin Films** **Q PT.1**
Mariya Khokhlova, Sara Bouhout, Wilfrid Prellier, Adrian David, Karim Boumédiene
Mariya Khokhlova, Laboratoire CRISMAT, CNRS UMR 6508, ENSICAEN, 6 Bvd Maréchal Juin, 14050 Caen Cedex, France, Sara Bouhout, Laboratoire BioConnect, Université de Caen Normandie, CHU Niveau 3, 14032 Caen Cedex, France, Wilfrid Prellier, Laboratoire CRISMAT, CNRS UMR 6508, ENSICAEN, 6 Bvd Maréchal Juin, 14050 Caen Cedex, France, Adrian David, Laboratoire CRISMAT, CNRS UMR 6508, ENSICAEN, 6 Bvd Maréchal Juin, 14050 Caen Cedex, France, Karim Boumédiene, Laboratoire BioConnect, Université de Caen Normandie, CHU Niveau 3, 14032 Caen Cedex, France,

17:30 **Titanium Nitride based Protective Coatings for Metallic Bipolar Plates of Polymer Electrolyte Membrane Fuel Cells** **Q PT.2**
Jung-Dae Kwon, Woo Jae-Lee, and Se-Hun Kwon
Korea Institute of Materials Science, Pusan National University, and Pusan National University

17:30 **Improving adhesion at alumina/zinc interfaces by metal alloy buffers** **Q PT.3**
Ha-Linh Thi Le1, 2, 3, Jacek Goniakowski1, 2, Claudine Noguera1, 2, Alexey Koltsov3, and Jean-Michel Mataigne3
1CNRS, UMR7588, Institut des Nanosciences de Paris, F-75005 Paris, France
2Sorbonne Universités, UPMC Univ Paris 06, UMR7588, INSP, F-75005 Paris, France
3ArcelorMittal Maizières Research, voie Romaine, F-57280, Maizières lès Metz, France

17:30 **Hydroxyapatite-collagen-silver coatings on titanium implants by electrochemical deposition** **Q PT.4**
Gabriela Ciobanu (1), Maria Harja (1), Octavian Ciobanu (2)
(1) “Gheorghe Asachi” Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Prof. dr. docent Dimitrie Mangeron Rd., no. 63, 700050, Iasi, Romania, (2) “Grigore T. Popa” University of Medicine and Pharmacy, Faculty of Medical Bioengineering, Universitatii Str., no. 16, 700115, Iasi, Romania

17:30 **Experimental evidence of formation of a fcc superdense nonmagnetic Co in a Co thin film** **Q PT.5**
1. Nasrin Banu* 2. B. N. Dev 3. Surendra Singh 4. S. Basu 5. B. Satpati 6. A. Roy
1,2: Department of Materials Science, Indian Association for the Cultivation of Science, 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata 700032, India. 3,4: Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai 400085, India. 5: Surface Physics and Material Science Division, Saha Institute of Nuclear Physics, 1/AF, Bidhannagar, Kolkata 700064, India. 6: Microelectronic Research Center, The University of Texas at Austin,10100 Burnet Road, Bldg 160, MER 1.606J, Austin, Texas 78758, USA.

17:30 **Synthesis of phenylalanine-based sequence-defined compatibilizers for fiber-reinforced composite materials** **Q PT.6**
J. LOUWSMA (a,b), S. JOLY (a), J.-F. LUTZ (b), D. CHAN-SENG (b)
(a) PSA Groupe, Site Vélizy, Chemin de Gisy, 78943 Vélizy-Villacoublay, France (b) Université de Strasbourg, CNRS, Institut Charles Sadron, F 67000 Strasbourg, France

17:30 **Microstructure and bio- tribological properties characterization of the polytetrafluorethylene (PTFE) coatings on PEEK substrate** **Q PT.7**
L. Major -1, J. M. Lackner -2, M. Kot -3, B. Major -1
1- Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Cracow, Poland, 2- JOANNEUM RESEARCH –Materials, Institute for Surface Technologies and Photonics, Niklasdorf, Austria, 3- Laboratory of Surface Engineering and Tribology, Faculty of Mechanical Engineering and Robotics, AGH University of Science and Technology, Cracow, Poland

17:30 **Liquid precursor delivery system for thin-film encapsulation layer using cyclic-chemical vapor deposition system** **Q PT.8**
Bum Ho Choi, Moon Hee Kang, Eun Mi Kim, and Jong Ho Lee
Center for Nano-Photonics Convergence Technology, Korea Institute of Industrial Technology

17:30 **Bioanalytical platforms using PDMS based Superomniphobic surface** **Q PT.9**
Heetak Han, Jungmok Seo,Sera Shin, Hyunchul Kim, Taeyoon Lee
Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University

17:30 **Study of wear and corrosion behavior of cathodic plasma electrolytic deposition of zirconia–hydroxyapatite on Ti and 316L SST** **Q PT.10**
Shabnam Karimi(a,b), Fatemeh Mahzoon(a), Kamal Janghorban(a), Siroos Javadpour(a)
a) Shiraz University, Department of Materials Science and Engineering b) Austrian Institute of Technology, Department of Biosensors Technology

17:30 **Synthesis and characterization of Gd-DTPA complex-functionalized magnetic nanoparticles for biomedical applications** **Q PT.11**
S.I. Eguía-Eguía*, O. Fuentes-Ramírez*, J. Santoyo-Salazar**, J.R. Aguilar-Hernández***, P. Maldonado-Altamirano***, L. Gildo-Ortiz*
*Doctorado en Nanociencias y Nanotecnología, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, CINVESTAV-IPN, Av. IPN 2508, Zacatenco, 07360, Mexico **Departamento de Física, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, CINVESTAV-IPN, Av. IPN 2508, Zacatenco, 07360, Mexico ***Instituto Politécnico Nacional, Av. Luis Enrique Erro S/N, Zacatenco, 07738, México

17:30 **Fluoropolymer surface modification by H2 plasma for enhanced UV replication of microlenses** **Q PT.12**
Brigita Abakevičienė(1,2), Dalius Jucius(1), Viktoras Grigaliūnas(1), Algirdas Lazauskas(1), Saulius Smetona(3), Sigitas Tamulevičius(1)
(1) Institute of Materials Science, Kaunas University of Technology, Barsausko str. 59, LT-51423 Kaunas, Lithuania (2) Department of Physics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania (3) Qorvo, 7628 Thorndike Road Greensboro, NC 27409 United States

17:30 **Mechanical, electrochemical and biological investigations of Cr-based multilayers used for improving the bond strength of dental** **Q PT.13**
M. Dinu (1), T. Hauffman (2), A. Vladescu (1), A. Hubin (2), M. Braic (1)
(1) National Institute for Optoelectronics (INOE 2000), 409 Atomistilor St., Magurele, Romania, (2) Vrije Universiteit Brussel, Department of Materials and Chemistry, Research Group Electrochemical and Surface Engineering, Pleinlaan 2, 1050 Brussels, Belgium

17:30 **Investigation of Effect of Laser on Surface of Atomically Thin MoS2** **Q PT.14**
Koo-Hyun Chung, Khac Bien Cuong Tran
School of Mechanical Engineering, University of Ulsan, Ulsan 680-749, Republic of Korea

17:30 **Development of a new bio-compostable thin film for food packaging with in-line plasma treatment** **Q PT.15**
Marta Tessarolo 1-2, Elisabetta Rotante 1, Nicole Ticchi 1, Filippo Capelli 1, Beatrice Fraboni 2, Maurizio Fiorini 3, Vincenza Andrisano 4, Vittorio Colombo 5, Santina Romani 6
1 Interdepartmental Centre for Industrial Research – Advanced Mechanics and Materials (CIRI – MAM), 2 Department of Physics and Astronomy, University of Bologna, Bologna, Italy , 3 Department of Civil, Chemical, Environmental, and Materials Engineering University of Bologna, Bologna, Italy, 4 Department for Life Quality Studies University of Bologna, Bologna, Italy, 5 Department of Industrial Engineering University of Bologna, Bologna, Italy, 6 Dipartimento di Scienze e Tecnologie AgroAlimentari University of Bologna, Bologna, Italy,

17:30 **Graphene growth simulations on metal surfaces using an adhesion model based on Moiré-patterns** **Q PT.16**
Márton Szendrő, Péter Süle
Hungarian Academy of Sciences, Centre for Energy Research, Institute for Technical Physics and Materials Science, Konkoly-Thege Miklós u. 29-33, Budapest, Hungary

17:30 **Integrating Carbon Nanotube Forests into Polysilicon MEMS: Growth Kinetics, Mechanisms, and Adhesion** **Q PT.17**
Stephen M. Ubnoske (1), Erich J. Radauscher (2), Eric R. Meshot (3), Brian R. Stoner (4), Charles B. Parker (2), and Jeffrey T. Glass (2)
(1): Department of Mechanical Engineering and Materials Science, Duke University, Durham, NC 27708, USA (2): Department of Electrical and Computer Engineering, Duke University, Durham, NC 27708, USA (3): Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, Livermore, CA 94551, USA (4): Research Triangle Institute (RTI) International, Durham, NC 27709, USA

17:30 **Optoelectronic chlorine gas sensor based on ITO/ZnO/Cu2O heterostructure** **Q PT.18**
Kudryashov Dmitry, Monastyrenko Anatoly, Gudovskikh Alexander
St. Petersburg National Research Academic University RAS

17:30 **Formation and study of Ta, Mo and Ag nanocluster films for highly efficient thermoelectic materials development** **Q PT.19**
P.V. Borisyuk, Yu.Yu. Lebedinskii, O.S. Vasilyev, T.I. Kozlova, V.V. Fetisov
National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

17:30 **Experimental studies of thorium ions implantation from pulse laser plasma into thin silicon oxide layers** **Q PT.20**
P.V. Borisyuk, Yu.Yu. Lebedinskii, O.S. Vasilyev, Tkalya E.V.
National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

17:30 **Magnetic studies on superconductor-Ferromagnet hybrid structures** **Q PT.21**
T S SURAJ, K SETHUPATHY, M S RAMACHANDRA RAO
DEPARTMENT OF PHYSICS INDIAN INSTITUTE OF TECHNOLOGY MADRAS, INDIA

17:30 **On demand Drug-Eluting, Cancer Cell-Repellent Multifunctional Stent** **Q PT.22**
Sori Lee1,2, Gyoyeon Hwang3,4, Haeleen Hong1,2, Jiyeon Lee3,4* and Tae-il Kim1,2,*
1 School of Chemical Engineering, Sungkyunkwan University (SKKU), Suwon 440-746, Korea 2 Center for Neuroscience Imaging Research, Institute of Basic Science (IBS), Suwon 440-746, Korea 3 Chemical Kinomics Research Center, Future Convergence Research Division, Korea Institute of Science and Technology (KIST), Seoul 02792, Korea 4 Biological Chemistry, Korea University of Science and Technology, Daejeon 34113, Korea Correspondence: jylee@kist.re.kr, taeilkim@skku.edu

17:30 **Influence of Complexing Agent on ZnS Buffer Layer Prepared by Chemical Bath Deposition** **Q PT.23**
Taewoo EOM, Sang Hyeop Lee, Chan Moon Song, Sang Yong Park, Donggun Lim*
Department of IT convergence, Korea National University of Transportation

17:30 **Comparative study of Mg, Al and TiN coatings on Cu by pack cementation process** **Q PT.24**
D. Stathokostopoulos, D. Chaliampalias, N. Pliatsikas, S. Kassavetis, E. Pavlidou, P. Patsalas, S. Logothetidis, K. Chrissafis, G. Vourlias
Department of Physics, Aristotle University of Thessaloniki

17:30 **Highly-textured sputtered ScxAl1-xN thin films for surface acoustic wave applications.** **Q PT.25**
Florian Bartoli, Philippe Pigeat, Thierry Aubert, Omar Elmazria, Pascal Boulet, Jaafar Ghanbaja.
Florian Bartoli(1,2), Philippe Pigeat(2), Thierry Aubert(1,3), Omar Elmazria(2), Pascal Boulet(2), Jaafar Ghanbaja(2). 1. CentraleSupélec, Laboratoire LMOPS, Metz, France 2. Institut Jean Lamour, UMR 7198 CNRS-Université de Lorraine, Vandoeuvre-lès-Nancy, France 3. Laboratoire SYMME, Université Savoie Mont Blanc, Annecy-le-Vieux, France

17:30 **The Formation of Biocompatible Hydroxyapatite Coatings Reinforced with Carbon Nanotubes** **Q PT.26**
S.I. Sidorenko1, Ie.V. Ivashchenko1, G.G.Lobachova1, V.I. Panarin2, O.M. Hubina1, V.V. Yanchuk1
1 Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine, 2 G. V. Kurdyumov Institute for Metal Physics of the National Academy of Science of Ukraine.

17:30 **Extraction of sub-gap density of states in AOS thin-film transistor from optical response of C-V characteristics** **Q PT.27**
Yen-Chang Chiang 1, Shun-Huei Wang 1, Guan-Ting Hou 1, Jeng-Ting Li 1, Jiann-Shing Jeng 2, Jen-Sue Chen 1
1 Department of materials science and engineering, National Cheng Kung University, Tainan 70101, Taiwan, 2 Department of Materials Science, National Tainan University, Tainan 70005, Taiwan

17:30 **Glass-forming ability of ternary Zr-Cu-Ag TFMGs: an empirical study** **Q PT.28**
A. Etiemble 1, G. Nkou Bouala 2, C. Der Loughian 2, P. Steyer2, J.F. Pierson1
1 Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Parc de Saurupt, 54011 Nancy, France 2Univ. Lyon, INSA-Lyon, MATEISUMR CNRS 5510, 21 Avenue Jean Capelle, 69621, Villeurbanne cedex, France

17:30 **Synthesis of sputtered SiC and Mg doped hydroxyapatite coatings for biomedical applications** **Q PT.29**
Diana Maria Vranceanu1, Mihaela Dinu2, Funda Ak Azem3, Radwan Abdulgader4, Viorel Braic2, Isil Birlik3, Adrian Kiss2, Cosmin Mihai Cotrut1, Robyn Booysen5, Mariana Braic2, Thomas K. Monsees4, Alina Vladescu2
1University Politehnica of Bucharest, 313 Spl. Independentei, Bucharest, Romania, 2National Institute for Optoelectronics, 409 Atomistilor St., Magurele, Romania, 3 Dokuz Eylul University, Engineering Faculty, Metallurgical and Materials Engineering Department, Tinaztepe Campus, Izmir, Turkey, 4Department of Medical Biosciences, University of the Western Cape, Bellville, South Africa

17:30 **Influence of Cr additions on the structure and oxidation resistance of multilayered TiAlCrN films** **Q PT.30**
M. Danek, F. Fernandes, A. Cavaleiro, T. Polcar
Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic, SEG-CEMUC, Department of Mechanical Engineering, University of Coimbra, Rua Luís Reis Santos, 3030-788 Coimbra, Portugal,, SEG-CEMUC, Department of Mechanical Engineering, University of Coimbra, Rua Luís Reis Santos, 3030-788 Coimbra, Portugal, nCATS, Highfield Campus, University of Southampton, Southampton SO17 1BJ United Kingdom

17:30 **Growth and Characterization of MOCVD Grown Indium Gallium Arsenide Thin Film on Indium Phosphide Buffered Silicon Substrate** **Q PT.31**
Sisir Chowdhury, Pallab Banerji
Indian Institute of Technology Kharagpur

17:30 **Tailoring nucleation and stress magnitude during surfactant-mediated metallic film growth** **Q PT.32**
C. Furgeaud, A. Michel, C. Mastail, L. Simonot, G. Adadias
Institut Pprime, UPR 3346, Université de Poitiers-CNRS-ENSMA, France

17:30 **Self-cleaning Indium-based coating for remove hydrocarbon-polymer film from electrode systems surface** **Q PT.33**
Viktor S. Gurov, Michael V. Dubkov, Sergey M. Karabanov, Dmitry V. Suvorov, Yulia M. Stryuchkova, Gennady P. Gololobov, Dmitry Yu. Tarabrin
Ryazan State Radio Engineering University, Ryazan, Russia

17:30 **Stretchable Strain Sensor with Near-field Communication Capabilities for Human Motion Monitoring** **Q PT.34**
Yu Ra Jeong, Jeonghyun Kim, Sang Min Won, Geumbee Lee, Sang Woo Jin, Soo Yeong Hong, John A. Rogers, Jeong Sook Ha
1 Department of Chemical and Biological Engineering, Korea University, Seoul, Korea 2 Department of Materials Science and Engineering, Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana 3 KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Korea

17:30 **Antimicrobial surfaces obtained by atmospheric pressure plasma deposition of Ag-HMDSO based nanocomposites** **Q PT.35**
M.D. Ionita, E.R. Ionita, V. Satulu, B. Mitu, G. Dinescu
National Institute for Laser, Plasma and Radiation Physics Atomistilor 409 Str., 077125 Magurele, Bucharest, Romania

17:30 **Facile Synthesis of Tunable Nanostructured Plasmonic Templates by Electroless Deposition** **Q PT.36**
N. Pliatsikas, G. Vourlias, P. Patsalas
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece

17:30 **Functional uv coating composite for steel coating** **Q PT.37**
Hye-Jin Yoo
Surface Technology Research Group., POSCO Technical Research Laboratories 8, Pokposarang-gil, Gwangyang-si, Jeolanam-do, South Korea

17:30 **Influence of Al and Y content in the oxidation resistance of CrAlYN protective coatings for high temperature applications** **Q PT.38**
T.C. Rojas, S. Domínguez-Meister, M. Brizuela, J.C. Sánchez-López
Instituto de Ciencia de Materiales de Sevilla (CSIC- Univ. Sevilla), Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), TECNALIA, Mikeletegui Pasealekua, 2 20009 Donostia-San Sebastián, Spain, Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla) Avda. Américo Vespucio 49, 41092-Sevilla, Spain,

17:30 **Fabrication of non-hexagonal close packed colloidal array on a substrate by transfer** **Q PT.39**
Meneka Banik, Rabibrata Mukherjee
Instability and soft patterning laboratory, Department of Chemical Engineering, Indian Institute of Technology Kharagpur, Kharagpur ? 721302, India

17:30 **Synthesis and Properties of Amphiphilic Organoclays by Poly(oxyalkylene)-segmented Amine-salts as Modifiers** **Q PT.40**
Jau-Yu Chiou, Yong-Hsiang Peng and Jiang-Jen Lin
National Taiwan University

17:30 **Bio-based hybrid nanostructures for antioxidant and antimicrobial coatings** **Q PT.41**
Marcela Elisabeta Barbinta-Patrascu(a), Stefan Marian Iordache(b), Ana Maria Iordache(b), Nicoleta Badea(c), Camelia Ungureanu(c), Mihaela Bacalum(d), Florina Lucica Zorila(d), Ioan Stamatin(b)
(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)Horia Hulubei National Institute of Physics and Nuclear Engineering - IFIN HH, IRASM Multipurpose Irradiation Facility, Magurele, Ilfov, Romania

17:30 **Fabrication of Surface Acoustic Wave based wireless NO2 gas sensor** **Q PT.42**
Lokesh Rana, Reema Gupta, Monika Tomar, Vinay Gupta
Department of Physics and Astrophysics, University of Delhi, Delhi-110007, INDIA, Department of Physics and Astrophysics, University of Delhi, Delhi-110007, INDIA, Physics Department, Miranda House, University of Delhi, Delhi-110007, INDIA, Department of Physics and Astrophysics, University of Delhi, Delhi-110007, INDIA,

17:30 **Growth of ZnO columnar nanostructures for carbon monoxide gas sensing application** **Q PT.43**
Avneet Singh, Anjali Sharma, Monika Tomar, Vinay Gupta
Department of Physics and Astrophysics, University of Delhi, Delhi, India, Physics Department, ARSD College, University of Delhi, Delhi, India, Physics Department,Miranda House, University of Delhi, Delhi, India, Department of Physics and Astrophysics, University of Delhi, Delhi, India

17:30 **Hydrogen etching mechanisms in silicon-containing interlayers to improve DLC adhesion on steel in low temperatures** **Q PT.44**
Leonardo Mathias Leidens, Ângela Elisa Crespi, Fernando Alvarez, Carlos Alejandro Figueroa
Universidade de Caxias do Sul – UCS and CAPES – Ministério da Educação, Brazil, Universidade de Caxias do Sul – UCS and CAPES – Ministério da Educação, Brazil, IFGW-UNICAMP, Brazil, Universidade de Caxias do Sul – UCS and Plasmar Tecnologia, Brazil

17:30 **PTFE Nanocoated Surface for Sustainable Cylinderical Water Triboelectric Nanogenerator** **Q PT.45**
Jihoon Chung, Sukyung Lee, Dongseob Kim, Yong Tae Park, and Sangmin Lee
Chung-Ang University, Chung-Ang University, Korea Institute of Industrial Technology, Myongji University, Chung-Ang University

17:30 **The solid-phase optical sensor films for fluorescent and SERS-recognition and determination of neurotransmitters in biomaterials** **Q PT.46**
I.A. Veselova, M.I. Makedonskaya, O.E. Eremina, A.V. Sidorov, S.N. Kalmykov, T.N. Shekhovtsova, E.A. Goodilin
Lomonosov Moscow State University, National Research Centre «Kurchatov Institute»

17:30 **Fabrication of high resolution nanoribbons of functional materials by electrospinnanolithography (ESPNL)** **Q PT.47**
Nuri Burak Kiremitler, Sami Pekdemir, ?lker Törün, Serdar Önses
Erciyes University Department of Material Science and Engineering Erciyes Universty Nanotechnology Research Center (ERNAM)

17:30 **State-of-the-art in Organic Bioelectronics and Nanomedicine targeting Atherosclerosis** **Q PT.48**
Fotini Pappa, Varvara Karagkiozaki, Stergios Logothetidis
Nanomedicine Group, Laboratory for &#8220,Thin Films, Nanobiomaterials, Nanosystems and Nanometrology&#8221, (LTFN), Department of Physics, Aristotle University of Thessaloniki, Greece

17:30 **The origin of martensitic transition in Heusler alloy Ni-Mn-In thin films** **Q PT.49**
A. Grunin, A. Goikhman, K. Maksimova, A. Gloskovskii
Immanuel Kant Baltic Federal University, 236041 Kaliningrad, Russian Federation DESY Photon Science, Deutsches Elektronen-Synchrotron, 22603 Hamburg, Germany

New energetic plasma processes and related advanced coatings for energy conversion, saving and storage : Sven Ulrich + T. Polcar

08:30 **State of the art of thin film Lithium ion batteries and their application potantial** **Q 7.1**
Sven Ulrich, Klaus Seemann, Harald Leiste, Michael Stüber
Karlsruhe Institute of Technology – KIT, Institute for Applied Materials – IAM, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

09:00 **DESIGN OF HIGH EFFICIENCY AMORPHOUS SILICON SOLAR CELLS** **Q 7.2**
S M Iftiquar and Junsin Yi
College of Information and Communication Engineering, Sungkyunkwan University, Suwon, 440-746, Korea

09:15 **Assessment of high-K dielectric materials deposited by evaporation and Atomic Layer Deposition for high power capacitive RF MEMS** **Q 7.3**
G. Croizier, P. Martins, M. Le Baillif, R. Aubry, S. Bansropun, M. Fryziel, N. Rolland, A. Ziaei
G. Croizier , P. Martins , M. Le Baillif , R. Aubry , S. Bansropun , A. Ziaei Thales Research and Technology, F-91767, Palaiseau Cedex, France M. Fryziel , N. Rolland Institut d'Electronique de Microélectronique et de Nanotechnologie, F-59652, Villeneuve d'Ascq Cedex, France

09:30 **Ultrasonic spraycoating of sol(ution)-gel precursors for multimetal oxides with application in 3D thin film lithium ion batterie** **Q 7.4**
A. Hardy, Marlies K. Van Bael
UHasselt, Institute for Materials Research, Inorganic and Physical Chemistry and imec, division imomec, Agoralaan, Diepenbeek, Belgium

09:45 **Ultra-high thermally stable spectrally selective TiAlN/AlN coatings for solar thermal applications** **Q 7.5**
Maryna Bilokur, Angus Gentle, Matthew Arnold, Geoff Smith, Michael Cortie
Institute of nanoscale technology (INT), University of Technology of Sydney (UTS)

10:00 **Coffee break**

10:30 **Towards Lifetime Predictive Dielectric Charging Model for Metal-Insulator-Metal Structures** **Q 7.6**
Anne-Charlotte Amiaud, Aude Leuliet, Julien Nagle, Brigitte Loiseaux, Paolo Martins, Raphaël Aubry, Stéphane Holé
Thales Research & Technology, Palaiseau, France , LPEM – CNRS, Sorbonne Universités, UPMC Univ. Paris 6, PSL Research University, Paris, France

10:45 **Nanostructured Al/Ni Film and Its Application in High current-carrying device** **Q 7.7**
Lv Junjun, Wang Wanjun, Guo Fei, He Xiaodong
Institute of Chemical Materials, CAEP

11:00 **Midinfrared surface enhanced absorption spectroscopy with 1-dimensional highly Si-doped InAsSb nano-antennas** **Q 7.8**
M.J. Milla, F. González-Posada, L. Cerutti, F. Barho, M. Bomers, E. Tournié and T. Taliercio
M.J. Milla, F. González-Posada, L. Cerutti, F. Barho, M. Bomers, E. Tournié and T. Taliercio Université de Montpellier, IES, UMR 5214, F-34000, Montpellier, France, CNRS, IES, UMR 5214, F-34000, Montpellier, France

11:15 **Enhancement of optoelectronic properties on indium tin oxide layers by co – sputtering of silver nanoparticles.** **Q 7.9**
E. G-Berasategui, N. Bolaños, L. Mendizábal J. Barriga
IK4-TEKNIKER, Research Centre, c/ Iñaki Goenaga, 5, 20600 Eibar, Guipuzcoa, Spain

11:30 **Functional multilayer Ag-ZrO2 cermet coatings spray deposited onto galvanized steel sheet** **Q 7.10**
R. Romero, F. Martin, J.R. Ramos-Barrado, D. Leinen
Lab of Materials y Surfaces, Applied Physics & Chemical Engineering Departments, University of Malaga, Faculty of Science, E-29071 Málaga, Spain

11:45 **Properties of silicon carbonitride films deposited by reactive high power impulse magnetron sputtering** **Q 7.11**
Tuomas Hänninen 1, Susann Schmidt 1, Ivan G. Ivanov 2, Lars Hultman 1, Hans Högberg 1
1 Thin Film Physics Division, Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83, Sweden 2 Semiconductor Materials Division, Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83, Sweden

12:00 **Photocathodes for the next generation of Free Electron Laser** **Q 7.12**
Victor Chang, Bruno Camino, Nicholas M Harrison, Tim Noakes
Bruno Camino, Nicholas M Harrison, Imperial College of London, Tim Noakes, STFC Daresbury Laboratory

12:15 **Lunch**

Poster session 3: Nanoscience, Nanotechnology and Nanostructured Materials : Philippe Steyer + F. Vaz

13:30 **Elaboration and deposition of silver nanoparticles on porous Silicon layer to enhance the optical and electrical properties** **Q PW.1**
Marouan Khalifa, Malek Atyaoui, Hatem Ezzaouia
Semiconductor and Advanced Technology Nanostructured Laboratory, Research and Technology Centre on Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia

13:30 **Modeling crack healing rates due to capillary bridge nucleation between surfaces of nanoscale roughness** **Q PW.2**
Emrecan Soylemez, Maarten P. de Boer
Emrecan Soylemez, Department of Mechanical Engineering, Faculty of Engineering, Marmara University, Istanbul, 34722, Turkey, Maarten P. de Boer, Mechanical Engineering Department, Carnegie Mellon University, Pittsburgh, Pennsylvania, 15213, USA

13:30 **"Vanadium Oxide nanostructure thin films by Aerosol Spray Pyrolysis for gas sensing and thermochromic applications"** **Q PW.3**
S. Gavalas1,2, E. Gagaoudakis1,2, E. Aperathitis1, G. Kiriakidis1,2,3, V. Binas1,2,3
1 Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2 University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece 3 Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece

13:30 **Photothermal investigation of nanocomposite porous Silicon / Rhodamine 6G** **Q PW.4**
Skander Ktifa , N.Yacoubi , H. Ezzaouia
Photovoltaic Laboratory, Research and Technology Centre of Energy,

13:30 **Molecular ion-beam deposition on graphene: A high resolution transmission electron microscopy study** **Q PW.5**
Nilesh Vats , Stephan Rauschenbach , Wilfried Sigle , Marko Burghard , Klaus Kern, Peter A. van Aken
Max Planck Institute for Solid State Research , Stuttgart, 70569 Germany.

13:30 **Radicals and energy control for Si quantum dot nanostructures** **Q PW.6**
J. G. Han,1 B. B. Sahu,1 Y. Yin,1 J. S. Lee,1 and M. Hori2
1Center for Advanced Plasma Surface Technology (CAPST), NU-SKKU Joint Institute for Plasma Nano Materials (IPNM), Department of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, South Korea

13:30 **Synthesis and characterization of Polyurethane/Graphene oxide composite deposited on steel stainless** **Q PW.7**
E. C. Romani, S. Nardecchia, C. Vilani *, S. B. Peripolli &, Shaojun Qi +, Hanshan Dong +, F. L. Freire Jr.
Departamento de Física PUC-Rio, Rio de Janeiro, RJ, Brazil , * Departamento de Engenharia Química e de Materiais, PUC-Rio, Rio de Janeiro, RJ, Brazil, & Centro de Tecnologia SENAI Solda, Rio de Janeiro, RJ, Brazil. + School of Metallurgy and Materials, University of Birmingham, Birmingham, UK

13:30 **Residual stress formation in arced TiAlTaN/AlCrN multilayer coatings: influence of thickness, architecture, and substrate type** **Q PW.8**
W.M. Seidl1, M. Bartosik1,2, H. Bolvardi3, S. Kolozsvári4, P.H. Mayrhofer1,2
1 Christian Doppler Laboratory for Application Oriented Coating Development, TU Wien, Austria, 2 Institute of Materials Science and Technology, TU Wien, Austria, 3 Plansee Composite Materials GmbH, Germany, 4 Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein

13:30 **Phase formation and oxidation behaviour of cathodic arc evaporated AlxCr1-x and AlxCr1-xOδ thin films** **Q PW.9**
V. Dalbauer1, J. Ramm2, S. Kolozsvári3, C.M. Koller1,4, P.H. Mayrhofer1,4
1Christian Doppler Laboratory for Application Oriented Coating Development, Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, 1060 Vienna, Austria 2Oerlikon Balzers, Oerlikon Surface Solutions AG, Iramali 18, 9496 Balzers, Liechtenstein 3Plansee Composite Materials GmbH, Siebenbürgerstraße 23, 86983 Lechbruck am See, Germany 4Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, 1060 Vienna, Austria

13:30 **W-Cu thin films obliquely sputtered from two sources: pressure and shielding effects** **Q PW.10**
Raya EL BEAINOU 1, Nicolas MARTIN 1, Valérie POTIN 2, Paulo PEDROSA 1, Mohammad ARAB POUR YAZDI 1, Alain BILLARD 1
1 Institut FEMTO-ST, UMR 6174 CNRS, Université Bourgogne Franche-Comté, 15B, Avenue des montboucons 25030 BESANCON Cedex, France 2 Laboratoire ICB, UMR 6303 CNRS, Université Bourgogne Franche-Comté, 9, Avenue Alain Savary, BP 47 870, F-21078 DIJON Cedex, France

13:30 **Synthesis and characterization of highly conductive nano-particle copper ink for inkjet printing applications** **Q PW.11**
Eon Ju Lee, Ho Young Jun, Si Ok Ryu*
School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan 712-749, South Korea

13:30 **Magnetron-sputtered thick multilayer Zr(Hf)-B-(Si-)C coatings for erosion protection of steam-turbine blades** **Q PW.12**
Michal Prochazka, Veronika Simova, Jaroslav Vlcek, Radomir Cerstvy, Stanislav Haviar, Jiri Rezek, Karel Rusnak
University of West Bohemia, Univerzitni 8, 306 14 Plzen, Czech Republic

13:30 **Direct deposition of MoSe2 nanocrystals onto conducting substrates: Towards ultra-efficient electrocatalysts for HER** **Q PW.13**
Dijo Damien†, Athira Anil†, Dipanwita Chatterjee‡ and Manikoth. M. Shaijumon†
†Indian Institute of Science Education and Research Thiruvananthapuram, Thiruvananthapuram, Kerala, 695016, India. ‡Materials Research Centre, Indian Institute of Science, Bangalore, Karnataka, 560012, India.

13:30 **Optical study of quantum confinement in ultrathin ZnO nanowires grown by oxidation of Cu/Zn stacks in low-pressure afterglow** **Q PW.14**
A. Altaweel, A. Imam, J. Ghanbaja, D. Mangin, P. Miska, T. Gries, T. Belmonte
Université de Lorraine, Institut Jean Lamour, UMR CNRS 7198, Nancy, F-54011, France

13:30 **Tailoring the refractive index of films during pulsed laser deposition growth** **Q PW.15**
James A. Grant-Jacob, Stephen J. Beecher, David P. Shepherd, Robert W. Eason and Jacob I. Mackenzie
Optoelectronics Research Centre, University of Southampton, Southampton SO17 1BJ, UK

13:30 **Tungsten Nanoparticles with Different Shapes Produced by Magnetron Sputtering and Gas Aggregation** **Q PW.16**
Tomy Acsente, Raluca Florentina Negrea, Leona Cristina Nistor, Elena Matei, Ruxandra Birjega, Christian Grisolia, Gheorghe Dinescu
Tomy Acsente, Ruxandra Birjega, Gheorghe Dinescu - National Institute for Lasers, Plasma and Radiation Physics, Bucharest- Magurele, Romania Raluca Florentina Negrea, Leona Cristina Nistor, Elena Matei - National Institute for Materials Physics, Bucharest- Magurele, Romania Christian Grisolia - CEA, IRFM, Saint-Paul-lez-Durance, France

13:30 **Synthesis and Surface Chemistry of Cu Nanocrystals for Printed Electronics** **Q PW.17**
Arnau Oliva Puigdomènech, Jonathan de Roo, José Martins, Zeger Hens
Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Gent, Belgium SIM vzw, Technologiepark 935, BE-9052 Zwijnaarde, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Gent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Gent, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Gent, Belgium, NMR and Structural Analysis Unit, Ghent University, Krijgslaan 281-S4bis, 9000 Gent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Gent, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Gent, Belgium,

13:30 **Nanostructured CuS thin films for developing colored (green) solar selective absorbing coatings** **Q PW.18**
Luminita Isac, Ramona Panait, Anca Duta
Transilvania University of Brasov, Centre of Renewable Energy Systems and Recycling, Brasov, Eroilor 29, 500036, Romania

13:30 **Synchrotron Analysis for Visualization of Transformations in [FePt/Au/FePt]2x Multilayer Nanocomposits** **Q PW.19**
A.K. Orlov1, O.O. Zhabynska1, I.A. Vladymyrskyi1, S.M. Voloshko1, S.I. Sidorenko1, K. Kato2, T. Ishikawa2
1 Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine, 2 RIKEN SPring-8 Center, Japan.

13:30 **Visualization of Structure and Phase Composition Formation in V and V/Ag Nanothickness Thin Films** **Q PW.20**
A.K. Orlov1, I.O. Kruhlov1, I.A. Vladymyrskyi1, I.E. Kotenko1, S.M. Voloshko1, S.I. Sidorenko1, K. Kato2, T. Ishikawa2
1 Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine, 2 RIKEN SPring-8 Center, Japan

13:30 **Unusual electrical and magnetic behaviour of graphene and graphene oxide thin films** **Q PW.21**
Dima Cheskis
Physics Deartment, Ariel University, Israel

13:30 **Picosecond laser-produced nanostructures on glass using ITO thin film** **Q PW.22**
Nazar Farid,Gerard M O?Connor
National Centre for Laser Applications (NCLA), School of Physics,National University of Ireland Galway, Ireland

13:30 **Study of Dy doped Bi2Se3 topological insulator nanoplates** **Q PW.23**
Anu Gupta, S.K. Srivastava
Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302, India , Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302, India

13:30 **Study of Amorphous - Crystalline Phase Transition in Phase Change Materials** **Q PW.24**
Manon Gallard[1,2], Mohamed Salah Amara[2], Cristian Mocuta[1], Pierre Noé[3], Chiara Sabbione[3], Françoise Hippert[4], Stéphanie Escoubas[2], Magali Putero[2], Christophe Guichet[2], Marie-Ingrid Richard[2,5], Ariel Brenac[6], Robert Morel[6], Olivier Thomas[2]
[1] Synchrotron SOLEIL, l?Orme des Merisiers, Saint-Aubin?BP 48, 91192 Gif-sur-Yvette, France, [2] Aix-Marseille Université, CNRS, IM2NP UMR 7334, Campus de St-Jérôme, 13397 Marseille, France, [3] Université Grenoble Alpes, CEA-LETI, MINATEC campus, 17 rue des Martyrs, 38054 Grenoble, France, [4] LNCMI, CNRS-UGA-UPS-INSA, 25 rue des Martyrs, 38042 Grenoble, France, [5] ID01/ESRF, The European Synchrotron, 71 rue des Martyrs, 38043 Grenoble, France, [6] CEA/INAC, 17 rue des Martyrs, 38054 Grenoble, France

13:30 **Cold homogenization in Pt/Au/Fe nanolayers** **Q PW.25**
Arsen Hafarov, Ihor Vladymyrskyi
National technical university of Ukraine «Igor Sikorsky Kyiv Polytechnik Institute», Faculty of Physical Engineering

13:30 **Study of the microstructural thermal evolution of Zr-based TFMGs : a multiscale in situ approach** **Q PW.26**
G. I. Nkou Bouala 1, A. Etiemble 1,2, C. Der Loughian 1, C. Langlois 1, A. Malchère 1, S. Cardinal 1, J.M. Pelletier 1, J.F. Pierson 2, P. Steyer 1
1 - MATEIS Laboratory-INSA de Lyon, 21 Avenue Jean Capelle, 69621, Villeurbanne cedex, France 2 - Institut Jean Lamour, Université de Lorraine, 54011 Nancy, France

13:30 **Production and optimization of Au/CuO nanoplasmonic thin films for LSPR gas sensing applications** **Q PW.27**
Manuela Proença1,2, Joel Borges1,3, Marco S. Rodrigues1, Diogo Costa1,2, Rui P. Domingues1, Paulo Pedrosa4, Nicolas Martin4, Joao P. Dias5, Albano Cavaleiro3, Nenad Bundaleski6, Orlando M.N.D. Teodoro6, Paula Sampaio2, Filipe Vaz1
1Centro de Física da Universidade do Minho, Campus de Gualtar, Braga, Portugal 2Centro de Biologia Molecular e Ambiental, Universidade do Minho, Campus de Gualtar, Braga, Portugal, 3SEG-CEMUC, Mechanical Engineering Department, University of Coimbra, 3030-788 Coimbra, Portugal, 4Institut FEMTO-ST, UMR 6174 CNRS, Université Bourgogne Franche-Comté, 15B Avenue des Montboucons, 25030 Besançon Cedex, France, 5Instituto Pedro Nunes, Laboratório de Ensaios, Desgaste e Materiais, Rua Pedro Nunes, 3030-199 Coimbra, Portugal, 6Center for Physics and Technological Research, Physics Department, Faculty of Sciences and Technology, Universidade Nova de Lisboa, Campus de Caparica, P2829-516 CAPARICA PORTUGAL.

13:30 **Mechanistic Evaluation of the Electrochemical Reduction of Graphene Oxide by in-situ ATR-FTIR Spectroscopy** **Q PW.28**
Martin Pfaffeneder-Kmen, Günter Trettenhahn, Wolfgang Kautek
University of Vienna, Department of Physical Chemistry, Vienna, Austria

13:30 **Plasma diagnostics of cyclopropylamine/argon plasma polymerization process.** **Q PW.29**
Miroslav Michlíček, Lenka Zajíčková
Miroslav Michlíček Department of Physical Electronics, Faculty of Science, Masaryk University, Kotlářská 2, Brno 61137, Czech Republic Plasma Technologies, CEITEC – Central European Institute of Technology, Masaryk University, Kotlářská, 2, Brno 61137, Czech Republic, Lenka Zajíčková Department of Physical Electronics, Faculty of Science, Masaryk University, Kotlářská 2, Brno 61137, Czech Republic Plasma Technologies, CEITEC – Central European Institute of Technology, Masaryk University, Kotlářská, 2, Brno 61137, Czech Republic,

13:30 **Magnetic and electrical characterization of Pd1-xNix nanocomposites** **Q PW.30**
Vineeta Shukla1,* Suneel Kumar Srivastava2, Sanjeev Kumar Srivastava1
1Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur-721302, India 2Department of Chemistry, Indian Institute of Technology Kharagpur, Kharagpur-721302, India

13:30 **Study of AlxSc(1-x)N thin films deposited on MgO and Pt/TiO2/SiO2/Si substrates.** **Q PW.31**
Joris More-Chevalier, Ján Lančok, Stanislav Cichoň, Jiří Bulíř, Přemysl Fitl, Vincent Mortet, Petr Ashcheulov, Morgane Poupon, Ladislav Fekete, Gilles Poullain, Christophe Cibert.
Joris More-Chevalier, Ján Lančok, Stanislav Cichoň, Jiří Bulíř, Přemysl Fitl, Vincent Mortet, Petr Ashcheulov, Morgane Poupon, Ladislav Fekete, Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic Gilles Poullain, Christophe Cibert, Rachid Bouregba, Université de Caen Normandie, ENSICAEN, CNRS UMR 6508 CRISMAT, F-14032 Caen, France.

13:30 **Mixed phase CIGS thin films for application as absorber layer in solar cell** **Q PW.32**
S.H. Mousavi, T.S. Müller, P.W. de Oliveira
INM – Leibniz Institute for New Materials, Saarbrücken, Germany

13:30 **Tuning the silica thickness of gold shell-isolated nanoparticles for Plasmon Enhanced Phenomena on metalloporphyrin monolayers** **Q PW.33**
S.A. Camacho1, A.G. Brolo2, R.F. Aroca1,3, C.J.L. Constantino1
1) Faculdade de Ciências e Tecnologia, UNESP, Presidente Prudente, SP, Brazil 19060-900 2) Department of Chemistry, University of Victoria, Victoria, BC, Canada 3) São Carlos Institute of Physics, USP, São Carlos, SP, Brazil 13566-590

13:30 **One-step interlayer approach for adhesion improvement of multilayer diamond coatings on hardmetal tools** **Q PW.34**
S.R. Pratas (1), A.V. Girão (1), M.A. Neto (1), E. Soares (2), R.F. Silva (1), F.J. Oliveira (1)
(1) Department of Materials and Ceramic Engineering, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal, (2) DURIT - Metalurgia Portuguesa do Tungsténio, Lda. Arruamento C, 3854-909 Albergaria-a-Velha, Portugal

13:30 **Thickness Dependence of Anisotropic Magnetoresistance in Pt/Fe3O4/MgO/Ta multilayered structures** **Q PW.35**
Thi Kim Hang Pham1, Nyun Jong Lee1, Ki Hoon Kang2, Eun Sang Park3, Anny Michel4, Tae Hee Kim1*
1Department of Physics, Ewha Womans University, Seoul 120-750, Republic of Korea, 2 Department of Materials Science and Engineering, Hanyang University, Seoul 133-791, Republic of Korea, 3KU-KIST Graduate School of Converging Science and Technology, Korea University, Republic of Korea,4Départment de Physique et Mécanique des Matériaux, CNRS-Université de Poitiers-ENSMA, France

13:30 **Physical investigations on transparent conducting oxides thin films based on SnO2-ZnSnO alloys grown on sapphire substrates** **Q PW.36**
I.Saafi1, G. Schmerber2, A. Amlouk1, A.Dinia2, M. Amlouk1
1 Unité de Physique des dispositifs à Semi-conducteurs UPDS, Faculté des Sciences de Tunis, Université de Tunis El Manar, Tunisie. 2 Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504, 23 rue du Lœss, B.P. 43, 67034 Strasbourg Cedex 2, France

13:30 **Al nanoparticles production by pulsed laser dewetting of films** **Q PW.37**
P. Dub?ek, B. Pivac, N. Radi?, N. Krstulovi?, M. Bi??an and S. Bernstorff
Rudjer Boskovic Institute, Bijenicka 54, HR-10000 Zagreb, Croatia, Institute for Physics, Bijenicka 46, HR-10000 Zagreb, Croatia, Elettra-Sincrotrone Trieste, SS 14, km 163.5, Basovizza (TS), Italy

13:30 **Thickness dependance on the formation of the sputtered Fe16N2 films** **Q PW.38**
Ah Ram Kwon, Dong Won Han
Korea Institute of Industrial Technology

13:30 **Deposition of reinforced hot dip coatings with oxide nanoparticles on structural steel** **Q PW.39**
V. Siropoulos, D. Chaliampalias, D. Karfaridis, C. Vogiatzis, P. Patsalas, S. Skolianos, M. Stefanidou, E. Pavlidou, G. Vourlias
Aristotle University of Thessaloniki

13:30 **Morphological properties of aluminum nanoparticles obtained by thermal evaporation** **Q PW.40**
Ines Lachebi, Abdelkrim Fedala, and Mohamed Kechouane
USTHB, Faculté de Physique, Laboratoire de physique des matériaux, Equipe Couches Minces et Semiconducteurs, B.P. 32, El Alia, 16111 Bab-ezzouar, Algers, ALGERIA

13:30 **Zirconium oxynitride coatings deposited by magnetron sputtering: the problem of the chemical and color restrictions** **Q PW.41**
C. I. da Silva Oliveira 1, D. Martínez-Martínez 1, L. Cunha 1, E. Alves 2, N. P. Barradas 3 M. Apreutesei 4
1 Center of Physics, University of Minho, Campus de Azurém, 4800-058 Guimarães, Portugal, 2 Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Universidade de Lisboa, E.N. 10 (km 139.7), 2695-066 Bobadela LRS, Portugal, 3 Centro de Ciências e Tecnologias Nucleares, Instituto Superior Técnico, Universidade de Lisboa, E.N. 10 (km 139.7), 2695-066 Bobadela LRS, Portugal, 4 INSA de Lyon, MATEIS Laboratory, Villeurbanne, France

13:30 **Preparation of black aluminium thin films by magnetron sputtering** **Q PW.42**
M. Novotny1, P. Dusek1, J. Nikl2, J. Bulir1, P. Pokorny1, E. Maresova1, P. Fitl3, L. Fekete1, J., Y. Dekhtyar4, J. Lancok1
1) Institute of Physics of the Czech Academy of Sciences, Na Slovance 2, 182 21 Prague, Czech Republic, 2) Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, V Holesovickach 2, 180 00 Prague 8, Czech Republic, 3) University of Chemistry and Technology Prague, Technicka 5, 166 28 Prague 6, Czech Republic, 4) Riga Technical University, 1 Kalku str., Riga, Latvia

13:30 **Effect of adding silica sand nano-particles on epoxy based intumescent coatings** **Q PW.43**
Tahir Ahmad, M, Kamran, M. U. Manzoor, M. T. Z. Butt
Department of Metallurgy and Materials Engineering, CEET, University of the Punjab Lahore Pakistan

13:30 **NEW FERROMAGNETIC DILUTED SEMICONDUCTOR NANOLAYERS FOR SPINTRONIC APPLICATION** **Q PW.44**
O. Yastrubchak, L. Gluba, M. Sawicki, T. Andrearczyk, J.Z. Domaga?a, J. ?uk, T. Wosinski, J. Sadowski, N. Tataryn
V.E. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 03028 Kyiv, Pr. Nauky 41, Ukraine, Institute of Agrophysics, Polish Academy of Sciences, Do?wiadczalna 4, 20-290 Lublin, Poland, Institute of Physics, Maria Curie-Sklodowska University in Lublin, Pl. M. Curie-Sk?odowskiej 1, 20-031 Lublin, Poland, Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 32/46, 02-668 Warsaw, Poland, Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 32/46, 02-668 Warsaw, Poland, Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 32/46, 02-668 Warsaw, Poland, Maria Curie-Sklodowska University in Lublin, Pl. M. Curie-Sk?odowskiej 1, 20-031 Lublin, Poland, Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 32/46, 02-668 Warsaw, Poland, MAX-IV laboratory, Lund University, P.O. Box.118, 22100 Lund, Sweden, Department of Physics and Electrical Engineering, Linnaeus University, SE-391 82 Kalmar, Sweden, Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 32/46, 02-668 Warsaw, Poland, Kyiv Technical University, 37, Prosp.Peremohy, 03056 Kyiv, Ukraine,

13:30 **Multilayer structures created by Ion Beam Deposition technique for X-ray standing wave applications** **Q PW.45**
O. Dikaya (a), A. Goikhman (a), D. Novikov (b), E. Mukhamedzhanov (c), M. Borisov (c), K. Maksimova (a)
(a) Immanuel Kant Federal Baltic University, Kaliningrad, Russia, (b) Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany, (c) National Research Center «Kurchatov Institute», Moscow, Russia

13:30 **A microscopic view of the effect of nanostructuration on thermal transport** **Q PW.46**
A. Tlili1, 2, S. Pailhès1, R. Debord1, S. Gravier2 ,J.- J. Blandin2, P. Noé3. V. M. Giordano1
1 Institute of Light and Matter, UMR5306 Université Lyon 1-CNRS, Université de Lyon, 69622 Villeurbanne Cedex, France&#8221, 2 Science and Engineering of Materials and Processes, SIMaP, GrenobleINP, 38402 Saint-Martin d&#8217,Hères, France 3 CEA-LETI, Minatec Campus, 38054 Grenoble Cedex 09, France

13:30 **Biosynthesis and Antibacterial Activity of Zinc Oxide Nanoparticles against Biofilm Formation** **Q PW.47**
F. Pappa, V. Karagkiozaki, Z. Dardani, P. Gkertsiou, S. Kassavetis, C. Gravalidis, S. Logothetidis
Nanomedicine Group, Lab for Thin Films-Nanobiomaterials-Nanosystems & Nanometrology (LTFN), Department of Physics, Aristotle University of Thessaloniki, Greece

13:30 **Study of Multilayer TiAlN/SiAlN Thin Films Structure by Methods of X-ray Diffraction** **Q PW.48**
B.O. Postolnyi1,2, G. Abadias3, L. Rebouta4, J.P. Araujo2, A.D. Pogrebnjak1
1Sumy State University, 2 Rymskogo-Korsakova st., 40007 Sumy, Ukraine 2IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Department of Physics and Astronomy, Faculty of Science, University of Porto, 687 Campo Alegre st., 4169-007 Porto, Portugal 3Institut Pprime, Department of Physics and Mechanics of Materials, CNRS - University of Poitiers - ENSMA, 11 Blvd. M. et P. Curie, BP 30179, F86962, Chasseneuil-Futuroscope cedex, France 4Centre of Physics, University of Minho, Alameda da Universidade, 4804-533 Guimarães, Portugal

13:30 **XRD studies of Nanovation V14 white coatings for ESA&#8217,s BepiColombo mission to Mercury** **Q PW.49**
Malgorzata Holynska, Ricardo Martins, Adrian Graham, Yuriy Butenko, Frank Meyer, Christopher Semprimoschnig
European Space Agency, Keplerlaan 1, NL2200AG, Noordwijk, European Space Agency, Keplerlaan 1, NL2200AG, Noordwijk, European Space Agency, Keplerlaan 1, NL2200AG, Noordwijk, European Space Agency, Keplerlaan 1, NL2200AG, Noordwijk, CeraNovis GmbH, Untertuerkheimer Strasse 25, 66117 Saarbruecken, European Space Agency, Keplerlaan 1, NL2200AG, Noordwijk

16:00 **Coffee break**

16:15 **Plenary Session**

Hard, wear self-healing, self-lubricant and corrosion/oxidation resistant coatings : Ph. Steyer + Diego Martinez

08:30 **Tribological aspects related with PVD hard coating morphology** **Q 8.1**
Peter Panjan
Jozef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia

09:00 **Corrosion behavior of nanocrystalline NiW coatings: Influence of the processing technique and the metallurgical state.** **Q 8.2**
Matthieu Lagarde, Niusha Shakibi Nia, Juan Creus, Xavier Feaugas, Alain Billard, Catherine Savall
Matthieu Lagarde, Juan Creus, Xavier Feaugas, Catherine Savall: LaSIE, Université de la Rochelle, UMR 7356 CNRS, Av. Michel Crépeau, 17042 La Rochelle, France, Niusha Shakibi Nia: Institut für Physikalische Chemie, Leopold-Franzens-Universität Innsbruck, Innrain 52c, 6020 Innsbruck, Austria, Alain Billard: IRTES-LERMPS, UTBM Montbeliard, 2 place Tharradin, 25200 Montbéliard, France,

09:15 **The effect of pure Ti, Nb or Cr adhesion interlayers on the tribological behavior and impact wear résistance of DLC thin films** **Q 8.3**
Imane Bouabibsa, Salim Lamri, Frédéric Sanchette
Institut Charles Delaunay, Laboratoire des Systèmes Mécaniques et d'Ingénierie Simultanée (ICD-LASMIS) UMR 6281, CNRS-UTT, Antenne de Nogent-52, Pôle Technologique de Haute-Champagne, 52800 Nogent, France. Nogent International Center for CVD Innovation (NICCI), LRC CEA-ICD LASMIS, UTT Antenne de Nogent, pôle technologique de haute Champagne, 52800 Nogent, France

09:30 **Improving the high temperature oxidation resistance of pure titanium by shot-peening treatments** **Q 8.4**
A. Kanjer (1), V. Optasanu (1), M.C. Marco de Lucas (1), M. François (2), P. Berger (3), T. Montesin (1), L. Lavisse (1)
(1) Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université de Bourgogne Franche-Comté, 9 avenue Alain Savary, BP 47870, 21078 Dijon cedex, (2) LASMIS, Université Technologique de Troyes, 12 rue Marie Curie, 10000 Troyes, (3) NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif sur Yvette Cedex

09:45 **INFLUENCE OF SUPERHYDROPHOBIC, NANOSTRUCTURED THIN FILMS ON FRICTIONAL DRAG** **Q 8.5**
Federico Veronesi1, Mariarosa Raimondo1, Giulio Boveri1, Claudia Nicolai2, Elena Ciappi2, Francesco La Gala2
1CNR-ISTEC, Institute of Science and Technology for Ceramics, National Research Council, Faenza (RA), Italy, 2 CNR-INSEAN, Marine Technology Research Institute, National Research Council, Rome, Italy

10:00 **Coffee break**

10:30 **Influence of vicoelasticity on the frictional performance of DLC-coated elastomers** **Q 8.6**
D. Martínez Martínez, J. Th. M. de Hosson
Department of Applied Physics of the University of Groningen, Nijenborgh 4, 9747AG, Groningen, The Netherlands

10:45 **Properties and thermal behavior of magnetron sputtered Zr–Cu and Zr–Hf–Cu metallic glasses** **Q 8.7**
P. Zeman, M. Zitek, S. Zuzjakova, R. Cerstvy, S. Haviar, M. Kotrlova
Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Univerzitni 8, 306 14 Plzen, Czech Republic

11:00 **Corrosion protected 3D core-shell nanocolloids** **Q 8.8**
Hyeon-Ho Jeong (1,2), Mariana Alarcón-Correa (1,3), Andrew G. Mark (1), Tung-Chun Lee (1,4), Peer Fischer(1,3)
(1) Max Planck Institute for Intelligent Systems, Heisenbergstrasse 3, 70569 Stuttgart, Germany, (2) Institute of Materials, École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland, (3) Institute for Physical Chemistry, University of Stuttgart, Pfaffenwaldring 55, 70569 Stuttgart, Germany, (4) Institute for Materials Discovery and Department of Chemistry, University College London, Christopher Ingold Building, 20 Gordon Street, London WC1H 0AJ, United Kingdom

11:15 **Characterization of ultra-thin WS2 films deposited by magnetron sputtering.** **Q 8.9**
Manuel Evaristo, Albano Cavaleiro
SEG-CEMMPRE Centre for Mechanical Engineering Materials and Processes, Department of Mechanical Engineering, University of Coimbra, Coimbra Portugal., SEG-CEMMPRE Centre for Mechanical Engineering Materials and Processes, Department of Mechanical Engineering, University of Coimbra, Coimbra Portugal.

11:30 **Mechanical behavior of novel W-B-C and Mo-B-C coatings produced by magnetron sputtering** **Q 8.10**
Petr Vasina, Pavel Soucek, Saeed Mirzaei, Vilma Bursikova, Lukas Zabransky, Mostafa Alishahi, Jiri Bursik, Vratislav Perina
Department of Physical Electronics, Faculty of Science, Masaryk University, Brno, Czech Republic (Petr Vasina, Pavel Soucek, Saeed Mirzaei, Vilma Bursikova, Lukas Zabransky, Mostafa Alishahi) Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic (Jiri Bursik) Nuclear Physics Institute, Academy of Sciences of the Czech Republic, v.v.i., Rez, Czech Republic (Vratislav Perina) Email: alishahi.mostafa@gmail.com vasina@physics.muni.cz

11:45 **Tribo-corrosion resistant ZrTiCN and ZrNbCN coatings** **Q 8.11**
M. Dinu, L.R. Constantin, A.C. Parau, A. Vladescu, M. Braic
National Institute for Optoelectronics, 409 Atomistilor St., 077125, Magurele-Bucharest, Romania

12:00 **Low temperature deposition of diamond plates.** **Q 8.12**
S. Drijkoningen1,2, P. Pobedinskas1,2, S. Korneychuk3, A. Momot1,2, A. Hardy1,2, M. Van Bael1,2, S. Turner3, J. Verbeeck3, M. Nesládek1,2, K. Haenen1,2
1 Institute for Materials Research (IMO), Hasselt University, Diepenbeek, Belgium, 2 IMOMEC, IMEC vzw, Diepenbeek, Belgium, 3 Electron Microscopy for Materials Science (EMAT), University of Antwerp, Antwerp, Belgium

12:15 **Lunch**

Thin films for smart applications: from organic synthesis and surface functionalization to : J. Patscheider + Olivier Sublemontier

14:00 **Local epitaxial growth and self-assembled growth of vertically aligned columns in copper oxide thin films** **Q 9.1**
J.F. Pierson
Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Nancy, France

14:30 **Smartphone-assisted Detection by Diffractive Sensors : a fruitful combination of Soft Chemistry & Soft Lithography** **Q 9.2**
Olivier Dalstein, Cédric Boissère, David Grosso, Andrea Cattoni, Marco Faustini
Olivier Dalstein, Cédric Boissère, Marco Faustini : Université Pierre et Marie Curie (UPMC) - Laboratoire de Chimie de la Matière Condensée de Paris (LCMCP) Andrea Cattoni : CNRS - Centre de Nanosciences et de Nanotechnologies (C2N) David Grosso : Aix-Marseille Université - Institut Matériaux Microtechnologie Nanosciences de Provence (IM2NP)

14:45 **Realization of flexible piezoelectric thin film on polymer substrate** **Q 9.3**
Thibault Dufay, Raynald Seveno, Jean-Christophe Thomas, Benoit Guiffard
IETR UMR CNRS 6164, UBL University, University of Nantes, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France , IETR UMR CNRS 6164, UBL University, University of Nantes, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France , GeM UMR CNRS 6183, UBL University, University of Nantes, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France , IETR UMR CNRS 6164, UBL University, University of Nantes, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France

15:00 **Engineering of copper surfaces by sol–gel routes** **Q 9.4**
Giulio Boveri, Federico Veronesi, Mariarosa Raimondo, Magda Blosi, Guia Guarini
Institute of Science and Technology for Ceramics

15:15 **Preparation of TiO2/Ag films obtained by laser ablation in liquid and electrophoretic deposition** **Q 9.5**
M. Boutinguiza1, M. Meixus1, R. Comesaña2, F. Lusquiños1, A. Riveiro1, 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.

15:30 **Coffee break**

Coatings for biological applications 1 : Mikhael Bechelany + Mertin Stefan

16:00 **Oxynitride coatings: New opportunities and new challenges** **Q 10.1**
Jörg Patscheider
Empa Laboratory for Nanoscale Materials Science CH-8600 Dübendorf, Switzerland

16:30 **Plasmonic sensing at carbon thin films for biological applications** **Q 10.2**
Federico Zen, Vasilios D. Karanikolas, James Behan, Joana Vasconcelos, Jenny Andersson, Thomas Duff, Eoin M. Scanlan, Louise Bradley, Paula E. Colavita.
Federico Zen, James Behan, Joana Vasconcelos, Thomas Duff, Eoin M. Scanlan, Paula E. Colavita: School of Chemistry and AMBER Research Centre, University of Dublin Trinity College, College Green, Dublin, Dublin D2, Ireland. Vasilios D. Karanikolas, Louise Bradley: School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), University of Dublin Trinity College, College Green, Dublin, Dublin D2, Ireland. Jenny Andersson: Insplorion AB, Sahlgrenska Science Park, Medicinaregatan 8A, 413 90 Göteborg, Sweden.

16:45 **Multiscale research of the bio- compatible,wear resistant,decorative coatings for medical tools and spine implants applications** **Q 10.3**
L.Major - 1, J.M.Lackner - 2, M.Kot - 3, M. Dyner - 4, B.Major - 1
1- Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 30-059 Cracow, 25 Reymonta Street, Cracow, Poland, 2- JOANNEUM RESEARCH –Materials, Institute for Surface Technologies and Photonics, Niklasdorf, Austria, 3- Laboratory of Surface Engineering and Tribology, Faculty of Mechanical Engineering and Robotics, AGH University of Science and Technology, Cracow, Poland, 4- CHIRMED-Manufacturer of Surgical and Medical Instruments, 8a Mstowska Street, 42-240 Rudniki, Poland

17:00 **Membranes design and applications using atomic layer deposition** **Q 10.4**
mikhael BECHELANY
Institut Européen des Membranes, UMR 5635 ENSCM CNRS Université Montpellier, Place Eugene Bataillon, F-34095 Montpellier cedex 5, France E-mail: mikhael.bechelany@univ-montp2.fr

17:15 **Development of new nano-structure Ti-Nb-Zr coating with low Young's modulus and high wear resistance for implant materials** **Q 10.5**
E. Frutos, M. Karlik, T. Polcar
1 Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague, Technická 2, Prague 6, Czech Republic. 2 Department of Materials, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Trojanova 13, 120 00 Prague 2, Czech Republic. 3 National Centre for Advanced Tribology (nCATS), University of Southampton, University Road, Southampton SO17 1BJ UK.

17:30 **Bio-Inspired Multiproperty Materials: Strong and Transparent Cellulose Nano-Reinforced LbL-Composites** **Q 10.6**
Rémi Mérindol [1], Rebecca Blell [1], Xiaofeng Lin [1], Matthias Pauly [1,2], Thierry Roland [1,2], Tim Lindström [3], Mikael Ankerfors [3], Christian Gauthier [1,2], Gero Decher [1,2], Olivier Félix [1]
[1] Institut Charles Sadron UPR22-CNRS, 23 rue du Loess, 67034 Strasbourg Cedex 2, France, [2] Université de Strasbourg, 1 rue Blaise Pascal, 67008 Strasbourg, France, [3] Innventia AB, Drottning Kristinas väg 61, Box 5604, SE-114 86 Stockholm, Sweden

17:45 **Direct synthesis of Ag nanoparticle coatings by cluster beam deposition : mechanical and antimicrobial properties** **Q 10.7**
G. Benetti1,2, S. Peli1, E. Cavaliere1, M. Gandolfi1,3, C. Giannetti1, G. Ferrini1, C. Cancellieri4, M. Chiodi4, M. Van Bael2, F. Banfi1, Luca Gavioli1,*
1 Interdisciplinary Laboratories for Advanced Materials Physics (I-LAMP) and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, 25121 Brescia, Italy 2 Katholiek Universitet, Laboratory of Solid state Physics and Magnetism, Department of Physics and Astronomy Celestijnenlaan 200D, B-3001, Leuven, Belgium. 3 Laboratory of Soft Matter and Biophysics, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D, B-3001, Leuven, Belgium 4 Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining and Interface Technology, Überlandstrasse 129, 8600 Dübendorf, Switzerland

18:00 **Epitaxial growth of functional oxide nanostructured thin films on technological substrates based on chemical strategies** **Q 10.8**
J. M. Vila-Fungueiriño1, R. Moalla2, R. Bachelet2, G. Saint-Girons2, J. Rodriguez-Carvajal3, A. Gomez4, J. Gazquez4, N. Mestres4, F. Rivadulla5, M. Gich4, A. Carretero-Genevrier1*.
1Institut d´Électronique et des Systèmes (IES) UMR 5214, Bâtiment 5, 860 rue Saint Priest, 34090 Montpellier, France 2 Institut des Nanotechnologies de Lyon (INL) CNRS- Ecole Centrale de Lyon, 36 avenue Guy de Collongue, 69134 Ecully, France 3Institut Laue-Langevin, 6 rue Jules Horowitz, BP 156, 38042 Grenoble Cedex 9, France 4Institut de Ciència de Materials de Barcelona ICMAB, Consejo Superior de Investigaciones Científicas CSIC, Campus UAB 08193 Bellaterra, Catalonia, Spain
5 Centro de Investigación en Química Biológica y Materiales Moleculares (CIQUS), Universidad de Santiago de Compostela, 15782-Santiago de Compostela, Spain

18:30 **Synthesis of nanoparticle-based composite coatings** **Q 10.9**
Olivier Sublemontier Youri Rousseau
NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif-sur-Yvette France

18:45 **GLAD co-sputtering of bi-component nanostructured TiAg and TiCu thin films for high TCR sensors** **Q 10.10**

Paulo Pedrosa, Armando Ferreira, Nicolas Martin, Mohammad Arab Pour Yazdi, Alain Billard, Filipe Vaz
Paulo Pedrosa: Institut FEMTO-ST, UMR 6174 CNRS, Université Bourgogne Franche-Comté, 15B Avenue des Montboucons, 25030 Besançon Cedex, France, Armando Ferreira: Centro de Física da Universidade do Minho, Campus de Gualtar, Braga, Portugal, Nicolas Martin: Institut FEMTO-ST, UMR 6174 CNRS, Université Bourgogne Franche-Comté, 15B Avenue des Montboucons, 25030 Besançon Cedex, France, Mohammad Arab Pour Yazdi: Institut FEMTO-ST, UMR 6174 CNRS, UTBM, Université Bourgogne Franche-Comté, F-90010 Belfort Cedex, France, Alain Billard: Institut FEMTO-ST, UMR 6174 CNRS, UTBM, Université Bourgogne Franche-Comté, F-90010 Belfort Cedex, France, Filipe Vaz: Centro de Física da Universidade do Minho, Campus de Gualtar, Braga, Portugal,

Coatings for biological applications 2 : Adrian Carretero + Alberto Palmero

08:30 **Porous nanostructured coatings grown by PVD techniques: from fundamentals to devices** **Q 11.1**

R. Alvarez, A. García-Valenzuela, V. Rico, A. R. Gonzalez-Elipe, A. Palmero
Instituto de Ciencia de Materiales de Sevilla (CSIC-US)

09:00 **Silicon Nitride Surfaces for DNA Biosensors** **Q 11.2**

S. Petralia (1), E.L. Sciuto (2), T. Cosentino (3), F. Sinatra(3), P. Fiorenza(4), C. Bongiorno(4), S. Conoci(1) and S. Libertino(4)
(1) STMicroelectronics, Stradale Primosole 50, 95121 Catania, Italy, (2) Dipartimento di Fisica e Astronomia, University of Catania, Catania 95100, Italy, (3) Dipartimento di Scienze Biomediche e Biotecnologiche, Via S. Sofia 87, 95100 Catania, Italy, (4) CNR-IMM Sede, Strada VIII Z.I. 5, 95121 Catania, Italy

09:15 **Silver influence on the antibacterial activity of multi-functional Zr-Cu based TFMGs** **Q 11.3**

G.I. Nkou Bouala 1, A. Etiemble 2, C. Der Loughian 1, C. Langlois 1, S. Cardinal 1, J.M. Pelletier 1, J.F. Pierson 2, P. Steyer 1
1 - Univ. Lyon,INSA-Lyon, MATEIS UMR CNRS 5510, 21 Avenue Jean Capelle, 69621, Villeurbanne cedex, France 2 - Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Parc de Saurupt, 54011 Nancy, France

09:30 **Single-step electrochemical deposition of bioactive and antibacterial coatings for medical applications** **Q 11.4**

D.M. Vranceanu1, A. Vladescu2, M. Dinu2, T. Tran1, C.M. Cotrut1
1University Politehnica of Bucharest, 313 Independeței Street, Bucharest, Romania, 2National Institute for Optoelectronics, 409 Atomistilor Street, Magurele, Bucharest, Romania,

09:45 **High-k oxides by Atomic Layer Deposition - applications as anti-microbal layers** **Q 11.5**

Marek Godlewski1,2, Sylwia Gieraltowska1, Lukasz Wachnicki1, Rafał Pietuszka1, Bartlomiej S. Witkowski1, Michal M. Godlewski3,4, Anna Slonska3,4, Zdzislaw Gajewski4
1Institute of Physics, Polish Acad. Sci., Al. Lotników 32/46, 02-668 Warsaw, Poland
2Dept. Math. & Natural Sci. College of Sci., Card. S. Wyszynski Univ., Warsaw, Poland
3Department of Physiological Sciences, Faculty of Veterinary Medicine, Warsaw Uni-versity of Life Sciences – SGGW, Nowoursynowska 159, 02-776 Warsaw, Poland
4Veterinary Research Centre, Centre of Biomedical Research, Department of Large Animals Diseases with Clinic, Faculty of Veterinary Medicine, Warsaw University of Life Sciences – SGGW, Nowoursynowska 100, 02-797 Warsaw, Poland

10:00 **Coffee break**

10:30 **Atmospheric Pressure Plasma Deposition of Stable Bioinspired Anti-Biofilm Layers For Biomedical Applications** **Q 11.6**

Urszula Czuba ac, Robert Quintana a, Maryline Moreno-Couranjou a, Marie-Claire Gillet b, Christophe Detrembleur c, Michael Alexandre d, Patrick Choquet a
a- Materials Research and Technology Department, Luxembourg Institute of Science and Technology (LIST), 5, avenue des Hauts-Fourneaux, L-43623 Esch/Alzette, Luxembourg, b - Mammalian Cell Culture Laboratory, University of Liege, Allée du Six Août, 1, 4000 Liège, Belgium, c - Center for Education and Research on Macromolecules (CERM), Chemistry Department, University of Liege, 13 Allée du 6 Août, 4000 Liège, Belgium, d - Symbiose Biomaterials s.a., Avenue de l'Hopital, 1. 4000 Liège, Belgium.

10:45 **Step-by-step buildup of Poly(ethylene glycol) nanogel films** **Q 11.7**

Sarah Zahouani, Fouzia Boulmedais, Bernard Senger, Pierre Schaaf, Loïc Jierry, Philippe Lavalle
Institut National de la Santé et de la Recherche Médicale, INSERM Unité 1121, 11 rue Humann, 67085 Strasbourg Cedex, France , Institut Charles Sadron, CNRS UPR 22, 23 rue du Lœss, 67034 Strasbourg Cedex, France, Institut National de la Santé et de la Recherche Médicale, INSERM Unité 1121, 11 rue Humann, 67085 Strasbourg Cedex, France , Institut National de la Santé et de la Recherche Médicale, INSERM Unité 1121, 11 rue Humann, 67085 Strasbourg Cedex, France -Faculté de Chirurgie Dentaire, Université de Strasbourg, 8 rue Sainte Elisabeth, 67000 Strasbourg, France , Institut Charles Sadron, CNRS UPR 22, 23 rue du Lœss, 67034 Strasbourg Cedex, France - University of Strasbourg Institute of Advanced Study, 5 allée du Général Rouvillois, 67083 Strasbourg Cedex, France, Institut National de la Santé et de la Recherche Médicale, INSERM Unité 1121, 11 rue Humann, 67085 Strasbourg Cedex, France -Faculté de Chirurgie Dentaire, Université de Strasbourg, 8 rue Sainte Elisabeth, 67000 Strasbourg, France

11:00 **α-Fe2O3 epitaxial thin films grown by Pulsed Laser Deposition on different substrates for gas sensor applications** **Q 11.8**
Aída Serrano1, Juan Rubio-Zuazo1, Jesús López-Sánchez2, Eduardo Salas-Colera1, Iciar Arnay1, Germán R. Castro1
1 Spanish CRG-Spline, The European Synchrotron (ESRF), 38000 Grenoble, France and Instituto de Ciencia de Materiales de Madrid, ICMM-CSIC, 28049 Madrid, Spain, 2 Departamento de Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain and Unidad Asociada IQFR (CSIC)-UCM, 28040 Madrid, Spain

11:15 **Surface modification studies of carbon thin films for applications in carbon-based biodevices** **Q 11.9**
Joana M. Vasconcelos, Federico Zen, James Behan, Khairul Hoque, Ronan J. Cullen, Paula E. Colavita
School of Chemistry and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College Dublin, College Green, Dublin 2, Ireland.

11:30 **Embedded thin-film thermocouples for self-sensing composite materials** **Q 11.10**
F.G. Cougnon, A. Lamberti, D. Depla
Department of Solid State Sciences, Ghent University, Krijgslaan 281(S1) 9000 Gent, Belgium , Department of Materials Science & Engineering, Ghent University, Technologiepark-Zwijnaarde 903 9052 Zwijnaarde, Belgium , Department of Solid State Sciences, Ghent University, Krijgslaan 281(S1) 9000 Gent, Belgium

11:45 **Surface functionalization of MOCVD grown BiFeO3 piezoelectric/ferroelectric films with optically active molecules** **Q 11.11**
C. Tudisco, A. L. Pellegrino, G. Malandrino, G. G. Condorelli
Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR di Catania, Italy

12:00 **TiO2 and polyelectrolyte LbL thin film construction on model surfaces for photocatalysis: toward self-decontaminating textiles** **Q 11.12**
Mavin Motay, David Martel, Olivier Felix, Valérie Keller, Gero Decher, Nicolas Keller
Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé (ICPEES), CNRS, Strasbourg University, 25 rue Becquerel 67087 Strasbourg, France, Institut Charles Sadron (ICS), CNRS, Strasbourg University, 23 rue du Loess 67034 Strasbourg, France

12:15 **Integration of hierarchical TiO2 nanostructures with Au plasmonic nanoparticles for photocatalysis applications** **Q 11.13**
Matteo Ghidelli (a), Luca Mascaretti (a), Tarek Afifi Afifi (a), Beatrice R. Bricchi (a), Valeria Russo (a), Carlo S. Casari (a,b), Roberto Matarrese (c), Isabella Nova (c), Andrea Li Bassi (a,b)
(a) Micro- and Nanostructured Materials Laboratory, Department of Energy, Politecnico di Milano, via Ponzio 34/3, 20133, Milano, Italy. (b) Center for Nanoscience and Technology – IIT@Polimi, via Giovanni Pascoli 70/3, 20133, Milano, Italy (c) Laboratory of Catalysis and Catalytic Processes, Department of Energy, Politecnico di Milano, via La Masa 34, 20156, Milano, Italy

E-MRS

2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

R

SYMPOSIUM R

Nanoparticles in dielectric matrix: from synthesis to device applications for photonics, electronics, and bio sensing

Symposium Organizers :

Blas GARRIDO, University of Barcelona, Spain

Caroline BONAFOS, CEMES, Toulouse, France

Domenico PACIFICI, Brown University, Providence, USA

Simona BONINELLI, IMM-CNR, Catania, Italy

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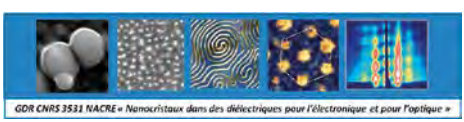

ORSAY PHYSICS
TESCAN ORSAY HOLDING

ZEISS

Monday 22 May 2017

09:00 **Symposium R Opening: S. Boninelli, C. Bonafos, D. Pacifici, B. Garrido**

Process/Characterization 1 : S. Boninelli

09:15 **Photochromic properties of Ag/TiO2 nanocomposite thin films: a combined real-time optical and GISAXS study** **R 1.1**
D. Babonneau, D. K. Diop, L. Simonot, N. Destouches
D. Babonneau 1, D. K. Diop 1,2, L. Simonot 1, N. Destouches 2 1 Institut Pprime, Département Physique et Mécanique des Matériaux, UPR 3346 CNRS, Université de Poitiers, 86962 Futuroscope Chasseneuil Cedex, France 2 Laboratoire Hubert Curien, UMR 5516 CNRS, Université de Lyon, Université Jean Monnet, 42000 Saint-Etienne, France

09:45 **Hybrid ALD-CVD process for the development of decorative plasmonic nanocomposite coatings** **R 1.2**
Naoufal Bahlawane, Jeanette Persson
Luxembourg Institute of Science and technology (LIST), Material Research and Technology (MRT) Department, 41, rue du Brill – L-4422 Belvaux, Luxembourg. AB Sandvik Coromant, R&D Technology Platforms, Surfaces & Coatings, Lerkrogsvägen 19, SE-12680 Stockholm, Sweden

10:00 **Anisotropic optical and electronic properties of oriented self-assembled thin films of 1-D metallic nanoparticles** **R 1.3**
Hebing Hu, Sribharani Sekar, Vincent Lemaire, Gero Decher, and Matthias Pauly
Université de Strasbourg, CNRS, Institut Charles Sadron, F-67000 Strasbourg, France

10:15 **Coffee Break**

10:30 **Fabrication of Ion-Shaped Anisotropic Nanoparticles and their Orientational Imaging by Second- Harmonic Generation Microscopy** **R 1.4**
Giancarlo Rizza, Pierre-Eugène Coulon, Mathieu Kociak, Christian Ulysse, Abdallah Slablab, Martti Kauranen
Laboratoire des Solides Irradiés, Ecole Polytechnique, 91128, Palaiseau, France , Laboratoire de Physique des Solides, University Paris-Sud, Orsay, 91405, France , Laboratoire de Photonique et Nanostructures, CNRS, Marcoussis, France , Department of Physics Tampere University of Technology, Tampere, Finland.

10:45 **Flexible, durable and large scale plasmonic writing via sub-surface laser nanostructuring in stratified metal/dielectric media** **R 1.5**
N. Kalfagiannis1, D.V. Bellas2, D. Toliopoulos2, A. Siozios2, P. Patsalas3, E. Lidorikis2, D.C. Koutsogeorgis1
1School of Science and Technology, Nottingham Trent University, NG11 8NS, Nottingham, United Kingdom, 2Department of Materials Science and Engineering, University of Ioannina, GR-45110 Ioannina, Greece, 3Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece

11:00 **Nanoparticles obtained via solid state dewetting of silver thin films** **R 1.6**
P. Jacquet [1,2,3], B. Bouteille [1], I. Gozhyk [1], R. Podor [4], J. Ravaux [4], M. Kildemo [5], R. Lazzari [2,3], J. Jupille [2,3], J. Teisseire [1]
[1] Surface du Verre et Interfaces, UMR 125 CNRS/Saint-Gobain Recherche, 39 quai Lucien Lefranc, F-93303 Aubervilliers, France [2] CNRS, UMR 7588, Institut des NanoSciences de Paris, 4 place Jussieu, F-75252 Paris, France [3] Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, Institut des NanoSciences de Paris, 4 place Jussieu, F-75252 Paris, France [4] Institut de Chimie Séparative de Marcoule, UMR 5257 CEA-CNRS-UM-ENSCM, Site de Marcoule, F-30207 Bagnols sur Cèze, France [5] Department of Physics, Norwegian University of Science and Technology, Trondheim NO-7491, Norway

11:15 **Effect of Ge content on structural stability and phase transformation in Ge-rich ZrO2 and HfO2 films** **R 1.7**
D. Lehninger1, L. Khomenkova2, S. Ponomaryov2, O.Gudymenko2, M. Boisserie3, C. Röder4 , M. Motylenko5, V. Yukymchuk2, F. Gourbilleau3, J. Heitmann1
1) Institute of Applied Physics, TU Bergakademie Freiberg, D-09596 Freiberg, Germany, 2) V. Lashkaryov Institute of Semiconductor Physics, 45 Pr. Nauky, Kyiv 03028, Ukraine, 3) CIMAP, Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 6 Blvd. Maréchal Juin, 14050 Caen, France, 4) Institute of Theoretical Physics, TU Bergakademie Freiberg, D-09596 Freiberg, Germany, 5) Institute of Materials Science, TU Bergakademie Freiberg, D-09596 Freiberg, Germany.

11:30 **Titanium and titanium-silicon based oxides deposited by Plasma Enhanced Chemical Vapour Deposition: XPS characterisation** **R 1.8**
Mireille RICHARD-PLOUET*, Stéphane ELISABETH*, Lenka ZAJICKOVA#, Pavel ONDRACKA#, David NECAS#, Michèle CARETTE$, Agnès GRANIER*, Antoine GOULLET*
*Institut des Matériaux Jean Rouxel (IMN) Université de Nantes, CNRS, 2, rue de la Houssinière F44322 NANTES Cedex #Dept. Phys. Electronics, Faculty of Science & Plasma Technologies, Central European Institute for Technology Masaryk University Brno, Czech Republic $Institut d'Electronique, de Microélectronique et de Nanotechnologie, Villeneuve d'Ascq, France

11:45 **Multi-Component Hierarchical Nanostructures through Block Copolymer Self-Assembly: Fabrication and Application** **R 1.9**
Vignesh Suresh
Agency for Science Technology and Research (A*Star), Institute of Materials Research and Engineering (IMRE), #08-03, 2 Fusionopolis Way, Innovis, Singapore 138634

12:00 **Lunch**

Plasmonics 1 : D. Pacifici

14:00 **Independent Infrared and Visible Electrochromism in Plasmonic Nb-doped TiO2 Nanocrystals** **R 2.1**
Clayton J Dahlman, Delia J Milliron
The University of Texas at Austin, McKetta Department of Chemical Engineering

14:30 **Emission efficiency enhancement of Er3+ ions in silica by near-field coupling with plasmonic and pre-plasmonic nanostructures** **R 2.2**
T. Cesca, B. Kalinic, N. Michieli, C. Maurizio, C. Scian, G. Mattei
University of Padova, Physics and Astronomy Department, NanoStructures Group (NSG)

14:45 **Plasmonic behavior of nanocomposites of fluoride with metal nanoparticles fabricated by pulsed laser deposition and evaporation** **R 2.3**
J. Lančok1,T. Zikmund1, J.Bulíř1, M. Novotný1, E. Marešová1, E. Chernova1, J. Valenta2 , A. Pereira3
1 1Department of Analyses of Functional Materials, Institute of Physics of AS CR, Na Slovance2, Prague, 18221, Czech Republic, 2 Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 3, Prague 2, Czech Republic , 3 Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, F-69622, Villeurbanne, France

15:00 **Monodisperse Gold Nanorods: Seedless Synthesis and High Yield of Gold Conversion** **R 2.4**
Kang Liu, Yanru Bu, Yuanhui Zheng, Xuchuan Jiang, Aibing Yu, and Huanting Wang Chemical Engineering. Monash University, Australia for Kang Liu, Yanru Bu, Xuchuan Jiang, Aibing Yu, and Huanting Wang. School of Chemistry, University of New South Wales, Australia for Yuanhui Zheng

15:15 **Scalable physical coloration based on plasmonic nanostructures** **R 2.5**
Tianyi Shen, Jessica Cheng, Domenico Pacifici
School of Engineering, Brown University, Providence, RI, 02912 USA

15:30 **Coffee Break**

Photonics 1 : B. Garrido

16:00 **Probing luminescent and absorbing states in silicon quantum dots** **R 3.1**
Jan Linnros, Federico Pevere, Ilya Sychugov
Materials Physics, KTH - Royal Institute of Technology Electrum 229, 16440 Kista-Stockholm, Sweden

16:30 **Thermally stimulated exciton emission in Si nanocrystals** **R 3.2**
Elinore M.L.D. de Jong, Huub Rutjes, A. Capretti, Tom Gregorkiewicz
Van der Waals-Zeeman Instituut, University of Amsterdam, Amsterdam, The Netherlands

16:45 **Relaxation dynamics of photoexcited carriers in very thin silicon nanowires produced by an inductively coupled plasma torch** **R 3.3**
S. Ponzoni,1 P. Castrucci,2 M. Agati,3,4,5 V. Le Borgne,3 R. Dolbec,6 S. Boninelli,5 M. De Crescenzi,2, M. A. El Khakani3, and S. Pagliara1
1 I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy. 2 Dipartimento di Fisica, Università di Roma Tor Vergata, 00133 Roma, Italy. 3 INRS Énergie, Matériaux et Télécommunications, Varennes, QC, J3X-1S2, Canada 4 Dipartimento di Fisica e Astronomia, Università di Catania, I-95123 Catania, Italy 5 CNR-IMM, Via S. Sofia, 64 - 95123 Catania, Italy 6 Tekna Plasma Systems Inc., 2935 Industrial Blvd., Sherbrooke, QC, J1L-2T9, Canada

17:00 **Energy migration, exchange and dissipation in ensembles of semiconductor nanocrystals** **R 3.4**
Tom Gregorkiewicz
Van der Waals - Zeeman Institute, University of Amsterdam

17:30 **Rare-earth clustering in silicon rich silica: precipitation mechanism and optical properties.** **R 3.5**
E. Talbot1, G. Beainy1, P. Pareige1, F. Gourbilleau2, J. Weimmerskirch-Aubatin3, M. Stoffel3, M. Vergnat3 and H. Rinnert3
1 Groupe de Physique des Matériaux, Université de Rouen et INSA de Rouen, UMR CNRS 6634, Avenue de l'Université BP 12, 76801 Saint Etienne du Rouvray, France 2 CIMAP, UMR CNRS/CEA/Ensicaen/UCBN, ENSICAEN, 6 Bd. Maréchal Juin, 14050 Caen Cedex, France 3 Université de Lorraine, UMR CNRS 7198, Institut Jean Lamour, BP 70239, 54506 Vandœuvre-lès-Nancy, France

17:45 **Well defined rare-earth doped silica nanoparticles for a new opportunity in photoluminescent uses: Synthesis and characterization** **R 3.6**
Hussein Fneich 1 - 3, Nathalie Gaumer 2, Manuel Vermillac 3, Stéphane Chaussedent 2, Wilfried Blanc 3, Ahmad Mehdi 1
1. University of Montpellier, ICGM, CNRS UMR 5253, 34095 Montpellier Cedex 5, France , 2. University of Angers, LPhiA, UPRES EA 4464, 49045 Angers Cedex 01, France , 3. University of Côte d'Azur, CNRS UMR 7010, INPHYNI, Parc Valrose, 06108 Nice Cedex 2, France

18:00 **HfO2:Eu luminescent nano-dots via nonaqueous sol-gel: the role of doping and implementation into photoconverting nano-composites** **R 3.7**
Alessandro Lauria‡, Irene Villa†, Andreas Braendle‡, Mauro Fasoli†, Walter Caseri‡, Anna Vedda†, Markus Niederberger‡
‡: Laboratory for Multifunctional Materials, Department of Materials, ETH Zürich, Vladimir-Prelog-Weg 5, 8093 Zürich, Switzerland, †: Department of Materials Science, University of Milano-Bicocca, Via R. Cozzi 55, 20125 Milano, Italy

18:15 **Ce3+ doped Silicon Oxynitride thin films for emitting devices** **R 3.8**
F. Ehré(1), C. Dufour(1), F. Gourbilleau(1), X. Portier(1), J. Cardin(1), B. Garrido(2), O. Blazquez(2), W. M. Jadwisienczak(3), A. L. Richard(4), David C. Ingram(4) and C. Labbé(1)
(1) Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, CIMAP, 14000 Caen, France (2)MIND-IN2UB, Departament d'Electrònica, Universitat de Barcelona, Martí i Franquès 1, E 08028, Barcelona, Spain. (3)School of Electrical Engineering and Computer Science, Ohio University, Stocker Center, Athens, OH 45701, USA (4)Department of Physics and Astronomy, Ohio University, Athens, OH 45701, USA

Doping : C. Bonafos

08:30 **Energetics, carrier transport and carrier multiplication in pure and doped semiconductors nanocrystals** **R 4.1**
Stefano Ossicini
Dipartimento di Scienze e Metodi dell'Ingegneria, Università di Modena e Reggio Emilia, via Amendola 2 Pad. Morselli, I-42100 Reggio Emilia, Italy and CNR-INFM-S3 "nanoStructures and bioSystems at Surfaces", via Campi 211, I-41100 Modena, Italy

09:00 **Electronic structure of Si nanocrystals codoped with n- and p-type impurities** **R 4.2**
Christophe Delerue
IEMN-CNRS, Villeneuve d'Ascq, France

09:15 **Phosphorus doped Si nanocrystals embedded in SiO2 thin films: from low doping to localized surface plasmon resonance** **R 4.3**
S. Geiskopf (1), M. Stoffel (1), X. Devaux (1), N. Cherkashin (2), C. Bonafos (2), A. Bouché (1), D. Mangin (1), M. Vergnat (1), H. Rinnert (1)
(1) Université de Lorraine, UMR CNRS 7198, Institut Jean Lamour, BP 70239, 54506 Vandœuvre-lès-Nancy, France, (2) CEMES-CNRS Université de Toulouse, rue Jeanne Marvig, BP 94347, 31055 Toulouse, Cedex 4, France

09:30 **Investigation of carrier multiplication process in phosphor and boron co-doped silicon nanocrystals** **R 4.4**
N.X. Chung, R. Limpens, C. de Weerd, T. Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, the Netherlands

09:45 **Investigating the self-doping process in mercury chalcogenides nanocrystals** **R 4.5**
Emmanuel Lhuillier1* Clément Livache,1,2 Bertille Martinez,1,2 Adrien Robin,2 Hongyue Wang,2 Sandrine Ithurria,2 Hervé Aubin,2
1Sorbonne Universités, UPMC Univ. Paris 06, CNRS-UMR 7588, Institut des NanoSciences de Paris, 4 place Jussieu, 75005 Paris, France 2Laboratoire de Physique et d'Etude des Matériaux, ESPCI-ParisTech, PSL Research University, Sorbonne Université UPMC Univ Paris 06, CNRS, 10 rue Vauquelin 75005 Paris, France.

10:00 **Coffee Break**

Plasmonics 2 : D. Babonneau

10:30 **Measuring Single-Particle Plasmonics on the Nanoscale with Single-Molecule Fluorescence Microscopy** **R 5.1**
Julie Biteen
University of Michigan

11:00 **New insight on normal and inverse plasmonic photoconductance in Au and Ag nanoparticle arrays** **R 5.2**
E. Terver, T. Alnasser, A. Mlayah, B. Viallet, L. Ressier, J. Grisolia
a. Université de Toulouse, LPCNO, INSA-CNRS-UPS, 135 avenue de Rangueil, Toulouse 31077, France. b. CEMES-CNRS and Université de Toulouse, 29 rue Jeanne Marvig, BP 94347, F-31055 Toulouse Cedex 4, France.

11:15 **Tuning of surface lattice resonances in self-assembled colloidal monolayers** **R 5.3**
Kirsten Volk, Joseph P.S. Fitzgerald, Matthias Karg
Heinrich-Heine-University Duesseldorf, Physical Chemistry I, Universitaetsstr. 1, 40204 Duesseldorf, Germany

11:30 **PTFE-Coated PdAu Alloy Nanoparticles as Hysteresis-Free Nanoplasmonic Hydrogen Sensors with sub-Second Response Time** **R 5.4**
Ferry A. A. Nugroho*, Iwan Darmadi*, Herman Schreuders**, Bernard Dam**, Christoph Langhammer*
*Department of Physics, Chalmers University of Technology SE-412 96, Göteborg, Sweden., **Materials for Energy Conversion and Storage (MECS), Department of Chemical Engineering, Delft University of Technology, 2600 GA Delft, The Netherlands.

11:45 **Designing the surface plasmon response of origami organized nanoparticles** **R 5.5**
Tamoghna Das, Jack F. Douglas
National Institute of Standards and Technology and University of Maryland, National Institute of Standards and Technology, Gaithersburg, USA.

12:00 **Lunch**

Process/Characterization 2 : K. Makasheva

13:30 **Directed assembly of nanoparticles monitored by liquid crystal topological defects for advanced optical properties** — R 6.1
Emmanuelle Lacaze, Laurent pelliser, Syou Pheng Do, Ian nemitz, Joel Pendery, Brigita Rozic and Delphine Coursault
INSP, Sorbonne-Universités, CNRS-UPMC, Paris, france Reserve Case Wester university, Cleveland, Ohio, USA Jožef Stefan Institute, Ljubljana, Slovenia The James Franck Institute, The University of Chicago, Chicago, USA

14:00 **Nanoparticle composites by mechanochemistry** — R 6.2
Bilge Baytekin, Özge Bayrak, Tutku Bedük
Chemistry Department, Bilkent University, 06800, Ankara, TURKEY

14:15 **On mapping of absolute interplanar distances and angles in crystalline nanocrystals embedded within an amorphous matrix using high resolution TEM images** — R 6.3
N. Cherkashin1, C. Gatel1, C. Bonafos1, V. V. Chaldyshev2
1CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France 2Ioffe Institute, 26 Politekhnicheskaya Str., 194021 St. Petersburg, Russia

14:30 **Block copolymer based self-assembled hyperbolic metamaterial in the visible range** — R 6.4
Xuan WANG, Alexandre BARON, Ashod ARADIAN, Morten KILDEMO, Virginie PONSINET
CNRS, University of Bordeaux, CRPP UPR8641, 33600 Pessac, France, Physics Department, NTNU, Trondheim 7491, Norway

14:45 **Synthesis and optical characterization of highly luminescent silica coated CdSe/CdS/ZnS quantum dots** — R 6.5
Elleke van Harten, Andries Meijerink
Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, Utrecht University, The Netherlands

15:00 **Optical and Structural study of embedded Ge QDs in Si3N4 and SiO2 multilayer structures** — R 6.6
1.R. Bahariqushchi ,Sinan Gundogdu 2. A.Aydinli
1.Bilkent University, Physics Department, Ankara, 06800, Turkey 2.Uludag University, Electrical and Electronics Engineering Department, Bursa 16059, Turkey

15:15 **Mathematical description of nanocrystal size, shape and surface orientation as tool to interpret solid state spectroscopy data** — R 6.7
Dirk König
Integrated Materials Design Centre (IMDC), University of New South Wales (UNSW), Sydney, Australia

15:30 **Coffee Break**

Poster Session : S. Boninelli, C. Bonafos

16:00 **Photoluminescence of fullerene C60 thin film in plasmon coupled Au nanoparticles monolayer / C60 film / Al film nanostructure** — R P1.1
Oleg Yeshchenko, Viktor Kozachenko, Nataliya Berezovska, Yuriy Liakhov
Physics Department, Taras Shevchenko National University of Kyiv, 60 Volodymyrs'ka str., 01601 Kyiv, Ukraine

16:00 **Innovative OxRAM nanomemories with indium oxide nanocrystals fabricated by ultra low energy ion implantation** — R P1.2
G. BenAssayag(1), C. Bonafos(1), B. Pecassou(1), D. Drouin(2), S. Ecoffey(2), K. Souifi(3), F. Torregrosa(4)
(1) CEMES-CNRS (Université de Toulouse), (2) UMI-LN2 (Université de Sherbrooke), (3)INL (INSA Lyon), (4)IBS Company (Rousset)

16:00 **Effects of Zr Doping to Electrical Properties of Si in the SiO2 Matrix** — R P1.3
Varol Gürkan Acar a, Ayse Karataş b, Mücahit Yılmaz c, Ömer Dereli a, Oğuz Doğan a a Department of Physics, A.Kelesoğlu Faculty of Education, Necmettin Erbakan University, Konya, Turkey b Department of Nanoscience&Nanoengineering, Institute of Science, Necmettin Erbakan University, Konya, Turkey c Department of Metallurgical and Material Science, S.A.C. Engineering Faculty, Necmettin Erbakan University, Seydisehir, Konya

16:00 **Luminescent glass-ceramics based on nanoparticles of Ba(x)RE(1-x)F(2+x) and Pb(x)RE(1-x)F(2+x) solid solutions into fluoroborate** — R P1.4
Petrova O.B., Sevostjanova T.S., Khomyakov A.V., Avetissov I.Ch.
Dmitry Mendeleev University of Chemical Technology of Russia

16:00 **Mechanochemical preparation of cellulose-metal nanoparticle composites** — R P1.5
Özge Bayrak, Tutku Bedük, Bilge Baytekin
Chemistry Department, Bilkent University, 06800, Ankara, TURKEY UNAM, Bilkent University, 06800, Ankara, TURKEY

16:00 **Influence of Tribocharges on Stiction in MEMS** — R P1.6
H. Tarik Baytekin
UNAM, Institute of Materials Science and Nanotechnology, Bilkent University, Ankara, 06800, Turkey

16:00 **Organic-Inorganic Hybrid Nanostructures in PolyVinyl Alcohol Matrix: From Synthesis to Optoelectronic Applications** — R P1.7
Bessem BEN DOUDOU, Achraf CHEBIL, Cherif DRIDI
Nanomaterials, Mirosystems for Health, Environment and Energy (NANOMISENE) RD Laboratory LR16CRMN01, Centre for Research on Microlectronics and Nanotechnology (CRMN), Technopark of Sousse, B.P. 334, 4054 Sahloul Sousse TUNISIA

16:00 **Green electroluminescence of Al/Tb/Al/SiO2 devices fabricated by electron beam evaporation** — R P1.8
O. Blázquez,1 J. López-Vidrier,1,2 M. Busquets-Masó,1,3 , L. López-Conesa,1 S. Estradé,1 F. Peiró,1 S. Hernández,1 J. Ibáñez3 and B. Garrido1
1MIND-IN2UB, Department of Engineering: Section of Electronics, Universitat de Barcelona, Martí i Franquès 1, E-08028 Barcelona, Catalonia (Spain). 2IMTEK, Faculty of Engineering, Albert-Ludwigs-University, Freiburg, Georges-Köhler-Allee 103, D-79110 Freiburg (Germany). 3Institute of Earth Sciences Jaume Almera, ICTJA-CSIC, Lluís Soler i Sabarís s/n, E-08028 Barcelona, Catalonia, (Spain)

16:00 **Effect of Pb2+ ions on photoluminescence of ZnS-coated AgInS2 nanocrystals** — R P1.9
I. Podgurska1, A. Rachkov2, L. Borkovska3
1National Technical University of Ukraine &#8220,Igor Sikorsky Kyiv Polytechnic Institute&#8221, 37 Prosp. Peremohy, 03056 Kyiv, Ukraine, Institute of Molecular Biology and Genetics of NASU, 150 Zabolotnogo Str., 03680 Kyiv, Ukraine2, V. Lashkaryov Institute of Semiconductor Physics, 41 Prosp. Nauky, 03028 Kyiv, Ukraine3

16:00 **Ultra-Low-Energy Ion Beam Synthesis of Ag Nanocrystal: Effect of the Matrix on Nucleation and Growth** — R P1.10
M. Carrada (1), B. Pecassou (1), A. Haj Salem (1), G. Ben Assayag (1) L. Dumont (2), J.Cardin (2), F. Gourbilleau (2)
(1) CEMESCEMES/CNRS, Université de Toulouse, 29 rue J. Marvig 31055 Toulouse Cedex 4, France (2) CIMAP, NIMPH, CNRS/CEA/ENSICAEN/UCBN, 14050 CAEN Cedex 4, France

16:00 **Self-organization based fabrication of bimetallic Pd-Pt nanoparticles on transparent conductive oxide substrates** — R P1.11
M. Censabella, F. Ruffino, M. Zimbone, M. G. Grimaldi
M. Censabella, F. Ruffino, M. G. Grimaldi Dipartimento di Fisica e Astronomia Università di Catania, via S. Sofia 64, 95123 Catania, Italy MATIS CNR-IMM via S. Sofia 64, 95123 Catania, Italy M. Zimbone CNR-IMM via S. Sofia 64, 95123 Catania, Italy

16:00 **Electrical properties of doped Si1-xGex nanocrystals embedded in SiO2** — R P1.12
A. Chelouche, G. Ferblantier, D. Muller, D. Mathiot
ICube, CNRS-Unistra, 23 rue du Loess, 67037 Strasbourg Cedex 2, France

16:00 **Nano-sized Rare Earth oxides doping in Ba1-xCax(Ti1-yZry)O3 Lead-free piezoelectric ceramics and their electrical properties** — R P1.13
Chen Zhi-hui1,2 Ding Jian-ning1,2,3 Yuan Ying-yi1,2 Zhu Yuan-yuan1,2 Yang Ya1,2 Li Zhi-wei1,2
1 School of Materials Science and Engineering, Jiangsu Collaborative Innovation Center of Photovolatic Science and Engineering, Changzhou University, Changzhou, 213164, Jiangsu, China 2 Jiangsu Province Cultivation base for State Key Laboratory of Photovoltaic Science and Technology, Changzhou University, Changzhou, 213164, Jiangsu, China 3 Micro/Nano Science and Technology Center, Jiangsu University, Zhenjiang, 212013, China

16:00 **Rb-substituted green CsPbBr3 halide perovskite nanocrystals-mesoporous silica nanocomposite for highly efficient LEDs** — R P1.14
Seung Hee Choi, Young Hyun Song, Bong Kyun Kang, Seok Bin Kwon, Chul Woo Lee, Dae Ho Yoon
School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University(SKKU)

16:00 **Au nanoparticle formation on the electron beam induced pore-membrane** — R P1.15
(1) Seong Soo Choi, Myoung Jin Park, Chu Hee Han, Seh-Joong Oh, (2) Doo Jae Park, (3) Yong-Sang Kim (4) Soo Bong Choi (5) Nam Kyou Park
(1) SunMoon University (2) Hallym University (3) Sungkyunkwan Unviersity (4) Inchon University (5) Seoul National University

16:00 **Morphology, conductivity and photoluminescence properties of the Li2O- xGeO2 glass-ceramics doped with some three charged ions** **R P1.16**
Ya. Rybak(1), V. Chornii(1), S.G. Nedilko(1), V. Scherbatskii(1), M. Trubitsyn(2), M. Volnianskii(2)
(1)Taras Shevchenko National University of Kyiv, 64/13, Volodymyrska Street, 01601 Kyiv, Ukraine, (2)Oles Honchar Dnipropetrovsk National University, 72 Gagarin ave. 49000 Dnipro, Ukraine

16:00 **Quantification and Correlation of Incorporated Hydrogen with Photoluminescence of Silicon Nanoparticles Embedded in SiO2** **R P1.17**
Thawatchart Chulapakorn (1), Ilya Sychugov (2), Sethu Sevada Suvanam (2),Jan Linnros (2), Daniel Primetzhofer (1), Anders Hallén (2)
(1) Uppsala University, Department of Physics and Astronomy, P.O. Box 516 SE 756 43 Uppsala, Sweden, (2) Royal Institute of Technology, School of Information and Communication Technology, P.O. Box Electrum 229, SE 164 40 Kista, Sweden

16:00 **Manipulation of charge storage properties by using 2D arrays of well separated Ge quantum dots in crystalline HfO2** **R P1.18**
Ana-Maria Lepadatu, Catalin Palade, Adrian Slav, Adrian Valentin Maraloiu, Sorina Lazanu, Toma Stoica, Constantin Logofatu, Valentin Serban Teodorescu, Magdalena Lidia Ciurea
National Institute of Materials Physics, Romania

16:00 **Formation of nano-graphene domains in the bulk of SiC substrates by ion implantation** **R P1.19**
C. Bonafos, V. Ioannou-Sougleridis, P. Normand and P. Dimitrakis
CEMES-CNRS et Université de Toulouse, nMat group, BP 94347, 31055 Toulouse Cedex 4, France, Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research ?Demokritos?, P.O. Box 60228, Aghia Paraskevi, 15310 Athens, Greece,Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research ?Demokritos?, P.O. Box 60228, Aghia Paraskevi, 15310 Athens, Greece,Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research ?Demokritos?, P.O. Box 60228, Aghia Paraskevi, 15310 Athens, Greece,

16:00 **Efficiency Enhancement of ZnO-based solar cell by using optimized metallic nanoparticles** **R P1.20**
Hichem Ferhati1, Fayçal Djeffal 1,2,* and Djemai Arar1
1LEA, Department of Electronics, University of Batna 2, Batna 05000, Algeria.
2LEPCM, University of Batna 1, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna2.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

16:00 **Formation and electrical properties of GaSe0.75S0.25 nanoparticles embedded in SeO2 matrix on a cleaved surface of layered GaSe** **R P1.21**
S.I. Drapak (1), V.D. Fotiy (1), S.V. Gavrylyuk (2), O.I. Fediv (3)
(1) Photon-Quartz Design & Technology Ltd., 246 Golovna Str., Chernivtsi, 58000, Ukraine, e-mail: sdrapak@ukr.net, (2) Yuriy Fedkovych Chernivtsi National University, 2 Kotsyubynskii Str., 58012, Chernivtsi, Ukraine, (3) Bukovinian State Medical University, 2 Theatre Sq., 58000, Chernivtsi, Ukraine.

16:00 **Electrical and dielectric properties of In nanoparticles embedded in Se2O5 dielectric matrix formed on a cleaved surface of InSe** **R P1.22**
S.I. Drapak (1), V.D. Fotiy (1), S.V. Gavrylyuk (2)
(1) Photon-Quartz Design & Technology Ltd., 246 Golovna Str., Chernivtsi, 58000, Ukraine, e-mail: sdrapak@ukr.net, (2) Yuriy Fedkovych Chernivtsi National University, 2 Kotsyubynskii Str., 58012, Chernivtsi, Ukraine.

16:00 **Mechanochemical synthesis of nanoparticles** **R P1.23**
Ana P.C. Ribeiro, Elisabete C.B.A. Alegria, Armando J.L.Pombeiro, Alessandro Fantoni
Centro de Química Estrutural, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal, ISEL-ADEQ, Lisboa, Portugal, ISEL-ADEETC, Lisboa, Portugal

16:00 **A simulation study of surface plasmons in metallic nanoparticles: dependence on the properties of an embedding a-Si:H matrix** **R P1.24**
Alessandro Fantoni, Miguel Fernandes, Yuriy Vygranenko, Paula Louro, Manuela Vieira, Elisabete Alegria, Ana Ribeiro, Daniela Texeira
ISEL-ADEETC, Lisbon Portugal, CTS-UNINOVA, Lisbon Portugal, FCT-UNL/DEE, Lisbon Portugal, ISEL-ADEQ, Lisbon Portugal, IST, Lisbon Portugal

16:00 **Fluoride reactivity in silica-based optical fibers context** **R P1.25**
Hussein Fneich 1 - 2, Manuel Vermillac 2, Daniel R. Neuville 3, Ahmad Mehdi 1, Wilfried Blanc 2
1. University of Montpellier, ICGM, CNRS UMR 5253, 34095 Montpellier Cedex 5, France , 2. University of Côte d'Azur, CNRS UMR 7010, INPHYNI, Parc Valrose 06108 Nice Cedex 2, France , 3. Institute of Earth Physics of Paris, Sorbonne Paris-Cité, CNRS UMR 7154, 75005 Paris, France

16:00 **High-pressure optical and vibrational properties of silicon nanocrystals** **R P1.26**
M. Busquets-Masó,1,2 O. Blázquez,2 J. López-Vidrier,2,3 A. Geyer,1 R. Oliva,1 D. Hiller,3 M. Zacharias,3 J. Valenta,4 B. Garrido,2 S. Hernández,2 and J. Ibáñez1
1Institute of Earth Sciences Jaume Almera, ICTJA-CSIC, Lluís Soler i Sabarís s/n, 08028 Barcelona, Catalonia, Spain. 2MIND-IN2UB, Departament d'Enginyeries: Electrònica, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona, Catalonia, Spain. 3IMTEK, Faculty of Engineering, Albert-Ludwigs-University Freiburg, Georges-Köhler-Allee 103, D-79110, Freiburg, Germany. 4Faculty of Mathematics and Physics, Charles University, Ke Karlovu 3, 121 16 Prague 2, Czech Republic.

16:00 **Novel and Facile Low Temperature Synthesis (Below 100°C) of Nano-sized Eu3+ Activated BaTiO3** **R P1.27**
Usama Bin Humayoun*, Yung-Hyun Song*, Kenji Toda+, Takaki Masaki* and Dae-Ho Yoon*
*School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, South Korea. +Graduate School of Science and Technology Niigata University, Niigata, Japan.

16:00 **Surface modification of zinc oxide nanowires with polymer P3DDT** **R P1.28**
Ml&#268,OVÁ Júlia *1, ¦TENCLOVÁ Pavla2, REME¦ Zden&#283,k 2,3
1Institute of Chemistry SAS, Bratislava, Slovak Republic, EU 2Institute of Physics CAS, Czech Republic, EU 3Faculty of Biomedical Engineering CTU in Prague, Kladno, Czech Republic, EU

16:00 **Nano-Scale Insulation Effect of Core-Shell Nanoparticles for Dielectric Composites** **R P1.29**
Hyun Min Jung, Sunwoo Lee, Yong Seok Kim, Jong Chan Won
Department of Applied Chemistry, Kumoh National Institute of Technology, Department of Chemistry, Chonnam National University, Gwangju, Advanced Materials Division, Korea Research Institute of Chemical Technology, Advanced Materials Division, Korea Research Institute of Chemical Technology

16:00 **Design of Highly Durable Piezoelectric Nanogenerator Based on Self-Poled PVDF/AlO-rGO Nanocomposite with High Power Density** **R P1.30**
Sumanta Kumar Karan, Bhanu Bhusan Khatua
Materials Science Centre, Indian Institute of Technology Kharagpur, Kharagpur 721302

16:00 **Photoluminescence Properties of Zr Doped Si Nanocrystals in SiO2 Dielectric Matrix** **R P1.31**
Ayse Karatas a, Remzi Dag a, Varol Gurkan Acar b, Mucahit Yilmaz c, Omer Dereli b
a Department of Nanoscience&Nanoengineering, Institute of Science, Necmettin Erbakan University, Konya, Turkey b Department of Physics, A.Kelesoğlu Faculty of Education, Necmettin Erbakan University, Konya, Turkey c Department of Metallurgical and Material Science, S.A.C. Engineering Faculty, Necmettin Erbakan University, Seydisehir, Konya

16:00 **Sorting protocol for the selection of ultra-thin silicon nanowires synthesized via an inductively coupled plasma process** **R P1.32**
V. Le Borgne (1), M. Agati (1,2,3), P. Castrucci (4), R. Dolbec (5), M. De Crescenzi (4), S. Boninelli (2) and M. A. El Khakani (1)
(1) Institut National de la Recherche Scientifique, Centre-Énergie, Matériaux et Télécommunications, 1650, Boulevard. Lionel?Boulet, Varennes, Qc, Canada J3X-1S2 (2) CNR-IMM, Via S. Sofia 64, 95123 Catania, Italy (3) Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy (4) Università di Roma Tor Vergata, Via della Ricerca Scientifica 1, 00133 Roma, Italy (5) Tekna Plasma Systems Inc., 2935, Blvd. Industriel, Sherbrooke, QC, Canada, J1L-2T9

Electronics : C. Delerue and B. Garrido

08:30 **Resistance switching in silicon-rich silica: electronic, structural and photonic perspectives** — R 7.1
A. J. Kenyon(1), A. Mehonic(1), M. S. Munde(1), W.H. Ng(1), M. Buckwell(1), L. Montesi(1), K. Zarudnyi(1), M. Bosman(3), T. Gerard(1), A.L. Shluger(2)
(1) Department of Electronic and Electrical Engineering, University College London, London WC1E 6BT, UK, (2) Department of Physics and Astronomy, University College London, London WC1E 6BT, UK, (3) Institute of Materials Research and Engineering, 2 Fusionopolis Way, 138634, Singapore

09:00 **Tailoring resistive, capacitive and synaptic properties of forming free TiO2-x-based RRAM devices by embedded Pt and Ta nanocrystals** — R 7.2
P. Bousoulas1 , I. Karageorgiou1, V. Aslanidis1, K. Giannakopoulos2, D. Tsoukalas1
1 Department of Applied Physics, National Technical University of Athens, Iroon Polytechniou 9 Zografou, 15780 Athens, Greece 2 Institute of Nanoscience and Nanotechnology, NCSR ?Demokritos?, Aghia Paraskevi, 15310 Athens, Greece

09:15 **Structural and electrical characterization of SiAlON memristors: the role of oxygen vacancies in the electroforming process** — R 7.3
O. Blázquez,1 G. Martín,1 I. Camps,2 J.M. Ramírez,1 S. Hernández,1 S. Estradé,1 F. Peiró,1 R. Serna,2 A. Cornet1 and B. Garrido1
1MIND-IN2UB, Departament d'Enginyeries: Secció Electrònica, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain. 2Laser Processing Group, Instituto de Óptica, CSIC, C/ Serrano 121, E-28006 Madrid, Spain.

09:30 **Pt nanoislands embedded in Al2O3 matrix: from ALD-based fabrication to structural and electrical characterization** — R 7.4
Daniel Thomas1, Etienne Puyoo1, Martine Le Berre1, Liviu Militaru1, Siddardha Koneti2, Annie Malchère2, Lucian Roiban2, Andrei Sabac1, David Albertini1, Bruno Canut1, Francis Calmon1, B. Gautier1
1: INL, INSA Lyon, UMR CNRS 5270, 69621 Villeurbanne Cedex 2: MATEIS, INSA-Lyon, UMR CNRS 5510, 69621 Villeurbanne Cedex

09:45 **Adjustable Electromagnetic Shielding Efficiency by Compressible Light Weight Porous PDMS/Fe3O4 Decorated RGO - SWCNH composite** — R 7.5
Ranadip Bera and Bhanu Bhusan Khatua*
Materials Science Centre, Indian Institute of Technology, Kharagpur-721302, India

10:00 **Coffee Break**

10:30 **Polyvinyl Chloride and ZnSnO3 Nanoparticles Based Nanocomposite:A High Output Power and Durable Piezoelectric Nanogenerator** — R 7.6
Sarbaranjan Paria, Dr. Bhanu Bhusan Khatua
Materials Science Centre, Indian Institute of Technology, Kharagpur-721302, India

10:45 **Indium-Oxide Nanoparticles for RRAM Integration in Non-Volatile Memory Applications.** — R 7.7
Edgar León Pérez1, Oumaïma Abouzaid1, Khaled Ayadi1, Nicolas Baboux1, Liviu Militaru1, Jérémy Moeyaert2, Thierry Baron2, Abdelkader Souifi1, Pierre-Vincent Guenery1.
1 Institute of Nanotechnologies of Lyon UMR CNRS 5270, INSA de Lyon, 69621 Villeurbanne Cedex, 2 Univ. Grenoble Alpes, LTM, F-38000 Grenoble, France - CNRS, LTM, F-38000 Grenoble, France.

11:00 **Single electron transport in graphene/quantum-dots hybrid material: towards large area single electron devices.** — R 7.8
L. D. N. Mouafo, F. Godel, G. Froehlicher, S. Berciaud, B. Doudin, Y. Henry, D. Halley and J-F. Dayen.
Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS). Université de Strasbourg. CNRS UMR 7504, 23 rue du Loess, BP 43 F-67034 Strasbourg Cedex 2, France.

11:15 **Properties of metallic nanoparticules / a-Al2O3 nanocomposites deposited by a sputtering based gas aggregation source** — R 7.9
V. Orozco Montes, F. Dumas-Bouchiat, C. Jaoul, P. Tristant
Univ. Limoges, CNRS, SPCTS, UMR 7315, F-87000 Limoges, France.

11:30 **Size-induced enhanced magnetoelectric effect in chromium oxide nanoclusters in a MgO matrix** — R 7.10
David Halley, Nabbil Najjari, Hicham Majjad, Loïc Joly, Philippe Ohresser, Fabrice Scheurer, Corinne Ulhaq-Bouillet, Stéphane Berciaud, Bernard Doudin et Yves Henry
David Halley, Nabbil Najjari, Hicham Majjad, Loïc Joly, Fabrice Scheurer, Corinne Ulhaq-Bouillet, Stéphane Berciaud, Bernard Doudin, Yves Henry Institut de Physique et Chimie des Mate´riaux de Strasbourg, Université de Strasbourg, CNRS UMR 7504, 23 rue du Loess, BP 43, F-67034 Strasbourg Cedex 2, France. Philippe Ohresser Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, F-91192 Gif-sur-Yvette, France.

11:45 **Mn-Doped SnO2 Transparent Thin Film for Multi-State Resistive Switching** — R 7.11
Zhemi Xu, Adnan Younis, Dewei Chu, Sean Li
Zhemi Xu, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia, Adnan Younis, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia, Dewei Chu, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia, Sean Li, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia

12:00 **Lunch**

Photonics 2 : H. Rinnert

13:30 **Enhanced light absorption in Ge quantum dot multilayers** — R 8.1
R. Raciti1, R. Bahariqushchi2, C. Summonte3, A.M. Mio4, G. Nicotra4, A. Aydinli2, S. Mirabella1, A. Terrasi1
1. MATIS CNR-IMM 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, via Gobetti 101-40129 Bologna, Italy 4. IMM-CNR, VIII strada 5, 95121 Catania, ITALY

14:00 **Ge nanocrystals in TiO2 with tunable photosensing properties** — R 8.2
Adrian Slav, Catalin Palade, Ana-Maria Lepadatu, Valentin Serban Teodorescu, Monica Enculescu, Sorina Lazanu, Toma Stoica, Magdalena Lidia Ciurea
National Institute of Materials Physics, Romania

14:15 **Thermo-optical response of semiconductor CuCl nanocrystals embedded in a glass matrix for optical switching applications** — R 8.3
E. Haro-Poniatowski (1,2), M. Jiménez de Castro (2), I. Camarillo (1), A. Mariscal (2), and R. Serna (2).
(1) Departamento de Física Universidad Autónoma Metropolitana, Apartado Postal 55-534, México 09340, DF, México, ?(2) Laser Processing Group, Instituto de Óptica, CSIC, Serrano 121, 28006 Madrid, Spain.

14:30 **Improving efficiency of perovskite nanoparticle-based LEDs by nanoparticle synthesis control** — R 8.4
Bevita K. Chandran, Sjoerd A. Veldhuis, Ajay Perumal, Xin Yu Chin, Nripan Mathews, Subodh Mhaisalkar, Xiaodong Chen
Energy Research Institute@NTU (ERI@N), Research TechnoPlaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553 Singapore & Interdisciplinary Graduate School, Nanyang Technological University, 50 Nanyang Avenue, 639798 Singapore & School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798 Singapore, Energy Research Institute@NTU (ERI@N), Research TechnoPlaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553 Singapore, Energy Research Institute@NTU (ERI@N), Research TechnoPlaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553 Singapore, Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371 & Energy Research Institute@NTU (ERI@N), Research TechnoPlaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553 Singapore, Energy Research Institute@NTU (ERI@N), Research TechnoPlaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553 Singapore & School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798 Singapore, Energy Research Institute@NTU (ERI@N), Research TechnoPlaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553 Singapore & School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798 Singapore, School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798 Singapore

14:45 **Deposition of Al/LiF nanocomposite by means of high pressure magnetron sputtering and thermal evaporation co-deposition** — R 8.5
Jiří Bulíř, Tomáš Zikmund, Michal Novotný, Ján Lančok, Ladislav Fekete, Jaromír Kopeček
Institute of Physics of the Czech Academy of Sciences, Na Slovance 2, 182 21 Prague 8, Czechia

15:00 **Microwave absorber using lightweight industrial waste cenosphere** **R 8.6**
Pritom J Bora, Sai kiran, K.J. Vinoy and Praveen C Ramamurthy and Giridhar Madras
Interdisciplinary Centre for Energy Research (ICER), Department of Materials Engineering,Department of Electrical and Communication Engineering, Indian Institute of Science, Bangalore-560012, India.

15:15 **Mechanical oscillations in lasing microspheres** **R 8.7**
A.Toncelli1, N. E. Capuj2, B. Garrido3, C. Sotomayor-Torres4,5, A. Tredicucci1, D. Navarro-Urrios5
1 NEST, CNR Istituto Nanoscienze and Dipartimento di Fisica, Università di Pisa, Largo Pontecorvo 3, 56127 Pisa, Italy, 2 Depto. Fisica, Universidad de la Laguna, La Laguna, Spain, 3 MIND-IN2UB, Departament d'Electrònica, Facultat de Física, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona, Spain, 4 Catalan Institute for Research and Advances Studies ICREA, Barcelona, Spain, 5 Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain

15:30 **Two-Photon Luminescence and Second-Harmonic Generation in Organic Nonlinear Surface Comprised of Self-Assembled Frustum Shaped Organic Microlasers** **R 8.8**
Dasari Venkatakrishnarao, Yemineni S. L. V. Narayana, Mahamad A. Mohaiddon, Evgeniy A. Mamonov, Irina A. Kolmychek, Anton I. Maydykovskiy, Vladimir B. Novikov, Tatiana V. Murzina,, and Rajadurai Chandrasekar*
Dasari Venkatakrishnarao , Research Scholar, Yemineni S. L. V. Narayana, Research Scholar, Mahamad A. Mohaiddon , Professor in Physics, Evgeniy A. Mamonov , Research Scholar, Irina A. Kolmychek , Research Scholar, Anton I. Maydykovskiy , Research Scholar, Vladimir B. Novikov , Research Scholar, Tatiana V. Murzina , Professor in Physics, Rajadurai Chandrasekar* , Professor in Materials Chemistry

15:45 **Coffee Break**

Thursday 25 May 2017

Biosensing : D. Pacifici

08:45 **Nanostructured SPR biochips** **R 9.1**
Julien Moreau1, Mitradeep Sarkar1, Aurore Olivéro1, Jean-François Bryche1, Michael Canva1,2
1Laboratoire Charles Fabry, Institut d&#8217,Optique Graduate School, CNRS, Université&#769, Paris Saclay, 91227 Palaiseau, France 2Laboratoire Nanotechnologie Nanosystème (LN2),UMI CNRS 3463, 3IT, Université de Sherbrooke, Québec, Canada

09:15 **Molecular Plasmonics: strong coupling at the low molecular density limit** **R 9.2**
Lihi Efremushkin, Maxim Sukharev, Adi Salomon
Department of Chemistry, Institute of Nanotechnology and Advanced Materials (BINA), Bar-Ilan University, Ramat-Gan 5290002, Israel, Arizona State University, Mesa, AZ 85212, USA, Department of Chemistry, Institute of Nanotechnology and Advanced Materials (BINA), Bar-Ilan University, Ramat-Gan 5290002, Israel

09:30 **Assembly of Iron Oxide Nanoparticles on Gold Substrates for Biosensing Application** **R 9.3**
Mathias DOLCI1, Jean-François BRYCHE2, Spiros ZAFEIRATOS3, Fouzia BOULMEDAIS4, Xavier CATTOEN 5, Sylvie BEGIN-COLIN1, Gregory BARBILLON2, Benoit P. PICHON1
1 Université de Strasbourg, CNRS, IPCMS, UMR 7504, 23 rue du Loess BP43, 67034 Strasbourg Cedex 2, France 2 Institut d'Electronique Fondamentale, (UMR 8622), rue Ampère, 91405 Orsay Cedex, France 3 Université de Strasbourg, CNRS, ICPEES, UMR 7515, 25 rue Becquerel 67087 Strasbourg Cedex 2, France 4 Université de Strasbourg, CNRS, ICS, UPR22, 75 rue Becquerel 67200 Strasbourg Cedex 2, France 5 Institut Néel, (UPR 2940), 25 Rue des Martyrs, 38042 Grenoble Cedex 9, France

09:45 **Direct synthesis of Ag nanoparticles in a TiO2 matrix for antibacterial coatings by supersonic cluster beam deposition** **R 9.4**
G. Benetti1,2, E. Cavaliere2, N. Winckelmans3, S. Bals3, J. Verbeeck3, M. Chiodi4, L. Pallecchi5, G. Landini5, M. J. Van Bael1, L. Gavioli2*
1 KU Leuven, Laboratory of Solid State Physics and Magnetism, Department of Physics and Astronomy Celestijnenlaan 200D, B-3001, Leuven, Belgium, 2 Interdisciplinary laboratories for advanced materials physics (i-LAMP) and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, 25121 Brescia, Italy, 3 EMAT- University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium, 4 Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining and Interface Technology, Überlandstrasse 129, 8600 Dübendorf, Switzerland, 5 Dipartimento di Biotecnologie Mediche, Università degli Studi di Siena, Policlinico Santa Maria alle Scotte, Siena, Italy

10:00 **Coffee Break**

10:30 **Multifunctional nanaparticles for tracking and imaging with potential applications in radiotherapy** **R 9.5**
Magali Lavenas, Marina Simon, Hervé Seznec, Luis D. Carlos,Joao Rocha, Marie-Hélène Delville
CNRS, Université de Bordeaux, ICMCB, Pessac, France & Universidade de Aveiro, CICECO, Aveiro, Portugal , CNRS, Université de Bordeaux, CENBG, UMR 5797, Gradignan, France , CNRS, Université de Bordeaux, CENBG, UMR 5797, Gradignan, France, Universidade de Aveiro, CICECO, Aveiro, Portugal, Universidade de Aveiro, CICECO, Aveiro, Portugal, CNRS, Université de Bordeaux, ICMCB, Pessac, France

10:45 **Biodistribution of the fluorescent, biodegradable ZnO nanoparticles in the living organism** **R 9.6**
P. Kielbik1,2, J. Kaszewski1,2,3, E. Wolska 3, B. S. Witkowski 3, M. A. Gralak 2, Z. Gajewski 1, M. Godlewski 3, M. M. Godlewski1,2
1 WULS, Veterinary Research Centre, Centre for Biomedical Research, Department of Large Animal Diseases with Clinic, FVM, Warsaw, Poland 2 WULS, Department of Physiological Sciences, FVM, Warsaw, Poland 3 Institute of Physics, PAS, Warsaw, Poland

11:00 **Reusable nanocomposite layers with embedded silver nanoparticles for biosensing applications using the "spectro-inside" concept** **R 9.7**
A. Scarangella,1,2,3 A. Pugliara,1,3 C. Bonafos,3 B. Pécassou,3 R. Carles,3 E. Navarro,4 M.-C. Sancho,4 M. Soumbo,1,5 C. Roques,5 M.-C. Monje,5 and K. Makasheva1
1LAPLACE (Laboratoire Plasma et Conversion d'Energie), Université de Toulouse, CNRS, UPS, INPT, 118 route de Narbonne, F-31062 Toulouse cedex 9, France. 2FERMaT (Fédération de recherche FR3086), Université de Toulouse, CNRS, UPS, INPT, INSA, 3CEMES (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 4IPE (Instituto Pirenaico de Ecología)-CSIC, Avda. Montañana 1005, Zaragoza 50059, Spain 5LGC (Laboratoire de Génie Chimique), Université de Toulouse, CNRS, UPS, INPT, 35 chemin des maraîchers, F-31062 Toulouse cedex 9, France

11:15 **On the potential use of nanostructured ITO electrodes as amperometric biosensors** **R 9.8**
Raquel Pruna (a), Francisco Palacio (a), Juan Pablo Salvador (b,c), Mònica Martínez (d), Oriol Blázquez (a), Sergi Hernández (a), Blas Garrido (a), Maria Pilar Marco (b), Manel López (a)
(a) Departament d'Enginyeries: Electrònica, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain, (b) Nanobiotechnology for Diagnostics group (Nb4D), IQAQ-CSIC, C/ Jordi Girona 18-26, E-08028 Barcelona, Spain, (c) Centro de Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), C/ Monforte de Lemos 3-5, E-28029 Madrid, Spain, (d) Departament d'Enginyeria de Materials i Química Física, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain

11:30 **On the interaction of Red Fluorescent Protein?DsRed with silver based nanocomposites for biosensing applications** **R 9.9**
A. Scarangella (1,2,3), M. Soumbo (1,4), A. Mlayah (3), C. Bonafos (3), M.-C. Monje (4), C. Roques (4), A. Pugliara (1,3) and K. Makasheva (1)
(1)LAPLACE (Laboratoire Plasma et Conversion d?Energie), Université de Toulouse, CNRS, UPS, INPT, (2)FERMaT (Fédération de recherche FR3086), Université de Toulouse, CNRS, UPS, INPT, INSA, 118 route de Narbonne, F-31062 Toulouse cedex 9, France, (3)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, (4)LGC (Laboratoire de Génie Chimique), Université de Toulouse, CNRS, UPS, INPT, 35 chemin des maraîchers, F-31062 Toulouse cedex 9, France.

11:45 **Micro-sized humidity sensors with porous 3D networks of gold nanospheres** **R 9.10**
Marco A. Squillaci, Marc-Antoine Stoeckel, Paolo Samorì.
Université de Strasbourg, CNRS, ISIS, F-67000 Strasbourg, France.

12:00 **Lunch**

Photovoltaics : A. Terrasi

13:30 **Frequency conversion layers for an efficient light management of Si-based solar cell** **R 10.1**
Fabrice Gourbilleau 1*, Julien Cardin 1, Lucile Dumont 1, Anaïs Gouesmel 1, Omar Ibrahim Elmi 2, Tao Xu 3, Marzia Carrada 4, O. Robbe 2, Didier Stievenard 5, Ing-Song Yu 6, Christophe Labbé 1, Hocine Merabet 7.
1 CIMAP, NIMPH, CNRS/CEA/ENSICAEN/UCBN, 14050 CAEN Cedex 4, France 2 PHLAM, UMR8523, Université de Lille 1, 59652 VILLENEUVE D'ASCQ Cedex, France 3 CEMES/CNRS, Université de Toulouse, 29 rue J. Marvig 31055 Toulouse Cedex 4, France 4 Key Laboratory of Advanced Display and System Application, Shanghai University, 149 Yanchang Road, Shanghai 200072, People's Republic of China 5 IEMN, UMR8520, Université de Lille1, 59652 Villeneuve d'Ascq Cedex, France 6 Department of Materials Science and Engineering, National Dong Hwa University, Hualien, Taiwan 7 Department of Mathematics, Statistics, and Physics, College of Arts and Sciences, Qatar University, Doha, Qatar

14:00 **Nanoimprinted Plasmon-Enhanced Perovskite Solar Cells** **R 10.2**
Stylianos Siontas, Onkar Game, Sophia Gluskin-Braun, Giorgio Savini Zangrandi, Angus Kingon, Nitin P. Padture, and Domenico Pacifici
School of Engineering, Brown University, Providence RI, 02912

14:30 **Embedded plasmonic nanoparticles in high refractive index TiOx matrix for photovoltaics applications** **R 10.3**
Francesco Pastorelli
Organic Energy Materials, Department of Energy Conversion and Storage, Technical University of Denmark, Frederiksborgvej 399, 4000, Roskilde, Denmark

14:45 **Optical behavior of gold-silica core-shell nanospheres embedded in an organic buffer matrix for plasmonic solar cells** **R 10.4**
Kekeli N'Konou a , Véronique Many b , Mona Treguer-Delapierre b , Philippe Torchio a
(a) Aix-Marseille University, Institut Matériaux Microélectronique Nanosciences de Provence-IM2NP, CNRS-UMR 7334, Domaine Universitaire de Saint-Jérôme, Service 231, 13397 Marseille Cedex 20, France. (b) University of Bordeaux, Institut de Chimie de la Matière Condensée de Bordeaux, ICMCB, CNRS-UPR 9048, 33600 Pessac, France.

15:00 **The effect of size, composition and surrounding medium of metal nanoparticles on surface plasmon-enhanced silicon solar cells** **R 10.5**
Leila Manai1, Bechir Dridi Rezgui1, Rabia Benabderrahmane Zaghouani1, Damien Barakel2, Philippe Torchio2, Olivier Palais2 and Brahim Bessais2
1 Photovoltaic Laboratory, Research and Technology Center of Energy (CRTEn), B. P N°95-2050 Hammam Lif, Tunisia 2 Institut Matériaux Microélectronique Nanosciences de Provence-IM2NP, Aix Marseille Université, CNRS-UMR 7334, Domaine Universitaire de saint Jérôme, Service 231, 13397 Marseille Cedex, France

15:15 **Optoelectronic Simulations for Quantum Dot based Devices** **R 10.6**
S. Illera, J. D. Prades, A. Cirera
Institut Català de Nanociència i Nanotecnologia (ICN2) and Institut de Ciència de Materials de Barcelona (ICMAB), CSIC and BIST, Campus de la UAB, 08193 Bellaterra (Barcelona), Spain , MIND-IN2UB, Department of Engineering: Electronics, Universitat de Barcelona, c/ Martí i Franquès 1, E-08028 Barcelona, Spain, MIND-IN2UB, Department of Engineering: Electronics, Universitat de Barcelona, c/ Martí i Franquès 1, E-08028 Barcelona, Spain

15:30 **Coffee Break**

Poster Session : D. Pacifici, B. Garrido

16:00 **High-yield Synthesis of Monodisperse Polyhedral Gold Nanoparticles for NADH Amperometric Sensor** **R P2.1**
Sih-Ting Lu, Yu-Cheng Liu and Yao-hsuan Tseng*
Department of Chemical Engineering, National Taiwan University of Science and Technology

16:00 **Size, structural and optical properties of Zn/ZnO colloidal nanoparticles prepared by DC arc discharge in liquid** **R P2.2**
Azin Ziashahabi, Reza Poursalehi, Naimeh Naseri
Department of Materials Engineering, Tarbiat Modares University, Tehran, Iran ,
Department of Materials Engineering, Tarbiat Modares University, Tehran, Iran,
Department of Physics, Sharif University of Technology,Tehran, Iran

16:00 **Nanosecond and femtosecond laser irradiation of metal nano composite glass obtained through ionic exchange or by direct metal in** **R P2.3**
Mohamed Chérif Sow, Jean Philippe Blondeau, Nadia Pellerin, Eric Millon, Chantal Leborgne, Najib Semmar
GREMI 14 rue d'Issoudun, BP6744 45067 Orléans Cedex 2, CEMHTI 1 Avenue de la Recherche Scientsifique, 45100 Orléans

16:00 **Gating electron flow of passivated conductive nanowires for polymer nanocomposites of resistance switching capability** **R P2.4**
Woojin Jeon, Youngjin Kim, Sang-Soo Lee
KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Korea, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology, Seoul, Korea

16:00 **Studies on construction and performance of a new chitosan hydrogel and its advantage as an antibacterial nanomedicine carrier** **R P2.5**
Wu Zhuona, Zhu Xiaoxia, Gao Lei
Laboratory of Drug Metabolism and Pharmacokinetics, Institute of Transfusion Medicine, AMMS.

16:00 **Theoretical Design of Piezoelectric Nanogenerator Based on Composite of PZT Nanowires and Polymers** **R P2.6**
Xin Cui 1, Xia Ni 1,*, Yan Zhang 2,*
1 Institute of Nanoscience and Nanotechnology, School of Physical Science and Technology, Lanzhou University, Lanzhou 730000, China. Email: x.ni@lzu.edu.cn (XN)
2 School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu 610054, China. Email: zhangyan@uestc.edu.cn (YZ)

16:00 **Application of the terahertz spectroscopy for characterization of carbon nanotube distribution in a deilectric matrix** **R P2.7**
M. V. Shuba, D. Yuko, S. A. Maksimenko
Institute for Nuclear Problems, Belarus State University, Minsk, Belarus,

16:00 **Gold inverse opals and their application in surface-enhanced Raman spectroscopy** **R P2.8**
N M Martynova, A V Grigorieva, E A Goodilin
Department of Materials Science, Lomonosov Moscow State University

16:00 **A good performance glucose biosensor constructed by nanomaterials** **R P2.9**
Xiaoxia Zhu, Zhuona Wu
Laboratory of Drug Metabolism and Pharmacokinetics, Institute of Transfusion Medicine, AMMS

16:00 **Ultrasensitive detection of flu virus oligonucleotides based on hybrid upconversion nanoprobe/nanoporous membrane system** **R P2.10**
Ming-Kiu Tsang1, Yuen-Ting Wong1, Yadi Fan2, Mo Yang2, Jianhua Hao1
1: Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, P. R. China 2: Interdisciplinary Division of Biomedical Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, P. R. China

16:00 **Inorganic-organic 3D Inkjet Printable Dielectric Ink with Optimized Ink Printability** **R P2.11**
JaeYun PARK 1,2, Hyun Woo YOON 1, Yi Young KANG 1, No Kyun PARK 1, Yun Ho KIM 1,2, Jong Chan WON 1,2
1. Center for Advanced Functional Polymers, Korea Research Institute of Chemical Technology(KRICT), Daejeon, Korea 2. University of Science and Technology(UST), Daejeon, Korea

16:00 **ZnS:Cu(Mn) Nanocomposites Based on Porous Anodic Alumina Oxide Films for Optoelectronics** **R P2.12**
Rishat Valeev, Andrey Chukavin, Artemii Beltiukov, Alexander Trigub, Vladimir Vetoshkin, Dmitry Petukhov, Alexander Alalykin, Ivan Elkin, Tatiana Kartapova
Physical-Technical Institute of Ural Brunch of RAS, Izhevsk, Russia, National Research Center “Kurchatov Institute”, Moscow, Russia, Moscow State University, Faculty of Materials Science, Moscow, Russia

16:00 **Plasmonic tuning of Ag/Au bimetallic nanoparticles by laser-induced dewetting** **R P2.13**
Yoonseok Oh, Jeeyoung Lee, Minseok Seo, Harim Oh, Jaeyong Kim, Myeongkyu Lee
Department of Materials Science and Engineering, Yonsei University, Seoul, 120-749, Republic of Korea

16:00 **Full Color Reflective Display with Colloidal Photonic Crystal in Non-aqueous Medium Operating at Low DC Voltage** **R P2.14**
Eunseon Park, Wonmok Lee
Department of Chemistry, Sejong University, Seoul, Korea

16:00 **Spectrometry study of the YAG:Ce-PMMA hybrid materials for light conversion in optoelectronic applications** **R P2.15**
V. Tucureanu1, 2*, A. Matei1, A. Avram1, I. Mihalache1, B.C. Tincu1, M. Avram1, C.V. Marculescu1, R. Marinescu1, T. A.Burinaru1, M.Volmer3, D. Munteanu2
1National Institute for Research and Development in Microtehnologies (IMT-Bucharest) 2Transilvania University of Brasov, Department of Materials Science 3Transilvania University of Brasov, Electrical Engineering and Applied Physics Department
*Corresponding author: e-mail: vasilica.tucureanu@imt.ro

16:00 **Enhancement of electrical properties of implanted silicon solar cells combining thin tunneling Al2O3 layer passivation with Ag** **R P2.16**
Omar Ibrahim Elmi1, J. Cardin3, Tao Xu2, F. Gourbilleau3, O. Robbe1 , C. Krzeminski4 and D.Stiévenard4
1: PHLAM, UMR8523, Université de Lille 1, 59652 Villeneuve d’Asq Cédex, France 2: Key Laboratory of Advanced Display and System Application, Shanghai University, 149 Yanchang Road, Shanghai 200072, People’s Republic of China 3 : CIMAP, CRNS/CEA/ENSICAEN/UCBN, 6 boulevard Maréchal Juin, 14050 Caen Cedex 4 4: IEMN, UMR8520, Université de Lille1, 59652 Villeneuve d’Ascq Cédex, France

16:00 **Spectroscopic ellipsometry studies of SiOx films irradiated with high energy electrons** **R P2.17**
T. Hristova-Vasileva1, P. Petrik2, D. Nesheva1, S. Kaschieva1, S. N. Dmitriev3
1 - Institute of Solid State Physics, Bulgarian Academy of Sciences,72 Tzarigradsko Chaussee Blvd,1784 Sofia, Bulgaria 2 - Centre for Energy Research, Hungarian Academy of Sciences, H-l12l Budapest, Konkoly Thege Miklos ut 29-33, Hungary 3 - Joint Institute for Nuclear Research, Flerov Laboratory of Nuclear Reactions, Dubna, Moskow region 141980, Russia

16:00 **Atomic layer deposition of HfO2 on MoS2 with an Hf seed layer** **R P2.18**
Hoijoon Kim(1), Taejin Park(2,3), Seongjae Park(1), Mirine Leem(1), Wonsik Ahn(1), Seong-Jun Jeong(4), Seongjun Park(4), Yunseok Kim(1), and Hyoungsub Kim(1)*
(1) School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 16419, Korea (2) Semiconductor R&D Center, Samsung Electronics, Hwaseong 18488, Republic of Korea (3) Department of Semiconductor and Display Engineering, Sungkyunkwan University, Suwon 16419, Korea (4) Nano-Electronics Lab., Devices System Research Center, Samsung Advanced Institute of Technology, Suwon 16678, Korea

16:00 **Bismuth-based nanoparticles in silicon compatible rare eaths compounds** **R P2.19**
A. Scarangella1,2,3, S. Boninelli1, G. Amiard1, G. Franzò1, R. Reitano3, F. Priolo1, 3, 4, M. Miritello1
1 CNR IMM-MATIS, Via S. Sofia 64, 95123 Catania, Italy 2 CNRS LAPLACE, Université Paul Sabatier, 118 route de Narbonne, 31062, Toulouse Cedex 09, France 3 Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy 4 Scuola Superiore di Catania, Università di Catania, Via Valdisavoia 9, 95123 Catania, Italy

16:00 **Electron transport and piezoresistivity of cosputter-deposited platinum particles in ceramics** **R P2.20**
Silvan Schwebke, Günter Schultes
HTW Saar University of Technology, Saarbrücken, Germany

16:00 **ODMR studies of the paramagnetic centers involved in the emission of CdS-containing nanocomposites** **R P2.21**
G. Yu. Rudko(1), I. P. Vorona (1), B. D. Shanina(1), V. M. Dzhagan (2), V. I. Fediv (3), A. O. Kovalchuk (1), I. A. Buyanova (4), W. M. Chen (4), O. E. Rayevska (5), O. L. Stroyuk (5,6)
(1) V. Lashkaryov Institute of Semiconductor Physics of Nat. Acad. Sci. of Ukraine, Kyiv, Ukraine, (2) Chemnitz University of Technology, D-09126, Chemnitz, Germany, (3) Dept. Biophysics&Medical Informatics, Bukovinian State Medical University, Chernivtsi, Ukraine, (4) Department of Physics, Chemistry and Biology, Linköping University, Linköping, Sweden, (5) Pysarzhevskiy Institute of Physical Chemistry of Nat. Acad. Sci. of Ukraine, Kyiv, Ukraine, (6) Physical Chemistry, Technical University of Dresden, Dresden, Germany.

16:00 **Sonochemically grown F/Sb-codoped SnO2 nanoparticle embedded silica composite films for infrared-shielding layer application** **R P2.22**
Russameeruk Noonuruk, Wanichaya Mekprasart, Jaran Sritharathikhun, Wisanu Pecharapa
College of Nanotechnology, King Mongkut’s Institute of Technology Ladkrabang, Bangkok, 10520, Thailand

16:00 **Noise performance and operating temperature effects of high-efficiency germanium quantum dot photodetectors** **R P2.23**
Stylianos Siontas, Alexander Zaslavsky, Domenico Pacifici
Stylianos Siontas:School of Engineering, Brown University, Providence, RI, 02912, USA, Alexander Zaslavsky: School of Engineering, Brown University, Providence, RI, 02912, USA, Domenico Pacifici: School of Engineering, Brown University, Providence, RI, 02912, USA

16:00 **A SERS substrate based on silicon nanowires for rhodamine 6G detection** **R P2.24**
A.Ouhibi 1, M. Sâadaoui 2, M. Guendouz 3, N. Raouafi 2, A. Moadhen 1 and L. Haji 3
1 Université de Tunis El Manar, Faculté des Sciences de Tunis, Unité de recherche Nanomatériaux et Photonique, 2092 El Manar-Tunis, Tunisia. 2 Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Chimie Analytique et Electrochimie (LR99ES15), 2092 El Manar-Tunis, Tunisia. 3 Université de Rennes 1, CNRS-UMR Foton 6082, BP 80518, ENSSAT 6 rue de Kerampont, 22305 Lannion Cedex, France.

16:00 **Laser-active polymer microoptics via high-resolution 3D-multiphoton photolithography** **R P2.25**
Kestutis Kurselis, Boris Chichkov, Laszlo Sajti
Laser Zentrum Hannover e.V. Hollerithallee 8, D-30419 Hannover, Germany

16:00 **Electroforming Free Non-Volatile Resistive Switching Memory Device Based on Single Domain CoFe2O4 Nanoparticles** **R P2.26**
Sandeep Munjal, Neeraj Khare
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi 110016, India.

16:00 **Surface plasmon resonance in Au nanoparticles / dielectric spacer / Al film system: Tuning by variation of spacer thickness** **R P2.27**
Oleg Yeshchenko,(1) Viktor Kozachenko,(1) Yurii Liakhov,(1) Anatoliy Pinchuk (2)
(1) Department of Physics, Taras Shevchenko National University of Kyiv, 64/13 Volodymyrs’ka Str., 01601 Kyiv, Ukraine, (2) Department of Physics and Energy Science, University of Colorado Colorado Springs, Colorado Springs, Colorado, 80918 USA

16:00 **Dielectric properties of polymer composites filled with conductive particles of various morphology** **R P2.28**
L. Vovchenko, O. Lozitsky, L. Matzui, V. Oliynyk, V. Zagorodnii
Taras Shevchenko national University of Kyiv, Department of Physics

16:00 **Structural and optical properties of laser-ablated germanium nanoparticles** **R P2.29**
G. Tselikov, A. Popov, Yu. Ryabchikov, A. Kabashin
Aix-Marseille University, 163, avenue de Luminy, Marseille, France 13288, P.N. Lebedev Physical Institute of Russian Academy of Sciences, 53 Leninskii Prospekt, Moscow 199 991, Russia, National Research Nuclear University MEPHI, 31 Kashirskoye shosse, Moscow, Russia, 115409

16:00 **Tunable photoluminescence controlled by interface defects between silicon nanocrystal and silicon rich silicon oxide matrix** **R P2.30**
Dongsheng Li, Guohua Liu, Min Xie, and Deren Yang
State Key Laboratory of Silicon Materials, School of Material Science and Engineering, Zhejiang University

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM S

ALTECH 2017 - Analytical techniques for precise characterization of nano materials

Symposium Organizers :

Fernando Araujo de CASTRO, National Physical Laboratory, Teddington, U.K.

Burkhard BECKHOFF, Physikalisch Technische Bundesanstalt, Berlin, Germany

Cor CLAEYS, IMEC, Leuven, Belgium

Poul-Eric HANSEN, Danish Fundamental Metrology, Lyndgby, Denmark

EXSA European X-ray Spectrometry Association www.exsa.hu

HORIBA Scientific

NPL National Physical Laboratory

INRiM Istituto Nazionale di Ricerca Metrologica

From Research to Industry cea tech

Monday 22 May 2017

09:00 **Welcome to ALTECH 2017** — S S-0.1
Fernando Castro
National Physical Laboratory

Metrology for Nanomaterials I : Luca Boarino

09:15 **Nanoscale-metrology of organic and hybrid photovoltaics** — S 1.1
S. Ravi P. Silva, K.D.G.I. Jayawardena, R.M.I. Bandara, D. I. Kutsarov, F. Bausi*, A. Zoladek-Lemanczyk*, F.A. Castro*
Advanced Technology Institute, Department of Electrical and Electronic Engineering, University of Surrey, Guildford, Surrey, U.K. *National Physical Laboratory, Teddington, Middlesex, U.K.

09:45 **Metrology challenges for thin chalcogenide layered systems: in-fab control of composition and depth-dependent properties** — S 1.2
E. Nolot(1,2), A. Roule (1,2), W. Pessoa(1,2), M.C. Lépy (3)
(1) Univ. Grenoble Alpes, 38000 Grenoble, France (2) CEA, LETI, MINATEC Campus, 17 rue des Martyrs, 38054 Grenoble, France (3) CEA, LIST, Laboratoire National Henri Becquerel (LNE-LNHB), F-91191 Gif-sur-Yvette Cedex, France

10:00 **Coffee Break**

Metrology for Nanomaterials II : Ravi Silva and Emmanuel Nolot

10:30 **Terahertz time-domain spectroscopy: generation, detection and applications of terahertz pulses** — S 2.1
Paul C. M. Planken,
Advanced Research Center for Nanolithography / University of Amsterdam, Science Park 110, 1098 XG Amsterdam, The Netherlands

11:00 **Electron paramagnetic resonance study of dopants in 2D layered materials: Identification of the N acceptor in 2H MoS2** — S 2.2
B. Schoenaers, V. V Afanas'ev, A. Stesmans
Section Semiconductor Physics, Department of Physics, University of Leuven, 3001 Leuven, Belgium

11:15 **Graphene as a metrological tool for calibrating the mechanical behavior of single-atomic and single-molecular layers** — S 2.3
Peter Hess
Institute of Physical Chemistry University of Heidelberg

11:30 **nanoDielectric Spectroscopy as a tool for the characterization of polymer electrolytes** — S 2.4
Daniel E. Martínez-Tong(a,b), Angel Alegría(a,c).
(a) Centro de Física de Materiales (CFM) (CSIC?UPV/EHU)?Materials Physics Center (MPC), Paseo Manuel de Lardizabal 5, 20018 San Sebastián, Spain (b) Donostia International Physics Center, Paseo Manuel de Lardizabal 4, 20018 San Sebastián, Spain (c) Departamento de Física de Materiales (UPV/EHU), Apartado 1072, 20080 San Sebastián, Spain

11:45 **Electrical characterization of freestanding GaAs Nanowires by a multi-tip STM** — S 2.5
Andreas Nägelein, Matthias Steidl, Peter Kleinschmidt and Thomas Hannappel
TU Ilmenau, Institute for Physics, Photovoltaics, Ilmenau, Germany

12:00 **Lunch**

Multi-method nanoscale metrology : Fernando Castro and Miroslav Valtr

14:00 **Data Fusion for Multi-sensor Surface Measurement** — S 3.1
Jane Jiang
University of Huddersfield

14:30 **Nanometrology of metallic nanoparticles thin films: a multimodal approach** — S 3.2
G. Benetti1 2, S. Peli1, E. Cavaliere1, C. Giannetti1, G. Ferrini1, N. Winckelmans3, S. Bals3, J. Verbeeck3, M. Chiodi4, C. Caddeo1, C. Melis5, M. J. Van Bael2, L. Gavioli1, F. Banfi1
1Interdisciplinary laboratories for advanced materials physics (i-LAMP) and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, Brescia, Italy., 2KU Leuven, Laboratory of Solid State Physics and Magnetism, Department of Physics and Astronomy Celestijnenlaan 200D, B-3001, Leuven, Belgium., 3EMAT-University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium, 4Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining and Interface Technology, Überlandstrasse 129, 8600 Dübendorf, Switzerland, 5Dipartimento di Fisica, Università degli Studi di Cagliari,Cittadella Universitaria, I-09042 Monserrato, Italy,

14:45 **3D Chemical Analysis of Inorganic and Organic Nanostructures using ToF-SIMS and In-situ SPM** — S 3.3
Sven Kayser, Rudolf Moellers, Felix Kollmer, Derk Rading, Henrik Arlinghaus, Andreas Duetting, Ewald Niehuis, Raphaelle Dianoux, Adi Scheidemann
ION-TOF GmbH, NanoScan AG

15:00 **New Techniques for High-Resolution Analytical Characterization of Nanostructures: Correlative Microscopy based on SIMS** — S 3.4
S. Eswara, L. Yedra, F. Vollnhals, D. Dowsett, J. -N. Audinot, T. Wirtz
Advanced Instrumentation for Ion Nano-Analytics (AINA), MRT Dept, Luxembourg Institute of Science and Technology, 41, rue du Brill, L-4422 Belvaux, Luxembourg

15:15 **STM tip-sample repulsive forces determined quantitatively by comparative STM and AFM measurements on suspended graphene** — S 3.5
András Pálinkás 1,György Molnár 1, Chanyong Hwang 2, László Péter Biró 1, Zoltán Osváth 1
1 Institute of Technical Physics and Materials Science (MFA), Centre for Energy Research, HAS, 1525 Budapest, P.O. Box 49, Hungary, 2 Center for Nano-metrology, Korea Research Institute of Standards and Science, Yuseong, Daejeon 305-340, South Korea

15:30 **Coffee Break**

Advanced materials characterisaton by x-ray , atom probe and TEM techniques : Burkhard Beckhoff and Marie-Christine Lépy

16:00 **Materials analyses for the development of thin-film solar cells** — S 4.1
Daniel Abou-Ras
Helmholtz-Zentrum Berlin, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

16:30 **Chemical nanoanalyses at grain boundaries by joint use of atom probe tomography and TEM combined with ab-initio calculations** — S 4.2
Yutaka Ohno [1], Kaihei Inoue [1], Kozo Fujiwara [1], Kentaro Kutsukake [1], Momoko Deura [1], Ichiro Yonenaga [1], Naoki Ebisawa [2], Yasuo Shimizu [2], Koji Inoue [2], Yasuyoshi Nagai [2], Hideto Yoshida [3], Seiji Takeda [3], Shingo Tanaka [4] and Masanori Kohyama [4]
IMR, Tohoku Univ. [1], The Oarai Center, IMR, Tohoku Univ. [2], ISIR, Osaka Univ. [3], AIST [4],

16:45 **In-depth characterization of nanoscale layer systems using a combined reference-free grazing incidence X-ray fluorescence and X-** — S 4.3
P. Hönicke1, B. Detlefs2, J. Eilbracht1, Y. Kayser1, U. Mühle3, B. Pollakowski1 and B. Beckhoff1
1: Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany 2: CEA-LETI, 17 rue des Martyrs, 38054 Grenoble, France 3: Fraunhofer IKTS, Michael-Faraday-Straße 1, 07629 Hermsdorf, Germany

17:00 **Capabilities of model free X-ray standing wave analysis of periodic multilayer structures.** — S 4.4
I. A. Makhotkin1, S.N. Yakunin2, C.P. Hendrikx1, A. Chandrasekaran1, A. Zameshin1, C. Zarkadas3, M. Gateshki3, R.W.E. van de Kruijs1, E. Reuvekamp3 and F. Bijkerk1
1.Industrial Focus Group XUV Optics, MESA Institute for Nanotechnology, University of Twente, Drienerlolaan 5, Enschede, 7522 NB, The Netherlands, www.utwente.nl/mesaplus/xuv/ 2. NRC Kurchatov Institute, Moscow, Russian Federation 3. PANalytical B.V., Lelyweg 1, 7602 EA, Almelo, The Netherlands

17:15 **Scanning-free GEXRF applied to the characterization of nanoscaled materials** — S 4.5
Y. Kayser1, J. Sá2 and J. Szlachetko3
1: Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany. 2: Department of Chemistry-Ångström Laboratory, Uppsala University, 751 20 Uppsala, Sweden. 3: Institute of Physics, Jan Kochanowski University in Kielce, Świętokrzyska 15 St., 25-406 Kielce, Poland.

17:30 **Nanofocused X-ray beam induced current in single nanowire devices** — S 4.6
Vilgaile Dagyte1, Lert Chayanun2, Magnus Borgström1, Jesper Wallentin2*
1 Solid State Physics and NanoLund, Lund University, Sweden, 2 Synchrotron Radiation Research and NanoLund, Lund University, Sweden

17:45 **Scan-free GEXRF measurements in the laboratory using a CCD** — S 4.7
V. Szwedowski, J. Baumann, L. Bauer, S. Staeck, I. Mantouvalou, W. Malzer, B. Kanngießer
Technische Universität Berlin, Institute for Optics and Atomic Physics, Hardenbergstr. 36, 10623 Berlin, Germany

ALTECH Poster Session I :
Omar El Gawhary and Hele Savin

18:00 **The optoelectronic characteristic of Ga:AZO thin film under different processing parameters** — S 5-P.1
Te-Hua Fang, Tao-Hsing Chen*and Jia-Lin Yang
Department of Mechanical Engineering, National Kaohsiung University of Applied Sciences

18:00 **VAPOR PRESSURE OF LOW VOLATILE COMPOUNDS FROM FAST SCANNING AND AC-CHIP-CALORIMETRY** — S 5-P.2
Christoph Schick, Mathias Ahrenberg, Dimitri Zaitsau, Amir Abdelaziz, Sergey P. Verevkin
University of Rostock, Institute of Physics, Institute of Chemistry, Competence Center CALOR, Faculty of Interdisciplinary Research, University of Rostock, Albert-Einstein-Str. 25, 18059 Rostock, Germany

18:00 **Numerical Simulation of Solid Nanoparticles near a Liquid-Liquid Interface** — S 5-P.3
Ali DAHER, Amine AMMAR, Abbas HIJAZI.
ENSAM-Angers-France, LEBANESE University-Lebanon.

18:00 **Method of high-field stress and measurement influences to investigate thin dielectric films of MIS structures** — S 5-P.4
D.V. Andreev1, V.V. Andreev1, G.G. Bondarenko2, V.M. Maslovsky3, A.A. Stolyarov1
1) Bauman Moscow State Technical University, the Kaluga branch, 2, Bazhenov St., Kaluga, 248000, Russia, 2) National Research University Higher School of Economics, 20, Myasnitskaya Ulitsa, Moscow, 101000, Russia, 3) Zelenograd Research Institute of Physical Problems, 5, Georgievskiy prospekt, Zelenograd, Moscow, 103460, Russia

18:00 **Exploring the micro-scale Conductivity of polycarbonate-carbon nanotubes composites using conductive AFM** — S 5-P.5
Sebastien Pierrat (1), Lanti Yang (1), Robin Girod (1), Olivier Guise (1), Frans Mercx (1), Roberto Lazzaroni (2, 3), Olivier Douhéret (2), Pascal Viville (2)
(1) SABIC, Plasticslaan 1, 4612PX Bergen op Zoom, The Netherlands (2) Materia Nova R&D Center, Avenue Nicolas Copernic 1, B-7000 Mons, Belgium (3) Laboratory for Chemistry of Novel Materials, University of Mons, Place du Parc 20, B-7000 Mons, Belgium

18:00 **Effect of template morphology on crystallographic orientation and microstructure of electrodeposited copper nanowires** — S 5-P.6
Wen-Hao Lai,Chien-Neng Liao
Department of Material Science and Engineering,National Tsing Hua University,Taiwan

18:00 **NIGET: NanoIndentation General Evaluation Tool** — S 5-P.7
Anna Charvátová Campbell, Radek Šlesinger, Petr Klapetek
Czech Metrology Institute, Okružní 31, 638 00 Brno, Czech Republic

18:00 **Thermally activated microstructure evolution in copper nanowires of high-density nanotwins** — S 5-P.8
Wei-Lun Weng, Chien-Neng Liao
National Tsing Hua University

18:00 **Thermodynamic study of nano co-crystals synthesized by Spray Flash Evaporation (SFE)** — S 5-P.9
Karine Bonnot, Emeline Lobry, Vincent Pichot, Aymeric Seve, Denis Spitzer
Nanomatériaux pour les Systèmes Sous Sollicitations Extrêmes (NS3E) UMR 3208 ISL/CNRS/UNISTRA, French German Research Institute of Saint-Louis, 68301 Saint-Louis, France

18:00 **Comparison of contact and contactless CV for thin film oxide characterization** — S 5-P.10
Navneet Kumar, Hele Savin
Aalto University, Department of Electronics and Nano Engineering, Espoo, Finland.

18:00 **Spectroscopic imaging reflectometer as a tool for optical characterization of samples** — S 5-P.11
Miroslav Valtr13, David Nečas2, Petr Klapetek13
1 Department of Nanometrology, Czech Metrology Institute, Okružní 31, 638 00 Brno, Czech Republic 2 CEITEC MU, Masaryk University, Purkyňova 123, 612 00 Brno, Czech Republic 3 CEITEC BUT, Brno University of Technology, Purkyňova 123, 612 00 Brno, Czech Republic

18:00 **Quantification of the sorption behavior of U and Th onto graphene oxide** — S 5-P.12
H. Mohamud*, P. Ivanov+, B. Russell+, M. Garcia-Miranda+, P. H. Regan*+, N. I. Ward*
*University of Surrey, Guildford, GU2 7XH, United Kingdom, +National Physical Laboratory, Teddington, TW11 0LW, United Kingdom

18:00 **Advancing nano-FTIR Spectroscopy toward Organic Monolayer Sensitivity** — S 5-P.13
Peter Hermann, Bernd Kästner, Arne Hoehl, Vyacheslavs Kashcheyevs, Piotr Patoka, Georg Ulrich, Jörg Feikes, Markus Ries, Tobias Goetsch, Burkhard Beckhoff, Eckart Rühl, and Gerhard Ulm
Peter Hermann, Bernd Kästner, Arne Hoehl, Georg Ulrich, Burkhard Beckhoff, Gerhard Ulm, Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany, Vyacheslavs Kashcheyevs, Faculty of Physics and Mathematics, University of Latvia, 25 Zellu street, LV-1002 Riga, Latvia, Piotr Patoka, Eckart Rühl, Physikalische und Theoretische Chemie, Institut für Chemie und Biochemie, Freie Universität Berlin, Takustr. 3, 14195 Berlin, Germany, Jörg Feikes, Markus Ries, Tobias Goetsch, Helmholtz-Zentrum Berlin (HZB), Albert-Einstein-Str. 15, 12489 Berlin, Germany

18:00 **Single-cell Force Spectroscopy measurement of cell adhesion to cyclopropylamine plasma polymer films** — S 5-P.14
David Necas, Lenka Strbkova, Anton Manakhov, Adrian Stoica, Lenka Zajickova
Plasma Technologies, CEITEC, Masaryk University, Brno, Czech Republic, Experimental Biophotonics, CEITEC, Brno University of Technology, Brno, Czech Republic, Plasma Technologies, CEITEC, Masaryk University, Brno, Czech Republic, Plasma Technologies, CEITEC, Masaryk University, Brno, Czech Republic, Plasma Technologies, CEITEC, Masaryk University, Brno, Czech Republic and Department of Physical Electronics, Faculty of Science, Masaryk University, Brno, Czech Republic

18:00 **Construction of the Energy Band Diagram of Hydrogen Terminated Diamond and Silicon Nanowires.** — S 5-P.15
S.E. Challinger, I.D. Baikie, A.G. Birdwell, S. Strehle
S.E. Challinger [1], I.D. Baikie [1], A.G. Birdwell [2], S. Strehle [3] [1] KP Technology, Burn Street, Wick, Caithness, KW1 5EH, United Kingdom [2] U.S. Army Research Laboratory, Adelphi, Maryland, USA [3] Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

18:00 **AFM characterization of local mechanical properties of hydrogels** — S 5-P.16
Helena Valentová (a), Anna Fučíková (a), Miroslava Dušková-Smrčková (b)
(a) Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic, (b) Institute of Macromolecular Chemistry of Academy of Sciences of the Czech Republic, Prague, Czech Republic

18:00 **Infrared spectroscopic ellipsometry of micrometer-sized SiO2 line gratings** — S 5-P.17
Cordula Walder (1), Matthias Zellmeier (2), Jörg Rappich (2), Helge Ketelsen (3), Karsten Hinrichs (1)
(1) Leibniz?Institut für Analytische Wissenschaften ? ISAS ? e.V., Department Berlin, Schwarzschildstraße 8, 12489 Berlin (2) Helmholtz?Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium Photovoltaik, Kekuléstraße 5, 12489 Berlin (3) SENTECH Instruments GmbH, Schwarzschildstraße 2, 12489 Berlin

18:00 **Spatially-resolved spectroscopic characterization of reflective and transparent materials at a micro-meter scale using CSI** — S 5-P.18
Rémy Claveau, Paul C. Montgomery, Manuel Flury, Denis Montaner
Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie (ICube) and Institut National des Sciences Appliquées de Strasbourg (INSA Strasbourg), Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie (ICube), Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie (ICube) and Institut National des Sciences Appliquées de Strasbourg (INSA Strasbourg), Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie (ICube)

18:00 **Measuring Number Concentration of Nanoparticles in Suspensions using Electrospray Differential Mobility Analysis** — S 5-P.19
G. B. Baur, F. Lüönd and K. Vasilatou
Laboratory of Particles and Aerosols, Federal Institute of Metrology METAS, Bern-Wabern, CH-3003, Switzerland

18:00 **Thermally stimulated processes in Cu-doped Y-stabilized ZrO2 nanopowders** — S 5-P.20
N. Korsunska1, M.Baran1, I.Vorona1, V. Nosenko1, S. Lavoryk1,2, Yu. Polishchuk1, V. Kladko1, X. Portier3, L.Khomenkova1
1) V. Lashkaryov Institute of Semiconductor Physics of National Academy of Sciences of Ukraine, 45 pr. Nauky, 03028 Kyiv, Ukraine, 2) NanoMedTech LLC, 68 Antonovycha Str., 03680 Kyiv, Ukraine, 3) CIMAP, Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 6 Boulevard Marechal Juin, Caen, 14050 France

18:00 **EMRP-SolCell: Coupling of nano-characterization techniques to probe III-V materials and multi-junction solar cells properties.** — S 5-P.21
Christophe Licitra, Dimitri Hapiuk, Jean-Paul Barnes
Univ. Grenoble Alpes, F-38000 Grenoble, France. CEA, LETI, MINATEC Campus, F-38054 Grenoble, France.

18:00 **Carbon nano material preparation by atmospheric gliding arc discharge** — S 5-P.22
Fumiaki Mitsugi, Hiroharu Kawasaki, Shin-ichi Aoqui
Graduate school of Science and Technology, Kumamoto University, Department of Electrical & Electronics Eng., Sasebo National College of Tech., Department of Computer and Information Sciences, Sojo University

18:00 **Imaging Mueller Matrix Ellipsometry for the Characterization of Microstructured Anisotropic Thin-Film Samples** **S 5-P.23**
Matthias Duwe, Sebastian Funke, Christian Röling, Peter H. Thiesen, Aday J. Molina-Mendoza, Andres Castellanos-Gomez
Accurion GmbH, Stresemannstr. 30, 37079 Göttingen, Germany, Universidad Autonoma de Madrid. Departamento de Fisica de la Materia Condensada. Campus Universitario de Cantoblanco, 28049 Madrid, Spain, IMDEA Nanoscience, C/ Faraday 9, Campus Universitario de Cantoblanco, 28049 Madrid, Spai

18:00 **Nanoscale stress measurements through advanced Raman spectroscopy** **S 5-P.24**
Thomas Nuytten1, Janusz Bogdanowicz1, Thomas Hantschel1, Andreas Schulze1, Paola Favia1, Hugo Bender1, Ingrid De Wolf1,2, Wilfried Vandervorst1,3
1 imec vzw, Kapeldreef 75, 3001 Leuven, Belgium 2 Dept. of Materials Engineering, KU Leuven, B-3001 Leuven, Belgium 3 Instituut voor Kern- en Stralingsfysica, KU Leuven, B-3001 Leuven, Belgium

18:00 **Novel method of pitch uniformity measurements in diffraction gratings using Coherent Fourier Scatterometry** **S 5-P.25**
Petro Sonin and Omar El Gawhary
VSL Dutch Metrology Institute, Thijsseweg 11, 2629 JA Delft, Netherlands

Advanced scanning probe and plasmonic spectroscopy : Petr Kapletek and Fernando Castro

08:45 **Tip-Enhanced Raman Spectroscopy for Chemical Imaging of Molecular Nanomaterials** **S 6.1**
Renato Zenobi
ETH Zurich

09:15 **Towards 3D, Simultaneous Topographical, Spectroscopic and Electrical Mapping at the Nanoscale** **S 6.2**
Alina Zoladek-Lemanczyk, Naresh Kumar, Fernando A. Castro
National Physical Laboratory, UK, National Physical Laboratory, UK, National Physical Laboratory, UK

09:30 **Nanoscale analytics: latest achievements in near-field microscopy and spectroscopy** **S 6.3**
M. Boehmler
Applications Department, neaspec GmbH, Munich, Germany

09:45 **Sheet-Resistance Measurements in Nanometer-Wide Conductive Lines** **S 6.4**
J. Bogdanowicz (a,1), S. Folkersma (a,b), S. Sergeant (a), A. Schulze (a), K. Paredis (a), U. Celano (a), B. Kunert (a), W. Guo (a), Y. Mols (a), D. H. Petersen (c), M.-L. Witthøft (c), O. Hansen (c), H. H. Henrichsen (d), P. F. Nielsen (d) and W. Vandervorst (a,b)
(a) IMEC, Kapeldreef 75, B-3000 Leuven, Belgium (b) Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium (c) Department of Micro- and Nanotechnology, Technical University of Denmark, DTU Nanotech Building 345 East, DK-2800 Kgs. Lyngby, Denmark (d) CAPRES A/S, Scion-DTU, Building 373, DK-2800 Kgs. Lyngby, Denmark (1) email address: janusz.bogdanowicz@imec.be

10:00 **Coffee Break**

Advanced optical metrology I : Poul-Eric Hansen and Andreas Hertwig

10:30 **Optical properties of functional metal oxides: theoretical and experimental studies** **S 7.1**
Mircea Modreanu
Tyndall National Institute, University College Cork, Lee Maltings Dyke Parade, Cork, Ireland

11:00 **Precise Characterisation of Molecular Orientation in a Single Crystal Field-Effect Transistor Using Polarised Raman Spectroscopy** **S 7.2**
Sebastian Wood 1, Grigorios-Panagiotis Rigas 1 2, Alina Zoladek-Lemanczyk 1, James C. Blakesley 1, Stamatis Georgakopoulos 3, Marta Mas-Torrent 3, Maxim Shkunov 2 & Fernando A. Castro 1
1 National Physical Laboratory, Hampton Road, Teddington, TW11 0LW, United Kingdom. 2 Advanced Technology Institute, University of Surrey, Guildford, GU2 7XH, United Kingdom. 3 Institut de Ciencia de Materials de Barcelona (ICMAB-CSIC), Campus UAB, 08193 Cerdanyola, Spain.

11:15 **The Use of Raman Spectroscopy for Analysing the Spatial Distribution of Nanofillers in Polyethylene Nanocomposites** **S 7.3**
Anna E. Lewandowska, James Beard, Erik Frank, Nor H. Inai, Stephen J. Eichhorn
Anna E. Lewandowska - University of Exeter, College of Engineering, Mathematics and Physical Sciences, Stocker Road, Exeter, EX4 4QL, United Kingdom, James Beard - University of Exeter, College of Engineering, Mathematics and Physical Sciences, North Park Road, Exeter, EX4 4QF, United Kingdom, Nor H. Inai - University of Exeter, College of Engineering, Mathematics and Physical Sciences, North Park Road, Exeter, EX4 4QF, United Kingdom, Stephen J. Eichhorn - University of Exeter, College of Engineering, Mathematics and Physical Sciences, North Park Road, Exeter, EX4 4QF, United Kingdom, Erik Frank - Institute of Textile Chemistry and Chemical Fibers (ITCF), Denkendorf, Körschtalstr. 26, 73770 Denkendorf, Germany,

11:30 **Fabrication of flexible silicon nanowires for high sensitive bio-sensing by surface enhanced Raman spectroscopy** **S 7.4**
Eleonora Cara 1,2 , Federico Ferrarese Lupi 1 , Masoud Dialameh 1,2 , Andrea Mario Giovannozzi 3 , Luisa Mandrile 3,4 , Andrea Mario Rossi 3 , Natascia De Leo 1, Luca Boarino 1
1 Istituto Nazionale di Ricerca Metrologia (INRiM), Nanoscience and Materials Division, Strada delle Cacce 91, 10135 Turin, Italy, 2 Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129, Turin, Italy, 3 Istituto Nazionale di Ricerca Metrologia (INRiM), Division of Metrology for Quality of Life, Strada delle Cacce 91, 10135 Turin, Italy, 4 University of Turin, Chemistry Department, Via Pietro Giuria 7, 10125, Turin, Italy.

11:45 **High resolution imaging of light-activated copper impurities in multicrystalline silicon wafers by photoluminescence** **S 7.5**
Chiara Modanese, Alessandro Inglese, Alessia Focareta, Florian Schindler, Jonas Schön, Martin C. Schubert, Hele Savin
Chiara Modanese, Alessandro Inglese, Alessia Focareta, Hele Savin - Department of Electronics and Nanoengineering, Aalto University, Espoo, Finland, Florian Schindler, Jonas Schön, Martin C. Schubert - Fraunhofer Institute for Solar Energy Systems ISE, Freiburg im Breisgau, Germany

12:00 **Lunch**

Advanced X-ray methods for nanomaterials : Daniel Abu-Ras and Burkhard Beckhoff

14:00 **Modern synchrotron–based XRD microscopy imaging on 300 mm strained Ge / SiGe / Si(001) wafers for sub-10 nm CMOS** **S 8.1**
M. Zöllner1, M.-I. Richard2, T. Schülli2, G. Chahine2, P. Zaumseil1, G. Capellini1, M. Haeberlen3, P. Storck3, and T. Schroeder1
1 IHP- Innovation for High Performance Si Microelectronics, Im Technologiepark 25, 15236 Frankfurt (Oder), Germany 2 ID01/ESRF, The European Synchrotron Radiation Facility, 71 Rue Des Martyrs, 38043 Grenoble, France 3 Siltronic AG, Hans Seidel Platz 4, 81737 München, Germany

14:30 **Model independent approach for the analysis of GIXR data from thin films** **S 8.2**
I. A. Makhotkin1, S.N. Yakunin2, J. F. Woitok3, R.W.E. van de Kruijs1, E. Reuvekamp3 and F. Bijkerk1
Industrial Focus Group XUV Optics, MESA+ Institute for Nanotechnology, University of Twente, Drienerlolaan 5, Enschede, 7522 NB, The Netherlands, NRC Kurchatov Institute, Moscow, Russian Federation, PANalytical B.V., Lelyweg 1, 7602 EA, Almelo, The Netherlands,

14:45 **Characterization of bio-molecular nano-layers by means of reference-free X-ray Spectrometry** **S 8.3**
Cornelia Streeck (1), Paul M. Dietrich (4), Tobias Fischer(2), Knut Rurack (2), Wolfgang E. S. Unger(2), and Burkhard Beckhoff (1)
(1) Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-1, 10587 Berlin, Germany, (2) Bundesanstalt für Materialforschung und &#8211,prüfung (BAM), Unter den Eichen 87, 12205 Berlin, Germany, (3) Technische Universität Berlin, Hardenbergstr. 36, 10623 Berlin, Germany, (4) SPECS Surface Nano Analysis GmbH, Voltastrasse 5, 13355 Berlin, Germany

15:00 **Probing elemental/chemical gradients and adhesion properties of organics on steel by X-ray photoelectron spectroscopy (XPS)** **S 8.4**
T. Greunz1, C. Lowe2, J. Humlicek3-4, B. Strauß5, D. Stifter1
1 ZONA, JKU Linz, Altenberger Straße 69, 4040 Linz, Austria, 2 Becker Industrial Coatings Ltd, Goodlass Road, Speke, Liverpool L24 9HJ, United Kingdom, 3 Central European Institute of Technology, Masaryk University, Kamenice 753/5, 62500 Brno, Czech Republic, 4 Masaryk University, Faculty of Science, Department of Condensed Matter Phys, Kotlarska 2, CS-61137 Brno, Czech Republic, 5 voestalpine Stahl GmbH, voestalpine-Straße 3, 4031 Linz, Austria,

15:15 **Probing the extreme surface of isolated nanoobjects** **S 8.5**
O. Sublemontier [1], D. Aureau [2], M. Patanen [3], S. Benkoula [4], X.-J. Liu [5], C. Nicolas [4], E. Robert [4], C. Reynaud [1], F.-A. Barreda [1], H. Kintz [1], M.-A. Gaveau [1], J.-L. Le Garrec [6], A. Etcheberry [2], J.B.A. Mitchell [6], and C. Miron [4,7]
[1] NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif-sur-Yvette, France, [2] Institut Lavoisier de Versailles, Université Versailles-St Quentin, UMR CNRS 8180, 78035 Versailles, France, [3] NANOMO research unit, Faculty of Science, P.O. Box 3000, 90014 University of Oulu, Finland, [4] Synchrotron SOLEIL, l'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette Cedex, France, [5] School of Physics, BeiHang University, No.37 XueYuan Road, HaiDian District, 100191 Beijing, China, [6] IPR, U.M.R. No. 6251 du C.N.R.S., Université de Rennes I, 35042 Rennes, France, [7] ELI-NP, "Horia Hulubei" National Institute for Physics and Nuclear Engineering, Măgurele, Jud. Ilfov, Romania

15:30 **Coffee Break**

Electron Beam and Ion Beam Characterisation : Cor Claeys

16:00 **Elemental analysis of the outer layer of nano materials using Low Energy Ion Scattering** **S 9.1**
Thomas Grehl
ION-TOF GmbH, Heisenbergstr. 15, 48149 Münster, Germany

16:30 **Plasma Time Of Flight Mass Spectrometry for power electronics and photonics applications** **S 9.2**
(1) : Y. Mazel, E. Nolot, J.-P. Barnes (2) : A. Tempez, S. Legendre
(1) : LETI, CEA, MINATEC Campus and University Grenoble Alpes, Grenoble, FRANCE
(2) : HORIBA FRANCE SAS, Palaiseau, FRANCE

16:45 **Characterization of Lipid NanoParticles (LNP) for drug delivery through Transmission Electron Microscopy (TEM)** **S 9.3**
A. Arnould, M. Bacia, F. Caputo, I. Texier, M. Escude, G. Effantin, A.C. Couffin, R. Soulas, J.F. Damlencourt
Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LITEN, MINATEC Campus, F-38054 Grenoble, France , IBS, EPN Science Campus, F-38044 Grenoble, France , Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LETI, MINATEC Campus, F-38054 Grenoble, France , Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LETI, MINATEC Campus, F-38054 Grenoble, France , Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LETI, MINATEC Campus, F-38054 Grenoble, France , IBS, EPN Science Campus, F-38044 Grenoble, France , Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LETI, MINATEC Campus, F-38054 Grenoble, France , Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LITEN, MINATEC Campus, F-38054 Grenoble, France , Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LITEN, MINATEC Campus, F-38054 Grenoble, France

17:00 **Nanospherites-driven biomineralization mechanism in aged human bone revealed by complementary analytical methods** **S 9.4**
G. Sarau1,2, P. Milovanovic3,4, E. A. Zimmermann3, A. vom Scheidt3, B. Hoffmann2, T. Yorgan3, M. Schweizer5, M. Amling3, B. Busse3,6, S. Christiansen1,2,7
1. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, 2. Max Planck Institute for the Science of Light, Staudtstr. 2, 91058 Erlangen, Germany, 3. Institute for Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Lottestrasse 55a, 22529 Hamburg, Germany, 4. Laboratory for Anthropology, Institute of Anatomy, Faculty of Medicine, University of Belgrade, Dr Subotica 4/2, 11000 Belgrade, Serbia, 5. Center of Molecular Neurobiology, University Medical Center Hamburg-Eppendorf, Martinistrasse 52, 20246 Hamburg, Germany, 6. Materials Sciences Division, Lawrence Berkeley National Laboratory / University of California-Berkeley, CA 94720, USA, 7. Physics Department, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany

17:15 **Nanoscale chemical mapping of semicrystalline polymers** **S 9.5**
Kerry J Abrams, Nicola Stehling, Cornelia Rodenburg
University of Sheffield

17:30 **Atomic-level Characterization of Two-dimensional Halide Perovskites** **S 9.6**
Yi Yu,1,2 Dandan Zhang,1,2 Christian Kisielowski,3 Letian Dou,1,2 Nikolay Kornienko,1,2 Yehonadav Bekenstein,1,2 Andrew B. Wong,1,2 A. Paul Alivisatos,1,2,4,5 & Peidong Yang1,2,4,5
1 Department of Chemistry, University of California, Berkeley, CA 94720, USA. 2 Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA. 3 The Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA. 4 Kavli Energy NanoScience Institute, Berkeley, California 94720, USA. 5 Department of Materials Science and Engineering, University of California, Berkeley, CA 94720, USA.

17:45 **Ruthenium growth on B, C and B4C studied by LEIS** **S 9.7**
Andrey Zameshin, Andrey E. Yakshin, Marko Sturm, Fred Bijkerk
Industrial Focus Group XUV Optics, MESA+ Institute for Nanotechnology, University of Twente, Enschede, The Netherlands

ALTECH Poster Session II : Cornelia Streeck and Nolwenn Fleurence

18:00 **Radial distribution function imaging: a new TEM method in resolving the multiphase amorphous materials** **S 10–P.1**
Xiaoke Mu1,2, Di Wang1,3, Tao Feng4, Christian Kübel1,2,3
1. Institut für Nanotechnology (INT), Karlsruhe Institute of Technology (KIT), 76344 Eggenstein-Leopoldshafen, Germany, 2. Helmholtz-Institute Ulm for Electrochemical Energy Storage (HIU), Karlsruhe Institute of Technology (KIT), 89081 Ulm, Germany, 3. Karlsruhe Nano Micro Facility (KNMF), Karlsruhe Institute of Technology (KIT), 76344 Eggenstein-Leopoldshafen, Germany, 4. Herbert Gleiter Institute of Nanoscience, Nanjing University of Science and Technology (NJUST), Nanjing, China,

18:00 **Laboratory instrumentation for high resolution X-ray spectroscopy analysis of materials** **S 10–P.2**
Wolfgang Malzer, Daniel Grötzsch, Christopher Schlesiger, Richard Gnewkow, Birgit Kanngießer
Technische Universität Berlin, IOAP, Hardenbergstr. 36, 10623 Berlin, Germany

18:00 **TXRF spectrometry with waveguide-resonator specific design** **S 10-P.3**
V.K. Egorov1, E.V. Egorov1, E.M. Lukianchenko2
1IMT RAS, Chernogolovka, Moscow District, Russia, 2OOO «Polus» S.Petersburg, Russia

18:00 **Recent results of atomic fundamental parameter determinations** **S 10-P.4**
P. Hönicke, M. Kolbe, M. Müller, B. Pollakowski-Herrmann, R. Unterumsberger, B. Beckhoff
Physikalisch-Technische Bundesanstalt(PTB), Abbestr. 2-12, 10587 Berlin, Germany

18:00 **Degradation of PTB7 photovoltaic thin layers by radiation exposure investigated by photoelectron spectroscopy** **S 10-P.5**
E. Darlatt, B. Muhsin, R. Rösch, M. Kolbe, A. Gottwald, F. Roth, H. Hoppe, M. Richter
Physikalisch-Technische Bundesanstalt (PTB), Abbestraße 2-12, 10587 Berlin, Germany, Institute of Organic and Macromolecular Chemistry, Friedrich Schiller University Jena, Humboldtstr. 10, 07743 Jena, Germany, Institute of Organic and Macromolecular Chemistry, Friedrich Schiller University Jena, Humboldtstr. 10, 07743 Jena, Germany, Physikalisch-Technische Bundesanstalt (PTB), Abbestraße 2-12, 10587 Berlin, Germany, Physikalisch-Technische Bundesanstalt (PTB), Abbestraße 2-12, 10587 Berlin, Germany, Institute for Experimental Physics, TU Bergakademie Freiberg, Leipziger Straße 23, 09599 Freiberg, Germany, Institute of Organic and Macromolecular Chemistry, Friedrich Schiller University Jena, Humboldtstr. 10, 07743 Jena, Germany, Physikalisch-Technische Bundesanstalt (PTB), Abbestraße 2-12, 10587 Berlin, Germany,

18:00 **Reference-free X-ray spectrometry for 3D heterogeneous integration technology** **S 10-P.6**
Y. Kayser1, P. Hönicke1, L. Hou2,3, H. Oppermann4, B. Pollakowski-Hermann1, F. Reinhardt5, C.Streeck1, I. de Wolf2,3 and B. Beckhoff1
1: Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany 2: IMEC, Kapeldreef 75, 3001 Leuven, Belgium 3: Dept. Materials Science, Fac. Engineering, KU Leuven, Kasteelpark Arenberg 44, 3001 Leuven, Belgium 4: Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration IZM, Gustav-Meyer-Allee 25 13355 Berlin, Germany 4: Bruker Nano GmbH, Am Studio 2D, 12489 Berlin, Germany

18:00 **Atom Probe Tomography for Advanced Semiconductor Technology Research** **S 10-P.7**
C. Fleischmann1, D. Melkonyan1,2, L. Arnoldi1,2, R.J.H. Morris1, J. Bogdanowicz1, W. Vandervorst1,2
1 Imec, Kapeldreef 75, 3001 Heverlee, Belgium, 2 Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium

18:00 **A compact and calibrateable von-Hamos X-Ray Spectrometer based on full-cylindrical HAPG mosaic crystals** **S 10-P.8**
Malte L. Wansleben, Ina Holfelder, Jan Weser, Burkhard Beckhoff
Physikalisch-Technische Bundesanstalt (PTB)

18:00 **The X-ray Fluorescence Beamline at Elettra–Sincrotrone Trieste: New Characterization Opportunities for Nano-Structured Materials** **S 10-P.9**
Diane Eichert [1], Lars Luehl [1,2], Fabio Brigidi [1], Alessandro Gambitta [1], Werner Jark [1]
[1] Elettra – Sincrotrone Trieste, Area Science Park, 34149 Basovizza, Trieste, Italy, [2] Technische Universitaet Berlin, IOAP, Hardenbergstrasse 36, 10623 Berlin, Germany

18:00 **Graphics card based numerical tools for X-ray Standing Wave calculations** **S 10-P.10**
Petr Klapetek, Radek Slesinger, Philipp Hoenicke
Czech Metrology Institue, Okruzni 31, 638 00 Brno, Czech Republic, Physikalisch-Technische Bundesanstalt, X-Ray Spectrometry, Abbestr. 2-12, 10587 Berlin, Germany

18:00 **SPR-XAS setup: a novel setup to combine surface plasmon resonance and X-ray absorption spectroscopy measurements** **S 10-P.11**
A. Serrano1,2, O. Rodríguez de la Fuente3,4, V. Collado1,2, J. Rubio-Zuazo1,2, C. Monton5, G. R. Castro1,2 and M. A. García4,6
1 SpLine, Spanish CRG Beamline at the ESRF, F-38043 Grenoble, Cedex 09, France, 2 Instituto de Ciencia de Materiales de Madrid, (ICMM-CSIC), Cantoblanco, 28049 Madrid, Spain, 3 Dpto. de Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain, 4 Instituto de Magnetismo Aplicado 'Salvador Velayos', Universidad Complutense de Madrid, 28230 Madrid, Spain, 5 Department of Physics and Astronomy, University of Texas at San Antonio, One UTSA Circle, San Antonio, Texas 78249, USA, 6 Instituto de Cerámica y Vidrio, Consejo Superior de Investigaciones Científicas, 28049 Madrid, Spain

18:00 **CASTOR, a new tool for combined XRR-GIXRF analysis at SOLEIL** **S 10-P.12**
Yves Ménesguen(1), Anastasiia Novikova(1), Marie-Christine Lépy(1), Walter-Wilkener Batista-Pessoa(2), Hélène Rotella(2), Emmanuel Nolot(2), Jean-Michel André(3), Karine Le Guen(3), Philippe Jonnard(3), Diane Eichert(4)
(1) CEA, LIST, Laboratoire National Henri Becquerel (LNE-LNHB), F-91191 Gif-sur-Yvette Cedex, France, (2) CEA, LETI, SDEP/LDJ, 17 rue des Martyrs, 38054 Grenoble Cedex, France, (3) Sorbonne Universités, UPMC Univ Paris 06, CNRS UMR 7614, Laboratoire de Chimie Physique - Matière et Rayonnement, 11 rue Pierre et Marie Curie, F-75231 Paris cedex 05, France, (4) ELETTRA, Sincrotrone Trieste, Area Science Park, 34149 Basovizza, Trieste, Italy

18:00 **Crystal surface characterization** **S 10-P.13**
Konstantin Nikolaev 1, Igor Makhotkin 1, Sergey Yakunin 2, Robbert van de Kruijs 1, Fred Bijkerk1
1 MESA+ Institute for Nanotechnology, University of Twente, Netherlands 2 NRC Kurchatov Institute, Moscow, Russia

18:00 **AUGER ELECTRON SPECTROSCOPY (AES): A CHALLENGING WORKTOOL FOR THE SURFACE ANALYSIS OF NANOPARTIKKLES AND OTHER NOT INSULATING MA** **S 10-P.14**
T. Weingärtner*, T. Bergfeldt*
*Institute for Applied Materials , Karlsruhe Institute for Technology, Hermann-von Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

18:00 **Ambient pressure particle mass spectrometry for inline detection of nanoparticle growth in flame reactors** **S 10-P.15**
Samer Suleiman 1*, Sebastian Kluge 1, Christof Schulz 1,2 and Hartmut Wiggers 1,2*
1: Institute for Combustion and Gas Dynamics – Reactive Fluids (IVG), University of Duisburg-Essen, Duisburg, Germany 2: Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Duisburg, Germany

18:00 **Determination of the L3 fluorescence yield of Ga with low uncertainties for a reliable quantification in the soft X-ray range** **S 10-P.16**
R. Unterumsberger, C. Streeck, B. Pollakowski-Herrmann, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Abbestrasse 2-12, 10587 Berlin, Germany

18:00 **EMPIR MetVBadBugs – Reference-free X-ray spectrometry depth profiling studies on the uptake of antibiotics in bacteria films** **S 10-P.17**
C. Seim (1), C. Streeck (1), A. Hornemann (1), B. Kästner (1), S. Bahr (3), P. Dietrich (3), A. Thissen (3), J.-L. Vorng (2) and B. Beckhoff (1)
1: Physikalisch-Technische Bundesanstalt (PTB) I Abbestr. 2-12 I 10587 Berlin I Germany , 2: National Physical Laboratory I Hampton Road I Teddington I Middlesex I TW11 0LW I UK , 3: SPECS Surface Nano Analysis GmbH I Voltastrasse 5 I 13355 Berlin I Germany

18:00 **In situ sample environment for SAXS, WAXS and XAS investigation under harsh synthesis conditions** **S 10-P.18**
Eike Gericke (a, b), Robert Wendt (a, b), Armin Hoell (b), Dirk Wallacher (b), Dragomir Tatchev (c), Simone Raoux (b), Klaus Rademann (a)
(a) Department of Chemistry, Humboldt-Universität zu Berlin, Berlin, Germany, (b) Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany, (c) Institute of Physical Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria,

18:00 **EMRP Q-AIMDS: Contamination analysis on medical device by combined X-ray spectrometry and ambient spectroscopic techniques** **S 10-P.19**
B. Pollakowski, A. Hornemann, A. M. Giovannozzi, F. Green, P. Gunning, A. Rossi, Ch. Seim, R. Steven, B. Tyler, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Berlin, Germany, National Physical Laboratory, Teddington, United Kingdom, Westfälische Wilhelms-Universität Münster, Münster, Germany, Smith & Nephew Research Centre, York, United Kingdom, INRIM, Torino, Italy

18:00 **Development and reference-free characterization of 3D nanostructures as potential calibration sample for analytical techniques** **S 10-P.20**
M. Dialameh1, F. Ferrarese Lupi1, N. De Leo1, L. Boarino1, P. Hönicke2, Y. Kayser2, B. Beckhoff2, T. Weimann3, C. Fleischmann4, W. Vandervorst4,5
1 Istituto Nazionale di Ricerca Metrologia (INRIM), strada delle Cacce 91, 10135 Turin, Italy 2 Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany 3 Physikalisch-Technische Bundesanstalt (PTB), Bundesalle 100, 38116 Braunschweig, Germany 4 IMEC, Kapeldreef 75, 3001 Heverlee, Belgium 5 Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijenlaan 200D, 3001 Leuven, Belgium

18:00 **Strain and compositional analysis of (Si)Ge Fin Structures Using HRXRD** **S 10-P.21**
Andreas Schulze, Roger Loo, Liesbeth Witters, Hans Mertens, Andrzej Gawlik, Nadine Collaert, Naoto Horiguchi, Matthew Wormington, Paul Ryan, Wilfried Vandervorst, Matty Caymax
imec, Kapeldreef 75, 3001 Leuven, Belgium, imec, Kapeldreef 75, 3001 Leuven, Belgium, imec, Kapeldreef 75, 3001 Leuven, Belgium, imec, Kapeldreef 75, 3001 Leuven, Belgium, imec, Kapeldreef 75, 3001 Leuven, Belgium and KU Leuven, Dept. of Physics and Astronomy, Celestijnenlaan 200D, 3001 Leuven, Belgium, imec, Kapeldreef 75, 3001 Leuven, Belgium, imec, Kapeldreef 75, 3001 Leuven, Belgium, Bruker Semiconductor Division, 112 Robin Hill Road, Santa Barbara, CA 93117, USA, Bruker Semiconductor Division, Belmont Business Park, Durham, DH1 1TW, UK, imec, Kapeldreef 75, 3001 Leuven, Belgium and KU Leuven, Dept. of Physics and Astronomy, Celestijnenlaan 200D, 3001 Leuven, Belgium, imec, Kapeldreef 75, 3001 Leuven, Belgium,

18:00 **In-situ Small-angle X-ray Scattering and UV-vis spectroscopy Investigations of the Nucleation and Growth of Iron Oxide Nanoparticles by Microwave-Assisted Solvothermal Synthesis** **S 10-P.22**

Robert Wendt [1], Eike Gericke [1], Dragomir Tatchev [2], Armin Hoell [3], Markus Wollgarten [3], Simone Raoux [3], Klaus Rademann [1]
[1] Department of Chemistry, Humboldt-Universität zu Berlin, Berlin, Germany, [2] Bulgarian Academy of Sciences, Sofia, Bulgaria, [3] Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany

Advanced optical metrology II : Omar El Gawhary and Peter Petrik

08:30 **Optical properties of nanostructured anisotropic surfaces by spectroscopic Mueller Matrix Ellipsometry and appropriate modeling** **S 11.1**

Morten Kildemo
Department of Physics, Norwegian University of Science and Technology, 7491 Trondheim, Norway

09:00 **Through-focus scanning optical microscopy as a 3D shape metrology tool for nanometer to micrometer scale targets** **S 11.2**

Ravi Kiran Attota
National Institute of Standards and Technology (NIST) Engineering Physics Division Gaithersburg, MD 20899-8212, USA

09:15 **Ellipsometric porosimetry on TiO2 layers with pores of definde size and number** **S 11.3**

Andreas Hertwig, Dana-Maria Rosu, Erik Ortel, Vasile-Dan Hodoroaba, Ralph Kraehnert
1-2: Federal Institute for Materials Research and Testing (BAM), Div. 6.7, Unter den Eichen 44-46, 12203 Berlin, Germany, 3-4: Federal Institute for Materials Research and Testing (BAM), Div. 6.1, 5:Technische Universität Berlin, Institut für Chemie, Straße des 17. Juni 124, 10623 Berlin, Germany.

09:30 **NON-DESTRUCTIVE DETECTION OF BURIED LIQUID/SOLID CRYSTALLOGRAPHIC PHASES COEXISTANCE IN CORE/SHELL NANOPARTICLES** **S 11.4**

Maria M. Giangregorio1, Alexandra Suvorova2, April Brown3, Kurt Hingerl4, Josef Humlicek5, Maria Losurdo1
1. Institute of Nanotechnology, CNR-NANOTEC, Dept. Chemistry, University of Bari, Italy, 2. Centre for Microscopy, Characterisation and Analysis, The University of Western Australia, Crawley, Australia,3.Department of Electrical and Computer Engineering, Duke University, Durham, North Carolina, United States, 4. Center for Surface- and Nanoanalytics, Johannes Kepler University Linz, Linz, Austria, 5. Masaryk University, CEITEC, Brno, Czech Republic

09:45 **High resolution microsphere-assisted interference microscopy for 3D characterization of nanomaterials** **S 11.5**

Audrey LEONG-HOI, Stephane PERRIN, Sylvain LECLER, Pierre PFEIFFER, Paul MONTGOMERY
ICube, University of Strasbourg - CNRS, 300 Boulevard Sébastien Brand, FR-67412 ILLKIRCH

10:00 **Coffee Break**

Applications of novel x-ray, AFM and optical methods : Thomas Schröder and Andreas Hertwig

10:30 **Probing the local and electronic structure of nanomaterials at the solid-liquid interface** **S 12.1**

Benedikt Lassalle
SOLEIL Synchrotron, L'Orme des Merisiers, 91191, Gif-sur-Yvette, France.

11:00 **Combined ellipsometric and X-ray spectrometric investigation of fibrinogen protein layers on different substrates** **S 12.2**

B. Kalas1,3, B. Pollakowski2, A. Nutsch2, C. Streeck2, J. Nador1, M. Fried1, B. Beckhoff2, P. Petrik1
1 Institute for Technical Physics and Materials Science (MFA), Centre for Energy Research of the Hungarian Academy of Sciences, Konkoly Thege Str. 29-33, 1121 Budapest, Hungary 2 Physikalisch-Technische Bundesanstalt (PTB), Abbe Strasse 2-12, 10587 Berlin, Germany 3 Doctoral School of Physics, Faculty of Science, University of Pécs, 7624 Pécs, Ifjúság útja 6, Hungary

11:15 **A compact and calibratable von Hamos X-Ray Spectrometer based on two full-cylinder HAPG mosaic crystals for high-resolution XES** **S 12.3**

Ina Holfelder, Rolf Fliegauf, Matthias Müller, Malte Wansleben, Jan Weser, Burkhard Beckhoff
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin

11:30 **Study of the In-Depth Morphology of Thick PS-b-PMMA Films by GISAXS analysis** **S 12.4**
Federico Ferrarese Lupi 1,2*, Tommaso Jacopo Giammaria 1,3, Gabriele Seguini 1, Michele Laus 3, Natascia De Leo 2, Pavo Dubček 4, Branko Pivac 4, Sigrid Bernstorff 5, Michele Perego 1
1 Laboratorio MDM, IMM-CNR, Via C. Olivetti 2, 20864 Agrate Brianza, Italy 2 Nanoscience and Materials Division, Istituto Nazionale Ricerca Metrologica, Strada delle Cacce 91, 10135 Torino, Italy 3 Dipartimento di Scienze e Innovazione Tecnologica (DISIT), Università del Piemonte Orientale "A. Avogadro", Viale T. Michel 11, 1512 Alessandria, Italy 4 Institut Ruđer Bošković, Bijenička cesta 54, 10000 Zagreb, Croatia 5 Elettra-Sincrotrone Trieste, SS 14, Km 163.5, in AREA Science Park, 34149 Basovizza (TS), Italy

11:45 **Complete characterisation of reflection grating properties by AFM, XRD and GIXRF analysis** **S 12.5**
Diane Eichert, Werner Jark
Elettra – Sincrotrone Trieste S.c.p.A., S.S. 14 km 163.5, 34149 Basovizza (TS), Italy

12:00 **Lunch**

Battery and other material characterisations by x-ray and other techniques : Burkhard Beckhoff

14:00 **X-rays And Neutrons: The Pick & Shovel For The Materials Scientist** **S 13.1**
Artur Braun
Empa. Swiss Federal Laboratories for Materials Science and Technology

14:30 **Traceable chemical analyses of new liquid and solid battery components by X-ray spectrometry in UHV environment** **S 13.2**
Claudia Zech(1), Olga Graetz(2), Ivan Raguzin(2), Svetlozar Ivanov(3) , Matthias Müller(1), Manfred Stamm(2), Andreas Bund(3), Markus Börner(4), Marco Evertz(4), Marcelina Pyschik(4), Sascha Nowak(4) , Daniel Grötzsch(5), Wolfgang Malzer(5) and Burkhard Beckhoff(1)
1. Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany, claudia.zech@ptb.de 2. Leibniz-Institut für Polymerforschung Dresden, Hohe Straße 6. 01069 Dresden, Germany 3. Technische Universität Ilmenau, FG ECG, Gustav-Kirchhoff-Str.6, 98693 Ilmenau, Germany 4. MEET - Münster Electrochemical Energy Technology, Corrensstraße 46, 48149 Münster 5. Technische Universität Berlin, IOAP, Hardenbergstr. 36, 10623 Berlin

14:45 **Analysis of the transition metal dissolution/deposition process in lithium ion batteries** **S 13.3**
Markus Börner (1)*, Sascha Nowak (1), Felix Kollmer (2), Claudia Zech (3), Burkhard Beckhoff(3), Falko M. Schappacher (1), Martin Winter (1) (4)
(1) University of Münster, MEET Battery Research Center, 48149 Münster, Germany, (2) ION-TOF GmbH, 48149 Münster, Germany, (3) Physikalisch Technische Bundesanstalt, 10587 Berlin, Germany, (4) Helmholtz Institute Münster, Forschungszentrum Jülich, 48149 Münster, Germany

15:00 **Investigations of Ionic Liquids by Ion Chromatography, by Capillary Electrophoresis and by X-Ray Absorption Spectrometry** **S 13.4**
Marcelina Pyschik1, Claudia Zech2, Burkhard Beckhoff2, Martin Winter1 and Sascha Nowak1
1 University of Muenster, MEET Battery Research Center, Institute of Physical Chemistry Corrensstraße 46, 4819 Münster 2 Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany

15:15 **Quantifying nitrogen in GeSbTe:N alloys** **S 13.5**
C.Jeynes, E.Nolot, C. Sabbione, W. Pessoa, F. Pierre, A. Roule, M.Mantler, C.Jeynes, University of Surrey Ion Beam Centre, Guildford, England, E.Nolot, C. Sabbione, W. Pessoa, F. Pierre, A. Roule, Université Grenoble Alpes & CEA, LETI, MINATEC Campus, Grenoble, France, M.Mantler, Purkersdorf, Austria

15:30 **X-ray Spectrometry in Europe** **S 13.6**
M. Kolbe, J. Osán, W. Malzer, D. Eichert, M. Müller
European X-ray Spectrometry Association (EXSA), Konkoly-Thege M. út 29-33. 26.ép. fsz.11., H-1121 Budapest, Hungary

15:45 **Coffee break**

16:15 **Plenary Session**

Thermal characterisation and Nanomaterials : Petr Kapletek

08:30 **Local thermal calibration for quantitative measurement using thermoresistive SThM micro and nanoprobes** **S 14.1**
Eloïse Guen, David Renahy, Pierre-Olivier Chapuis, Séverine Gomés
Univ Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1, CETHIL UMR5008, F-69621, Villeurbanne, France

08:45 **Investigation of Nanoscale Thermal Contacts using a Combined Scanning Thermal Microscopy/Scanning Electron Microscopy Instrument** **S 14.2**
Séverine Gomés, Eloïse Guen, David Renahy, Pierre-Olivier Chapuis
Univ Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1, CETHIL UMR5008, F-69621, Villeurbanne, France

09:00 **Thermal properties determination by photothermal radiometry: Correction of errors on temperature measurements** **S 14.3**
Nolwenn FLEURENCE, Bruno HAY
LNE : Laboratoire National de Métrologie et d'Essais, 29 avenue Roger Hennequin, 78197 Trappes

09:15 **Traceability in Scanning Thermal Microscopy (SThM) for thermal conductivity measurements: from experimental setup to uncertainty** **S 14.4**
L. Ramiandrisoa, A. Allard, Y. Joumani, B. Hay, S. Gomés
L. Ramiandrisoa, LNE, 29 avenue Roger Hennequin 78197 Trappes Cedex,A. Allard, LNE, 29 avenue Roger Hennequin 78197 Trappes Cedex, Y. Joumani, LNE, 29 avenue Roger Hennequin 78197 Trappes Cedex, B. Hay, LNE, 29 avenue Roger Hennequin 78197 Trappes Cedex,S. Gomés, Univ Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1, CETHIL UMR5008, F-69621, Villeurbanne, France

09:30 **The phonon density of states of superconducting Sn nanowires studied by nuclear inelastic scattering of synchrotron radiation** **S 14.5**
D.P. Lozano, C. Petermann, G. Hamoir, J. Jochum, S. Couet, T. Picot, K. Houben, E. Menendez, V. Joly, V.A. Anote, M. Hu, B.B. Leu, L. Piraux, A. Vantomme, K. Temst, M.J. Van Bael
KU Leuven, Instituut voor Kern- en Stralingsfysica, Belgium, KU Leuven, Laboratory of Solid-State Physics and Magnetism, Belgium, Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Belgium, Advanced Photon Source, Argonne National Laboratory, Argonne, IL USA

09:45 **Sub-micronic mapping of deformation fields in etched HgCdTe photodiodes evidences plastic relaxation induced by processing steps** **S 14.6**
TUAZ Aymeric (1), BALLET Philippe (1), BIQUARD Xavier (2), RIEUTORD François (2)
1.-Univ. Grenoble Alpes, CEA, LETI, MINATEC campus, F38054 Grenoble, France., 2.-Univ. Grenoble Alpes, CEA, INAC-MEM, NRS, 17 rue des Martyrs, 38054 Grenoble, France.

Nanomaterials and Multi-Method Metrology : Hele Savin

10:30 **Internal photoemission metrology of inhomogeneous interface barriers** **S 15.1**
V. V. Afanas'ev, M. Houssa, A, Stesmans
Laboratory of Semiconductor Physics, Department of Physics, University of Leuven, Belgium

10:45 **Characterization of nanometer sized oxygen precipitates in highly B-doped CZ silicon** **S 15.2**
D. Kot (1), G. Kissinger (1), M. A. Schubert (1), S. Marschmeyer (1), G. Schwalb (2), A. Sattler (2)
(1) IHP , Im Technologiepark 25, 15236 Frankfurt (Oder), Germany
(2) Siltronic AG, Hanns-Seidel-Platz 4, 81737 München, Germany

11:00 **Surface characterization of thin oxide layers by combined XRF and XPS analysis** **S 15.3**
Rolf Fliegauf, Burkhard Beckhoff, Edyta Beyer, Erik Darlatt, Ina Holfelder, Philipp Hönicke, Matthias Müller, Gerhard Ulm, Michael Kolbe
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany

11:15 **Nanometer-scale depth-resolved atomic layer deposited SiO2 thin films analysed by glow discharge optical emission spectroscopy** **S 15.4**
Zhen Zhu, Chiara Modanese, Perttu Sippola, Marisa Di Sabatino, Hele Savin
Zhen Zhu - Department of Electronics and Nanoengineering, Aalto University, Espoo, Finland, and Beneq Oy, Espoo, Finland, Chiara Modanese, Perttu Sippola, Hele Savin - Department of Electronics and Nanoengineering, Aalto University, Espoo, Finland, Marisa Di Sabatino - Department of Materials Science and Engineering, Norwegian University of Science and Technology, Trondheim, Norway

Highlights for European Metrology Projects (EMRP/EMPIR) I : Emmanuel Nolot and Fernando Castro

11:30 **EMPIR 3D Stack - Update on Metrology for manufacturing 3D stacked integrated circuits** **S 16.1**
Djamel Allal
Laboratoire National de Métrologie et d'Essais (LNE), 29 avenue Roger Hennequin, 78197 Trappes Cedex, France

11:45 **EMPIR - 3DMetChemIT: Quantification of the Layer Thickness of Thin Organic Layers by SIMS** **S 16.2**
Rasmus Havelund, Martin P. Seah, Ian S. Gilmore
National Physical Laboratory, Hampton Road, Teddington, United Kingdom

12:00 **Lunch**

Highlights of European Metrology Projects (EMRP/EMPIR) II : Fernando Castro and François Piquemal

14:00 **EMRP ThinErgy: Light-matter interplay for applications in optical metrology at the nanoscale** **S 17.1**
Omar El Gawhary, Petro Sonin, Arthur van de Nes
1 VSL, National Metrology Institute of the Netherlands, 2 Optics Group, Delft University of Technology, The Netherlands

14:15 **EMRP ThinErgy: Optical characterisation of ZnO and doped ZnO thin films** **S 17.2**
Dana-Maria Rosu1, Andreas Hertwig1, Uwe Beck1, Hélène Rotella2, Emmanuel Nolot2
1. BAM Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12200 Berlin, Germany 2. CEA-LETI, 17 rue des Martyrs, 38054 Grenoble, France

14:30 **EMRP ThinErgy: Ellipsometry Measurement of solar cells with large interface roughness** **S 17.3**
P.-E. Hansen*, J. S. Madsen*, D. M. Rosu**, A. Hertwig** and L. Nielsen*
*Danish Fundamental Metrology, Kgs. Lyngby, DK-2800, Denmark **Bundesanstalt für Materialforschung und ?prüfung, Unter den Eichen 44 ? 46, 12203 Berlin, Germany

14:45 **EMRP SolCell: Calibrated GHz electrical measurements at the nanoscale for semiconducting materials including multi-junction GaAs** **S 17.4**
Ferry Kienberger
Keysight Technologies Austria GmbH, Keysight Labs Linz

15:00 **EMRP-SolCell-Scanning Microwave Microscopy applied to semiconducting GaAs structures** **S 17.5**
Arne Buchter(1), Johannes Hoffmann(1), Alexandra Delvallee(2), Enrico Brinciotti(3), Dimitri Hapiuk(4,5), Christophe Licitra(4,5), Kevin Louarn(2,6), Guilhem Almuneau(6), François Piquemal(2), Markus Zeier(1), Ferry Kienberger(3)
1) Federal Institute of Metrology, METAS, Lindenweg 50, 3003 Bern-Wabern, Switzerland, 2) LNE, 29 avenue Roger Hennequin, F-78197, Trappes, France, 3) Keysight Technologies Austria, Keysight Labs, Gruberstrasse 40, 4020 Linz, Austria, 4) Univ. Grenoble Alpes, 38000 Grenoble, France, 5) CEA, LETI, MINATEC Campus, 38054 Grenoble, France 6) LAAS-CNRS, Université de Toulouse, CNRS, UPS, Toulouse, France

15:15 **EMRP-SolCell: Laser-based Differential Spectral Responsivity Measurements for the Calibration of Multi-Junction Solar Cells.** **S 17.6**
Florian Witt, Ingo Kröger, Stefan Winter
Physikalisch-Technische Bundesanstalt, AG 4.14 «Solar Cells» Bundesallee 100 38116 Braunschweig Germany

EMRP ThinErgy Workshop on Optical Metrology : Farshid Manoocheri

16:00 **Accuracy and Traceability of complex properties determined by Spectroscopic Ellipsometry** **S 18.1**
Andreas Hertwig, Dana-M. Rosu, Uwe Beck
Bundesanstalt für Materialforschung und &#8211,prüfung (BAM) Unter den Eichen 87 12200 Berlin Germany

16:30 **Tip-enhanced Photoluminescence and Raman studies on mono- and bi-layer 2D Materials** **S 18.2**
Marc Chaigneau1, Yoshito Okuno1, Andrey Krayev2, Filippo Fabbri3
1HORIBA Scientific, passage Jobin Yvon, Palaiseau, France, 2AIST-NT Inc., Bel Marin Keys Blvd, Novato, USA, 3IMEM-CNR Institute, Parco Area delle Scienze, Italy

17:00 **Nanometric characterization by optical technics is applied on small structures required by advanced packaging in semiconductor** **S 18.3**
Dario Alliata, Frederic Pernot, Stephane Godny, Philippe Gastaldo
UnitySC 611 rue Aristide Berges ZA Pre Millet F-38330 Monbonnot Saint Martin France

17:30 **Optical Characterization of Thin Films** **S 18.4**
Farshid Manoocheri, Dana Maria Rosu, Andreas Hertwig, Emmanuel Nolot, Hélène Rotella and Erkki Ikonen
Farshid Manoocheri, Erkki Ikonen, Metrology Research Institute, Aalto University, Espoo, Finland Dana Maria Rosu, Andreas Hertwig, Federal Institute for Materials Research and Testing (BAM), Berlin, Germany Emmanuel Nolot, Hélène Rotella, Univ. Grenoble Alpes, 38000 Grenoble (CEA-LETI), France Erkki Ikonen, MIKES Metrology, VTT Technical Research Centre of Finland Ltd, Espoo, Finland

18:00 **Quantitative chirality assessment of a reference material of single-walled carbon nanotubes using UV-VIS-NIR absorption spectros** **S 18.5**
Ying Tian 1,2,*, Hua Jiang 2, Ilya V. Anoshkin 2, Lauri J.I. Kauppinen 2, Kimmo Mustonen2, Albert G. Nasibulin 2,3, Esko I. Kauppinen 2
1 Department of Physics, Dalian Maritime University, Dalian, Liaoning 116026, China 2 NanoMaterials Group, Department of Applied Physics, Aalto University School of Science, Puumiehenkuja 2, 00076 AALTO, Finland 3 Skolkovo Institute of Science and Technology 100 Novaya st., Skolkovo, Moscow, 143025, Russia

E-MRS 2017 Spring Meeting
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SYMPOSIUM T

Synthesis, processing and characterization of nanoscale multi functional oxide films VI

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Symposium Organizers :

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GDR OXYFUN

Growth and synthesis processes I : M.Nistor, N.Laidani, A. Weidenkaff, N. Jedrecy

09:00 **Epitaxial growth of nanostructured functional oxides on silicon by solution chemistry** **T 1.1**
José M. Vila-Fungueiriño1, A. Gómez2, R. Moalla3, G. Saint-Girons3, C. Magén4, J. Gázquez2, R. Bachelet3, M. Gich2, F. Rivadulla5, A. Carretero-Genevrier1,3
1 Institut d´Électronique et des Systèmes (IES) UMR 5214, Bâtiment 5, 860 rue Saint Priest, 34090 Montpellier, France, 2 Institut de Ciència de Materials de Barcelona (ICMAB), Consejo Superior de Investigaciones Científicas (CSIC), Campus UAB 08193 Bellaterra, Catalonia, Spain, 3 Institut des Nanotechnologies de Lyon (INL) UMR 5270, 36 avenue Guy de Collongue, 69134 Ecully, France, 4 Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain, 5 Centro de Investigación en Química Biolóxica e Materiais Moleculares (CIQUS) and Departamento de Química-Física, Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Galicia, Spain

09:15 **Dopant Size Effects on Interfacial Superconductivity in Lanthanum Cuprate Bilayers** **T 1.2**
Y. Eren Suyolcu, Yi Wang, Federico Baiutti, Giuliano Gregori, Georg Cristiani, Wilfried Sigle, Joachim Maier, Peter A. van Aken, Gennady Logvenov
Max Planck Institute for Solid State Research, Heisenbergstr.1, 70569 Stuttgart, Germany

09:30 **Electrochemically Induced Insulator-Metal-Insulator Transformations of Vanadium Dioxide Nanocrystal Films** **T 1.3**
Clayton J Dahlman, Gabriel LeBlanc, Amy Bergerud, Delia J Milliron
The University of Texas at Austin McKetta Department of Chemical Engineering

09:45 **Strain and composition effects in the Metal-Insulator transition of VO2 films epitaxially grown on (001) TiO2** **T 1.4**
Virginie THERY(1), Alexandre BOULLE(1), Aurelian CRUNTEANU(2), Jean-Christophe ORLIANGES(2), Annie BESSAUDOU(2)
(1) SPCTS, CNRS UMR 7315, Université de Limoges, Centre Européen de la Céramique, 12 rue Atlantis, 87068 Limoges Cedex, France , (2) XLIM, UMR 7252 CNRS, Université de Limoges, 123 avenue Albert Thomas, 87060 Limoges Cedex, France

10:00 **Coffee break**

Characterisation of thin films : N. Laidani

10:30 **Positron annihilation spectroscopy techniques to characterize open volumes in oxide thin films** **T 2.1**
Roberto S. Brusa
University of Trento, Department of Physics and INFN-TIFPA Via Sommarive 14, 32123 Povo, Trento, Italy

11:00 **Localized defect states in HfO2 and Al2O3 films prepared by atomic layer deposition** **T 2.2**
Karsten Henkel, Malgorzata Kot, and Dieter Schmeißer
BTU Cottbus-Senftenberg, Applied Physics and Sensors, K.-Wachsmann-Allee 17, 03046 Cottbus, Germany

11:15 **Electronic and polaronic physics of oxide interfaces explored by soft-X-ray ARPES** **T 2.3**
V.N. Strocov (1), A. Husanu (1), C. Cancellieri (2), L.L. Lev (1,3), A.S. Mishchenko (4)
(1) Swiss Light Source, Paul Scherrer Insitute, Villigen-PSI, Switzerland, (2) EMPA, Duebendorf, Switzerland, (3) National Research Centre «Kurchatov Institute», Moscow, Russia, (4) RIKEN Center for Emergent Matter Science, Saitama, Japan

11:30 **Field-dependent electronic properties of a multiferroic interface obtained during In-operando angle resolved photoelectron spect** **T 2.4**
M. A. Husanu*1, D. G. Popescu1, L. Tanase1, C. M. Teodorescu1, L. Hrib1, C. Chirila1, L. Pintilie1, D. Sostina2 and V. N. Strocov2
1 National Institute of Material Physics, Magurele, 077125, Romania 2 Paul Scherrer Institut, 5235 Villigen, Switzerland

11:45 **Size-dependent Luminescence in HfO2 Nanocrystals for Rare-Earth-free White Light Emitting Phosphors** **T 2.5**
Alessandro Lauria‡, Irene Villa†, Anna Vedda†, Markus Niederberger‡
†: Department of Materials Science, University of Milano-Bicocca, Via R. Cozzi 55, 20125 Milano, Italy, ‡: Laboratory for Multifunctional Materials, Department of Materials, ETH Zürich, Vladimir-Prelog-Weg 5, 8093 Zürich, Switzerland.

12:00 **Lunch**

Growth and synthesis processes II : R. Brusa

14:00 **Multifunctional Metal Oxide Thin Films Grown by Atomic Layer Deposition and Chemical Solution Deposition for Advanced Energy App** **T 3.1**
Martyn E Pemble, Shona Doyle, Jennifer Halpin, Jan Kegel, Harry Manley, Melissa McCarthy, Shane O'Brien, Ian M Povey, Louise Ryan, Adrian Walsh
Department of Chemistry and Tyndall National Institute, University College Cork, Cork, Ireland

14:30 **Synthesis of novel ZnO/ZnAl2O4 multi co-centric nanotubes and their long-term stability in photocatalytic application** **T 3.2**
Maryline Nasr, Roman Viter, Cynthia Eid, Fabienne Warmont, Roland Habchi Philippe Miele and Mikhael Bechelany
Maryline Nasr, Philippe Miele, Mikhael Bechelany: Institut Européen des Membranes IEM UMR-5635, Université de Montpellier, ENSCM, CNRS, Place Eugène Bataillon, F-34095 Montpellier Cedex 5, France. Maryline Nasr, Cynthia Eid, Roland Habchi: EC2M, Faculty of Sciences and Research Platform for Nanosciences and Nanotechnologies, Lebanese University, Campus Pierre Gemayel, Fanar, 90656, Lebanon. Roman Viter: Institute of Atomic Physics and Spectroscopy, University of Latvia, 19 Raina Blvd., LV 1586 Riga, Latvia Fabienne Warmont: ICMN, CNRS/ Université d'Orléans, 1b rue de la Férollerie, CS 40059, 45071 Orléans Cedex 2, France

14:45 **HiPIMS deposition of Ta-O-N coatings for water splitting application** **T 3.3**
J. Capek, S. Batkova, S. Haviar, J. Houska, T. Duchon
J. Capek, S. Batkova, S. Haviar, J. Houska - Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Plze?, Czech Republic, T. Duchon - Department of Surface and Plasma Science, Charles University, Praha, Czech Republic,

15:00 **Mn-based Perovskites Nanoparticles: Structure vs Activity Towards the Oxygen Reduction Reaction** **T 3.4**
Veronica Celorrio, David J. Fermin
School of Chemistry, University of Bristol, Cantocks Close, Bristol, BS8 1TS

15:15 **Fabrication of Photoactive TiO2/Metallic Foams by Atomic Layer Deposition for Photocatalytic H2 Generation** **T 3.5**
S. Murcia-López1, M. Biset-Peiró1, T. Andreu1,2, J.R. Morante1,2
1. Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930, Sant Adrià de Besós, Spain 2. University of Barcelona (UB), Martí i Franquès 1, 08028, Barcelone, Spain

15:30 **Coffee break**

Transparent conducting oxides I : M.Pemble

16:00 **Room temperature local epitaxial growth of p-type TCO thin films** **T 4.1**
Y. Wang, J. Ghanbaja, D. Horwat, J.F. Pierson
Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Nancy, France

16:15 **Thermal solid-phase crystallization of amorphous CuCrO2:N thin films deposited by reactive RF magnetron sputtering** **T 4.2**
Hiroshi Chiba, Naotoshi Hosaka, Tomoyuki Kawashima, Katsuyoshi Washio
Graduate School of Engineering, Tohoku University, Research Fellow of Japan Society for the Promotion of Science

16:30 **High-Throughput Computational Search for p-type High-performance Transparent Semiconducting Oxides** **T 4.3**
Geoffroy Hautier(1), Joel Varley(2), Viet Anh Ha(1), Anna Miglio(1), Michiel Van Setten(1), Gian-Marco Rignanese(1)
1. University of Catholique-Louvain, Louvain-la-Neuve, Belgium. 2. Lawrence Livermore National Laboratory, Livermore, CA, United States.

16:45 **High mobility p-type thin film transistors based on Cu2O semiconducting channels deposited from solutions at low temperatures** **T 4.4**
N. Kouppas1, D. Afouxenidis1, W. I. Milne2, A. Nathan2 and G. Adamopoulos*1
1Engineering Department, Lancaster University, Lancaster LA1 4YR, UK, 2Department of Engineering, University of Cambridge, 9 JJ Thomson Avenue, Cambridge CB3 0FA, UK

17:00 **Laser Annealing of Transparent Conductive Oxides: A platform towards flexible and large area processing of transparent TFT devic** **T 4.5**

S. Dellis, S. Elhamali, I. Isakov, N. Kalfagiannis, K. Tetzner, P. Down, C. Ramsdale, R Price, T. D. Anthopoulos, D. C. Koutsogeorgis
Department of Physics, School of Science and Technology, Nottingham Trent University, UK, Department of Physics, School of Science and Technology, Nottingham Trent University, UK, Department of Physics and Centre for Plastic Electronics, Imperial College London, London, UK, Department of Physics, School of Science and Technology, Nottingham Trent University, UK, Department of Physics and Centre for Plastic Electronics, Imperial College London, London, UK, PragmatIC Printing Ltd, National Centre for Printable Electronics, Sedgefield, Durham, UK, PragmatIC Printing Ltd, National Centre for Printable Electronics, Sedgefield, Durham, UK, PragmatIC Printing Ltd, National Centre for Printable Electronics, Sedgefield, Durham, UK, Department of Physics and Centre for Plastic Electronics, Imperial College London, London, UK, Department of Physics, School of Science and Technology, Nottingham Trent University, UK

17:15 **Measuring carrier density and mobility of transparent conductive oxides: electrical versus optical techniques** **T 4.6**

Andrea Crovetto [1], Tobias Ottsen [1], Eugen Stamate [2], Daniel Kjær [3], Jørgen Schou [4], Ole Hansen [1]
[1] DTU Nanotech, Technical University of Denmark, [2] DTU Energy, Technical University of Denmark, [3] CAPRES A/S, Kgs. Lyngby, Denmark, [4] DTU Fotonik, Technical University of Denmark,

Ferroelectric, piezoelectric properties : A.Ney

09:00 **Ferroelectric brownmillerite SrFeOx epitaxial thin film** **T 5.1**

Woo Seok CHOI
Department of Physics, Sungkyunkwan University, Suwon, Gyeonggi-do, Korea

09:30 **Strain Engineering of Monoclinic Domains in (K,Na)NbO3 Epitaxial Layers: A Pathway to Enhanced Piezoelectric Properties** **T 5.2**

M. Schmidbauer, D. Braun, T. Markurt, M. Hanke, J. Schwarzkopf
Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany, Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany, Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany, Paul-Drude Institute for Solid State Electronics, Hausvogteiplatz 5-7, 10117 Berlin, Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany

09:45 **Structural and ferroelectric properties of BaTiO3 thin films grown on different substrates** **T 5.3**

B. Wague-1, N. Baboux-2, A. Babel-3, F. Formosa-3, G. Niu-4 M. Apreutesei-1, P. Rojo Romeo-1, B. Vilquin-1, Y.Robach-1,
1-Universite de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 ECULLY Cedex, France
2-Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 VILLEURBANNE Cedex, France 3-Université de Savoie Mont Blanc, Systèmes et Matériaux pour la Mécatronique, 7, chemin de bellevue, 74940 Annecy-le-vieux. 4-Xian Jiaotong University, Electronic Materials Institute, Xian Ning west Road 28, 710049 Xian, China.

10:00 **Coffee break**

Magnetic and electronic properties : N.Jedrecy

10:30 **Coalescence-driven, uncompensated antiferromagnetic order in Co doped ZnO** **T 6.1**

V. Ney, B. Henne, F. Wilhelm, K. Ollefs, A. Rogalev, and A. Ney
Solid State Physics Division, Johannes Kepler University, Linz Austria, Solid State Physics Division, Johannes Kepler University, Linz Austria, ESRF - The European Synchrotron, Grenoble, France, ESRF - The European Synchrotron, Grenoble, France, ESRF - The European Synchrotron, Grenoble, France, Solid State Physics Division, Johannes Kepler University, Linz Austria,

11:00 **Chemical strain engineering of magnetism in oxide thin films** **T 6.2**

O. Copie(1,2), J. Varignon(3,4), H. Rotella(1), G. Steciuk(1), Ph. Boullay(1), A. Pautrat(1), A. David(1), B. Mercey(1), Ph. Ghosez(3), W. Prellier(1)
(1)Normandie Univ., ENSICAEN, UNICAEN, CNRS, CRISMAT, 6 Boulevard Maréchal Juin, F-14050 Caen Cedex 4, France. (2)Institut Jean Lamour, UMR 7198 CNRS-Université de Lorraine, F-54506 Vandœuvre-lès-Nancy, France , (3)Physique Théorique des Matériaux, Q-MAT, CESAM, Université de Liège, Allée du 6 août, 20, 4000 Sart Tilman, Belgium. (4)Unité Mixte de Physique UMR 137 CNRS/Thales, 1 avenue A. Fresnel, 91767 Palaiseau, France, and Université Paris-Sud, 91405 Orsay, France

11:15 **Localization and Interaction Effects in Nanostructured Magnetic Oxides** **T 6.3**

Laurie E. Calvet, G. Agnus, Ph Lecoeur
Centre de Nanosciences et de Nanotechnologies, CNRS UMR 9001, Univ. Paris-Sud, Université Paris-Saclay, C2N – Orsay, 91405 Orsay, France

11:30 **Electronic and magnetic properties of (Co,Mn)3O4 spinel oxides** **T 6.4**

Rémi Arras,1 Thi Ly Le,2 Sophie Guillemet-Fritsch,2 Pascal Dufour,2 Christophe Tenailleau2
1. CEMES, Université de Toulouse, CNRS, UPS, 29, rue Jeanne-Marvig, F-31055 Toulouse, France, 2. CIRIMAT, Université de Toulouse, CNRS, INPT, UPS, 118 Route de Narbonne, 31062 Toulouse Cedex 9, France

11:45 **Ultrathin Magnetite in Fe3O4/MgO super lattices – resolving the origin of an enhanced, thin film magnetic moment** **T 6.5**

Ozhet Mauit (a), Karsten Fleischer (a), Cormac O'Coileain (a), Brendan Bulfin (b), Daniel S. Fox (a), Christopher M. Smith (a), Hongzhou Zhang (a), and Igor V. Shvets (a)
a) School of Physics and CRANN, Trinity College Dublin, The University of Dublin, Ireland b) Institute of Solar Research, German Aerospace Center (DLR), 51147 Köln, Germany

12:00 **Lunch**

Non-stoichiometry, nanocomposites : W.S.Choi

14:00 **Highly disordered thin film oxides – from insulator-metal transition to resistive switching** **T 7.1**
Manfred Martin
Institute of Physical Chemistry RWTH Aachen University Landoltweg 2, 52056 Aachen, Germany

14:30 **Photoinitiated Synthesis of Nanocrystalline Metal Oxides-Reduced Graphitic Oxides In-Situ Nanocomposite Thin Films** **T 7.2**
Sijun Luo,1 Briley B. Bourgeois,1 Moses Oguntoye,2 Brian C. Riggs,1 Shiva Adireddy,1 Noshir Pesika,2 and Douglas B. Chrisey1
1. Department of Physics and Engineering Physics, Tulane University, New Orleans, Louisiana 70118, USA 2. Department of Chemical and Biomolecular Engineering, Tulane University, New Orleans, Louisiana 70118, USA

14:45 **Reproducibility and off-stoichiometry issues in the growth of NdNiO3 thin films by pulsed laser deposition** **T 7.3**
D. Preziosi(1), X. Li(2), A. Sander(1), A. Gloter(2), A. Barthélémy(1) and M. Bibes(1)
(1) Unité Mixte de Physique CNRS/Thales, 1 avenue A. Fresnel, 91767 Palaiseau, France, and Univ. Paris-Sud, 91405 Orsay, France. (2) Laboratoire de Physique des Solides CNRS&Univ. Paris-Sud 11 Bât. 510 - F91405 Orsay, France.

15:00 **Enhancing oxidation activity of ceria through VOx-, CrOx- and MnOx-modifications of CeO2 (111)** **T 7.4**
Michael Nolan, M. Veronica Ganduglia-Pirovano
MN: Tyndall National Institute, University College Cork VGP: Institute for Petrochemistry, CSIC, Madrid, Spain.

15:15 **Fabrication and Improvement of Chemical Sensing Performance of Hierarchically Assembled Metal Oxide Nanostructures** **T 7.5**
Vardan Galstyan, Andrea Ponzoni, Iskandar Kholmanov, Elisabetta Comini, Veronica Sberveglieri, Nicola Poli, Giorgio Sberveglieri
Sensor Lab, CNR, National Institute of Optics (INO) and Department of Information Engineering, University of Brescia, Via Valotti 9, 25133 Brescia, Italy, Sensor Lab, CNR, National Institute of Optics (INO) and Department of Information Engineering, University of Brescia, Via Valotti 9, 25133 Brescia, Italy, Sensor Lab, CNR, National Institute of Optics (INO) and Department of Mechanical Engineering, The University of Texas at Austin, Austin, TX 78712, USA, Sensor Lab, CNR, National Institute of Optics (INO) and Department of Information Engineering, University of Brescia, Via Valotti 9, 25133 Brescia, Italy, CNR - Institute of Biosciences and Bioresources (IBBR), Via Madonna del Piano, 10 - 50019 Sesto Fiorentino (Florence), Italy, Sensor Lab, CNR, National Institute of Optics (INO) and Department of Information Engineering, University of Brescia, Via Valotti 9, 25133 Brescia, Italy, Sensor Lab, CNR, National Institute of Optics (INO) and Department of Information Engineering, University of Brescia, Via Valotti 9, 25133 Brescia, Italy,

15:30 **Coffee break**

Oxide applications : M.Martin

16:00 **Impact of columnar microstructure on resistive switching behaviour of amorphous silicon suboxide films** **T 8.1**
Manveer S. Munde, Adnan Mehonic, Mark Buckwell, Luca Montesi, Michel Bosman, Anthony J. Kenyon,
University College London, University College London, University College London, University College London, Institute for Materials Research and Engineering, Singapore, University College London,

16:15 **TiO2-based memristor enables experimental biological-like STDP coincidence detection** **T 8.2**
Mirko Prezioso(1), Farnood Merrikh Bayat(1), Yingpeng Zhong(2), Dmitri Strukov(1)
(1)Department of Electrical and Computer Engineering, University of California at Santa Barbara, Santa Barbara, CA 93106 (2)Huazhong University of Science and Technology, Wuhan 430074, China

16:30 **Photonic curing of solution-processed metal oxide semiconductors for the rapid fabrication of low-voltage thin-film transistors** **T 8.3**
Kornelius Tetzner, Yen-Hung Lin, Anna Regoutz, Thomas D. Anthopoulos
Imperial College London, London SW7 2AZ, United Kingdom

16:45 **New Strategies to Integrate Functional Oxide Nanowire Thin Films on Si** **T 8.4**
Jose Manuel Vila-Fungueiriño1, Marijn van de Putte2, Raquel Aymerich2, Andres Gomez2, Cesar Magen3, Jaume Gazquez2, Juan Rodriguez-Carvajal4, Adrian Carretero-Genevrier1, Narcis Mestres2
1 Institut d'Electronique et des Systemes (IES), CNRS, Universite Montpellier 2 860 Rue de Saint Priest, 34095 Montpellier 2 Institut de Ciència de Materials de Barcelona ICMAB, Consejo Superior de Investigaciones Cientificas CSIC, Campus UAB 08193 Bellaterra, Catalonia, Spain 3 Instituto de Nanociencia de Aragón INA, Universidad de Zaragoza, 50018 Zaragoza, Spain 4 Institut Laue-Langevin, 6 rue Jules Horowitz, BP 156, 38042 Grenoble Cedex 9, France

17:00 **Epitaxial BaTiO3 on SiGe: nanoscale characterization of the film and its interface with the semiconductor** **T 8.5**
S. Schamm-Chardon 1,3, C. Magen 2,3, L. Mazet 4, R. Cours 1, M.M. Frank 5, V. Narayanan 5, C. Dubourdieu 4,6
1- CEMES-CNRS, Université de Toulouse, 29 rue Jeanne Marvig, 31055 Toulouse, France, 2- LMA-INA, Universidad de Zaragoza and Fundación ARAID, 50018 Zaragoza, Spain, 3- Transpyrenean Associated Laboratory for Electron Microscopy, CEMES-INA, CNRS-University of Zaragoza, Spain, 4- INL, UMR CNRS 5270, Ecole Centrale de Lyon, 69134 Ecully, France, 5- IBM T.J. Watson Research Center, 1101 Kitchawan Road, Yorktown Heights, New York 10598, USA, 6- Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz , 14109 Berlin, Germany

Poster Session I : N.Laidani

17:15 **Improved Efficiency of Perovskite Solar Cells Using Ni-doped Zinc Oxide Nanorod Arrays as the Electron Transporting Layer** **T PI.1**
Pin-Yao Chen, Sheng-Hsiung Yang
Institute of Lighting and Energy Photonics, National Chiao Tung University

17:15 **Combination of Tungsten Trioxide Nanomaterials and Cs2CO3/PCBM Bilayer for Improving Performance of Perovskite Solar Cells** **T PI.2**
Chih-Ming Chen, Sheng-Hsiung Yang
Institute of Lighting and Energy Photonics, National Chiao Tung University

17:15 **Synthesis of silver nanoparticles on exfoliated clay to form highly conductive nanohybrid powder and films** **T PI.3**
Peng-Yang Huang,Sheng-Yen Shen, Jiang-Jen Lin
Jiang-Jen Lin

17:15 **COMPOSITION, MORPHOLOGY, AND ELECTRONIC STRUCTURE OF THE NANOPHASES CREATED ON THE SiO2 SURFACE BY Ar+ ION BOMBARDMENT** **T PI.4**
M.B. Yusupjanova, D.A.Tashmukhamedova, A.N. Urokov, J.Sh. Sodikjonov
Tashkent state technical university

17:15 **Optical Properties of Sn-doped ZnO Thin Films Studied using Spectroscopic Ellipsometry** **T PI.5**
Hyeon Seob So, Sang Bin Hwang, Dae Ho Jung, Hosun Lee
Department of Applied Physics, Kyung Hee University, Yong-In 17104, Republic of Korea

17:15 **A Novel Superhydrophilic and Underwater Superoleophobic Silica Nanowire-Based Mesh for Multifunctional Water Purification** **T PI.6**
Qinglang Ma, Hua Zhang*
Qinglang Ma: 1. Center for Programmable Materials, School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore. 2. Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Interdisciplinary Graduate School, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore, Hua Zhang*: Center for Programmable Materials, School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore.

17:15 **Enhancement of Photocurrent by Surface Oxygen Adsorption on SnO2 Thin-films** **T PI.7**
Po-Ming Lee, Cheng-Yi Liu
Department of Chemical and Materials Engineering, National Central University, Taoyuan City, Taiwan

17:15 **Thin Ti2O3 films produced by cathodic arc sputtering** **T PI.8**
Petr Shvets, Alexander Goikhman, Ksenia Maksimova
Immanuel Kant Baltic Federal University, the Institute of Physics, Mathematics and Informatics, REC 'Functional Nanomaterials', Kaliningrad, Russian Federation

17:15 **Physical synthesis and jetting behaviour of metal oxide based inks for printed electronics** **T PI.9**
Sonia Sharma, Sumukh S Pande, and P. Swaminathan
Sonia Sharma, Dept. of Metallurgical and Materials Engineering, IIT - Madras, INDIA, Sumukh S Pande, Dept. of Metallurgical and Materials Engineering, NIT - Trichy, INDIA, P. Swaminathan, Dept. of Metallurgical and Materials Engineering, IIT - Madras, INDIA.

17:15 **NEW OXIDE/METAL/OXIDE ELECTRODES FOR SOLAR CELL APPLICATIONS** **T PI.10**
1, 2. Laura HROSTEA, 1. Andrius AUKŠTUOLIS, 1,2. Mihaela BOCLINCA, 3. Marcela SOCOL, 2. Liviu LEONTIE, 3. Anca STANCULESCU, 1. Mihaela GIRTAN, mihaela.girtan@univ-angers.fr
1. Photonics Laboratory, Angers University, 2, Bd. Lavoisier, 49045, Angers, France, 2. Faculty of Physics, "Alexandru Ioan Cuza" University of Iasi, Romania, 3. National Institute of Materials Physics, Bucharest, Romania

17:15 **Synergetic transport property in graphene-SrTiO3 heterostructure** **T PI.11**
Kyoeng Tae Kang, Haeyong Kang, Jeongmin Park, Dongseok Suh* and Woo Seok Choi*
Kyoeng Tae Kang, Woo Seok Choi Department of Physics, Sungkyunkwan University, Suwon 16419, Korea Haeyong Kang, Dongseok Suh Department of Energy Sciences, Sungkyunkwan University, Suwon 16419, Korea Jeongmin Park Department of Energy Sciences, Sungkyunkwan University, Suwon 16419, Korea Center for Integrated Nanostructure Physics, Institute for Basic Science (IBS), Sungkyunkwan University, Suwon 16419, Korea

17:15 **Direct liquid injection chemical vapor deposition of porous tungsten oxycarbide thin films** **T PI.12**
N. Zanfoni, P. Simon, L. Imhoff, B. Domenichini, S. Bourgeois
Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS – Université Bourgogne Franche-Comté, 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex, France

17:15 **Synthesis and Structure of Perovskite-type Oxide Nanosheets Doped with Magnetic Elements** **T PI.13**
Yasuo Ebina, Yuichi Michiue, Takayoshi Sasaki
International Center for Materials Nanoarchitectonics, National Institute for Materials Science

17:15 **The relationship between the physical properties and the growth methods of ZnO thin films deposited under atmospheric pressure** **T PI.14**
Masato Imai(1)(2), Marin Watanabe(1)(2), Himeka Tominaga(1), Yohei Yamaga(1), Kenji Yoshino(1)(2), Yuhei Ogomi(2)(3), Qing Shen(2)(4), Taro Toyoda(2)(4), Takashi Minemoto(2)(5) and Shuzi Hayase(2)(3)
(1) Department of Applied Physics and Electronics Engineering, Faculty of Engineering, University of Miyazaki, (2) CREST, Japan Science and Technology Agency (JST), (3)Graduate School of Life Science and Systems Engineering, Kyusyu Institute Technology, (4) Department of Engineering Science, Faculty of Informatics and Engineering, The University of Electro-Communications, (5) Department of Electrical and Electronic Engineering, Ritsumeikan University

17:15 **Metal-insulator transition and sensing properties of single-crystalline VO2 nanowires decorated with gold nanoparticles** **T PI.15**
Heera Kwon, Jaehee Cho, Woong-Ki Hong
School of Semiconductor and Chemical Engineering, Semiconductor Physics Research Center, Chonbuk National University, Jeonju 54896, Korea , Jeonju Center, Korea Basic Science Institute, Jeonju 54907, Korea

17:15 **Activation of methane on metal-modified ceria (111)** **T PI.16**
John J. Carey and Michael Nolan
Tyndall National Institute, University College Cork

17:15 **Synthesis of vanadium dioxide nanowires by pulsed laser deposition and their electrical characterization** **T PI.17**
Giwan Seo, Bong-Jun Kim, Hyun Seok Song
Giwan Seo, 1.Division of Bioconvergence Analysis, Korea Basic Science Institute (KBSI), Korea, 2. Center for Convergent Research of Emerging Virus Infection, Korea Research Institute of Chemical Technology (KRICT), Korea, Bong-Jun Kim, Mobrik Co. Ltd., Korea, Hyun Seok Song, 1.Division of Bioconvergence Analysis, Korea Basic Science Institute (KBSI), Korea, 2. Center for Convergent Research of Emerging Virus Infection, Korea Research Institute of Chemical Technology (KRICT), Korea,

17:15 **Correlations between Structure, Composition and Electrical Properties of Metal Oxide Periodic Multilayers Sputter Deposited by G** **T PI.18**
Valérie Potin1, Arnaud Cacucci1, Luc Imhoff1 and Nicolas Martin2
1Laboratoire Interdisciplinaire Carnot de Bourgogne, UMR 6303 CNRS - Université de Bourgogne Franche-Comté, 21078 Dijon CEDEX, France *valerie.potin@u-bourgogne.fr
2 Institut FEMTO-ST, UMR 6174, CNRS, Université de de Bourgogne Franche-Comté, ENSMM, UTBM, 32 Avenue de l'Observatoire, 25044 Besançon Cedex, FRANCE

17:15 **Solution processed, high mobility thin film transistors employing Yttrium-doped Indium Zinc Oxide semiconducting channels** **T PI.19**
D. Afouxenidis1, G. Vourlias2, W. I. Milne3 and G. Adamopoulos*1
1Engineering Department, Lancaster University, Lancaster LA1 4YR, UK, 2Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, GREECE, 3Department of Engineering, University of Cambridge, 9 JJ Thomson Avenue, Cambridge CB3 0FA, UK

17:15 **High negative bias stress stability of metal oxide-based TFTs employing tungsten-doped Indium Oxide semiconducting channels** **T PI.20**
K. Paxinos1, W. I. Milne2 and G. Adamopoulos*1
1Engineering Department, Lancaster University, Lancaster LA1 4YR, UK, 2Department of Engineering, University of Cambridge, 9 JJ Thomson Avenue, Cambridge CB3 0FA, UK

17:15 **Structural and dielectric properties of yttria-stabilised zirconia deposited from solutions at moderate temperatures in air** **T PI.21**
G. Antoniou1, G. Vourlias2, W. I. Milne3 and G. Adamopoulos*1
1Engineering Department, Lancaster University, Lancaster LA1 4YR, UK, 2Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, GREECE, 3Department of Engineering, University of Cambridge, 9 JJ Thomson Avenue, Cambridge CB3 0FA, UK

17:15 **The influence of dopants on grain boundary scattering in In2O3 thin films** **T PI.22**
Mareike Frischbier, Karoline Hoyer, Andreas Hubmann, Hans Wardenga, Andreas Klein
Technische Universität Darmstadt, Jovanka-Bontschits-Straße 2, 64287 Darmstadt, Germany

17:15 **Low-cost combination of Ni(OH)2-ZnO nanoflakes-nanorods for non-enzymatic glucose sensing** **T PI.23**
Vincenzina Strano, Salvo Mirabella
MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy

17:15 **Ni(OH)2/Ni nanofoam for low-cost, high sensitive glucometer devices** **T PI.24**
M. Urso1, S. Petralia2, E. Castagna2, S. Conoci2, F. Priolo1, S. Mirabella1
1. MATIS CNR-IMM and Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy 2. STMicroelectronics Stradale Primosole 95121 Catania – Italy

17:15 **Effects of Sn content and thermal annealing on the structural and optoelectronic properties of Sn-doped ZnO thin films** **T PI.25**
A. Hadri1, M. Taibi2, B. Fares1,M. Sekkati1, A.E. Hat1, A. Mzerd1
1 University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco. 2 University of Mohammed V, Ecole Normale Superieure, LPCMIN, Rabat-Morocco.

17:15 **Memristive Property Based on Metal-Insulator Transition in VO2 Thin Film Device** **T PI.26**
Giwan Seo, Bong-Jun Kim, Yong Wook Lee, Hyun Seok Song
-Giwan Seo, 1.Division of Bioconvergence Analysis, Korea Basic Science Institute (KBSI), Korea, 2. Center for Convergent Research of Emerging Virus Infection, Korea Research Institute of Chemical Technology (KRICT), Korea, -Bong-Jun Kim, Mobrik Co. Ltd.,

17:15 **RESEARCH OF PROCESSES OF ELECTRONIC EXCITATION ENERGY TRANSFER ON A SURFACE SIO2** **T PI.27**
Kazbek Baktybekov , Aliya Baratova
U.M. Sultangazin Research Space Institute, Mirzoyan str. 3, 010008, Astana, Kazakhstan, L.N. Gumilyov Eurasian National University, Kazhymukan str. 13, 010008, Astana, Kazakhstan

17:15 **Carbon nanotubes by dual target off-axis ablation technique** **T PI.28**
Iuliana P. Morjan 1, Ion Morjan 1, Alina Ilie 1, Monica Scarisoreanu 1, Eugen Vasile 2, Andrei Galateanu 3, Lavinia Gavrila-Florescu 1, Florian Dumitrache 1
1. National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor St., P.O. Box MG-36, Bucharest, Romania 2. Politehnica" University of Bucharest, Faculty of Applied Chemistry and Materials Science, Gh. Polizu. 1-7, Bucharest, Romania 3. National Institute of Materials Physics, Laboratory of Magnetism and Superconductivity, Atomistilor Str., No. 405A PO Box MG 7, 077125, Magurele, Romania

17:15 **Ag/ZnO NANOSTRUCTURES FOR RECYCABLE SERS SUBSTRATES** **T PI.29**
A.Og. Dikovska 1, G.B. Atanasova 2, M. E. Koleva 1, N.N. Nedyalkov 1
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

17:15 **Periodical nanostructuring of dielectric surfaces using time-modulated nanosecond IR laser radiation** **T PI.30**
Pierre Lorenz1, Igor Zagoranskiy1, Frank Frost1, Lukas Bayer1, Martin Ehrhardt1,2, Klaus Zimmer1
1 Leibniz-Institut für Oberflächenmodifizierung e. V., Permoserstraße 15, 04318 Leipzig, Germany, 2 Advanced Launching Co-innovation Center, Nanjing University of Science and Technology, #200 XiaoLingWei, 210094 Nanjing, Jiangsu, People's Republic of China

17:15 **Epitaxial Growth of Non-Polar ZnO Films on MgO Substrate by Pulsed Laser Deposition** **T PI.31**

J. Perrière1-2, N. Jedrecy1-2, E. Millon3, C. Cachoncinlle3, V. Demange4, M. Guilloux-Viry4, M. Nistor5
1Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris, France, 2CNRS, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris,France, 3Univ Orleans, UMR CNRS 7344, GREMI, 14 Rue Issoudun, F-45067 Orleans 2, France, 4Institut des Sciences Chimiques de Rennes, UMR 6223 CNRS-Univ. Rennes, 265 Avenue du General Leclerc, 35042 Rennes cedex, France, 5National Institute for Lasers, Plasma and Radiation Physics, L22 POB MG-36, 77125 Bucharest, Romania

17:15 **Zn-doped FeO films : Epitaxial Growth and Properties** **T PI.32**

N. Jedrecy1-2, C. Hebert1-2, J. Perrière1,2, E. Millon3, M. Nistor4, X. Portier5
1Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris, France, 2CNRS, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris, France, 3Univ Orleans, UMR CNRS 7344, GREMI, 14 Rue Issoudun, F-45067 Orleans 2, France, 4National Institute for Lasers, Plasma and Radiation Physics, L22 POB MG-36, 77125 Bucharest, Romania, 5CIMAP, UMR CNRS 6252, 6 boulevard du Marechal Juin, 14050 Caen Cedex , France.

17:15 **Fluorination as a way to improve characteristics of the ZrO2:Eu3+ luminescence** **T PI.33**

V. Chornii(1), S.G. Nedilko(1), K. Bychkov(1), M. Miroshnichenko(1), K. Terebilenko(1), M. Slobodyanik(1), V. Boyko(2)
(1) Taras Shevchenko National University of Kyiv, 64/13 Volodymyrska st., 01601 Kyiv, Ukraine, (2) National University of Life and Environmental Sciences of Ukraine, 5 Geroiv Oborony st., 03041, Kyiv, Ukraine

17:15 **Characterization of thin tungsten oxide layers with different thicknesses using spectroscopic ellipsometry and other techniques** **T PI.34**

M.I.RUSU a *, Y. Addab b, C. Martin b, C. Pardanaud b, D. Savastru a, C.E.A. Grigorescu a.
a National Institute of R&D for Optoelectronics INOE 2000, 409 Atomistilor, Magurele, PO Box MG-5, 77125, Ilfov, Romania., b Aix-Marseille Université, CNRS, PIIM UMR 7345, 13397, Marseille, France.

17:15 **Growth and Properties of Wurtzite (Fe:ZnO) and Spinel (Zn:Fe3O4) nanocomposite thin films** **T PI.35**

C. Hebert1-2, N. Jedrecy1-2, J. Perrière1-2, E. Millon3, TTD Huynh3, A. Melhem3, N. Semmar3, M. Nistor4, X. Portier5,
1Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris, France , 2CNRS, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris, France , 3Univ Orleans, UMR CNRS 7344, GREMI, 14 Rue Issoudun, F-45067 Orleans 2, France , 4National Institute for Lasers, Plasma and Radiation Physics, L22 POB MG-36, 77125 Bucharest, Romania , 5CIMAP, UMR CNRS 6252, 6 boulevard du Marechal Juin, 14050 Caen Cedex , France.

17:15 **Organic Chromophore Modified Layered Double Hydroxides and its functional mixed oxides thin films obtained by PLD** **T PI.36**

I. Tirca1,2, A. Vlad1#, M. Secu3, R. Birjega1, A. Matei1, R. Zavoianu4, A. Marinescu1, M. Dinescu1
1 National Institute for Lasers, Plasma and Radiation Physics,Atomistilor 409, Bucharest, Romania, 2University of Craiova, Faculty of Sciences, RO-200585, Craiova, Romania 3National Institute for Materials Physics, P.O. Box MG-7, 77125 Bucharest-Magurele, Romania 4 University of Bucharest, Faculty of Chemistry, Department of Chemical Technology and Catalysis, 4-12 Regina Elisabeta Bd., Bucharest, 030018, Romania, # Corresponding author: angela.vlad@gmail.com, Tel.: 40 21 457 44 14, fax: 40 21 457 42 43

17:15 **The hydrogen plasma doping of nanocrystalline ZnO thin films** **T PI.37**

Y.Y. Chang, Z. Remes, J. Stuchlik
Institute of Physics CAS, Praha, Czech Republic

17:15 **Sputtered AZO films for ZnO nanorod-based piezoelectric nanogenerator** **T PI.38**

Petr Novák [1], Joe Briscoe [2], Tomáš Kozák [3], Štěpánka Bachratá [1]
[1] New Technologies – Research Centre, University of West Bohemia, Czech Republic, [2] Materials Research Institute, Queen Mary University of London, UK, [3] Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Czech Republic

17:15 **One dimensional oxide nanostructures with visible light emission at room temperature** **T PI.39**

A.S. Delbari, S.H. Mousavi
Department of Chemistry, College of Science, Islamshahr Branch, Islamic Azad University, Tehran, Iran

17:15 **The design of transparent conducting zinc antimonate** **T PI.40**

Adam J. Jackson, Raman Kalra, Ben Williamson, David O. Scanlon
All authors: Dept. of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ, United Kingdom, David Scanlon (additionally): Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot OX11 0DE, United Kingdom

17:15 **Preparation and photoinduced hydrophilicity of Ti0.8Zn0.2O2 nanosheet film** **T PI.41**

Kenjiro FUJIMOTO, Yoshiharu HADA, , Akihisa AIMI, Yuki YAMAGUCHI
Faculty of Science and Technology, Tokyo University of Science, Japan

17:15 **The effect of rapid annealing on the optical properties of indium tin oxide thin films** **T PI.42**

P. Prepelita a, M. Filipescu a, I. Stavarache b, F. Garoi a, C. Negrila b, V. Craciun a
a - National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-36, Magurele 077125, Ilfov, Romania. b - National Institute of Materials Physics, 105 bis Atomistilor Street, PO Box MG-7, Magurele 077125, Ilfov, Romania.

17:15 **Correlation between photoluminescent and photoelectrical properties of Mn-doped ZnO** **T PI.43**

N.O. Korunska, I.V. Markevich, T.R. Stara, L.V. Borkovska, S.R. Lavoryk
V. Lashkaryov Institute of Semiconductor Physics, 45 Pr. Nauky, Kyiv 03028, Ukraine

17:15 **Optimizing the electrochemical performance of nanostructured ITO electrodes** **T PI.44**

Raquel Pruna (a), Francisco Palacio (a), Mònica Martínez (b), Oriol Blázquez (a), Sergi Hernández (a), Blas Garrido (a), Manel López (a)
(a) Departament d'Enginyeries: Electrònica, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain, (b) Departament d'Enginyeria de Materials i Química Física, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain

17:15 **Insulator–metal transition of VO2 ultrathin films studied by infrared spectroscopy** **T PI.45**

W. W. Peng1, G. Niu2, R. Tetot3, B. Vilquin4, F. Raimondi1, J. B. Brubach1, E. Amzallag3, T. Yanagida5, S. Autier-Laurent6, P. Lecoeur6 and P. Roy1
1 Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, F-91192 Gif-sur-Yvette, France 2 Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an 710049, China 3 CNRS-Université Paris-Sud, ICMMO (LEMHE) UMR 8182, Bat 410, F-91405 Orsay Cedex, France 4 Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon (INL), CNRS-UMR 5270, 36 Avenue Guy de Collongue, F-69134 Ecully, France 5 ISIR-SANKEN, Osaka University, 8-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan 6 Institut d'Electronique Fondamentale (IEF), Universite Paris-Sud, F-91405 Orsay Cedex, France

17:15 **Nanorice/nanospherical fluorine doped Tin Oxide using hydrothermal method for Dye-sensitized solar cell application** **T PI.46**

M.K. Ahmad, M.L.M. Napi, N. Nafarizal, C.F. Soon, A.B. Suriani, A. Mohamed, M.H. Mamat, M.F. Malek, K. Murakami, M. Shimomura
Microelectronic and Nanotechnology – Shamsuddin Research Centre (MiNT-SRC) Faculty of Electrical and Electronic Engineering, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Johor, Malaysia Nanotechnology Research Centre, Department of Physic, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, 35900 Tanjung Malim, Perak, Malaysia Nano-ElecTronic Centre, Faculty of Electrical Engineering, UiTM, 40450 Shah Alam, Selangor, Malaysia Department of Engineering, Graduate School of Integrated Science and Technology, Shizuoka University, Japan

17:15 **The effect of annealing conditions on the photoluminescence and Raman spectra of screen-printed ZnMgO films** **T PI.47**

L. Borkovska, L. Khomenkova, T. Stara, I. Markevich, M. Osipyonok, K. Avramenko, V. Strelchuk
V. Lashkaryov Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, 45 Nauky pr., 03028 Kyiv, Ukraine

17:15 **Electrical and optical properties of indium oxide thin films grown by pulsed electron beam deposition** **T PI.48**

M.Nistor 1, F.Gherendi 1, J.Perrière 2,3
1 National Institute for Lasers, Plasma and Radiation Physics (NILPRP), L22 P.O. Box. MG-36, 77125 Bucharest-Magurele, Romania, 2 Sorbonne Universités, UPMC Univ Paris 06, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris, France, 3 CNRS, UMR 7588, INSP, 4 Place Jussieu, F-75005 Paris, France

17:15 **Growth and properties of rare earth doped TiO2 thin films** **T PI.49**

F.Gherendi 1, E. Millon 2, C. Cachoncinlle 2, M.Nistor 1
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

17:15 **Radiation effects in amorphous transparent oxide films** **T PI.50**
O. Fufa1, D. Craciun1, A.C. Galca2, H.C. Swart3, L.J.B. Erasmus3, R.E. Kroon3, V. Craciun1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania, 2National Institute for Materials Physics, Magurele, Romania, 3Department of Physics, University of the Free State, Bloemfontein, South Africa

17:15 **Optical properties of amorphous IGZO grown by pulsed laser deposition** **T PI.51**
D. Craciun1, O. Fufa1, A.C. Galca2, L. M. Trinca2, D. Pantelica3, P. Ionescu3, and V. Craciun1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania, 2National Institute of Materials Physics, Magurele, Romania, 3Horia Hulubei National Institute of Physics and Nuclear Engineering, IFIN-HH, Magurele, Romania

17:15 **Preparation of Li-doped nickel oxide thin films and their physical properties** **T PI.52**
Soufiane Benhamida(a,b,c), Boubaker Benhaoua(b), Rachid Ghariani(c)
(a)Faculty of Exact Sciences and Sciences of Nature and Life, Univ. Biskra, Biskra, 07000, Algeria,(b)aLab. VTRS, Faculty of Exact Sciences, Univ. El-Oued, El oued 39000, Algeria, (c)Laboratoire RPPS, Faculté des Sciences et de Technologie et sciences de la Matière, Universit Kasdi Merbah Ouargla 30000 (Algérie)

17:15 **Effects of the TiO2 nanoparticles on the electro-optical response of the acrylic matrix composite material PDLC** **T PI.53**
Fayssal Djelti (a), Salima Bouadjela (b), Amaria ould abbas (a) , Fatima Zohra Abdoune (b), Nesr-Eddine Chabane Sari (a)
(a) Université Abou Bakr Belkaïd, /Unité de Recherche Matériaux et Energies Renouvelables (URMER), B.P. 119, Tlemcen, Algeria, (b) Laboratoire de Recherche sur les Macromolécules, Département de Physique, Faculté des Sciences, Université Abou bakrBelkaïd, Tlemcen, Algeria.

17:15 **Characterization of graphene decorated with TiO2 grown by atomic layer deposition** **T PI.54**
Francesca Marchetti (1)(2), Nadhira Bensaada Laidani (2), Marina Scarpa (1), Enrico Moser (1), Gloria Gottardi (2), Ruben Bartali (2)
(1) Physics Department University of Trento, Via Sommarive 14, 38123 Povo, Trento, Italy, (2) Fondazione Bruno Kessler, Via Sommarive 18, 38123 Povo, Trento, Italy

17:15 **ZnO nanodisks by electrodeposition** **T PI.55**
I. Gromyko, T. Dedova, S. Polivtseva, J. Kois, V. Mikli
Department of Materials and Environmental Technology Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

17:15 **Role of the post-annealing conditions on the conductivity of TiO2:Nb electrodes prepared by sol-gel and their function in OSC** **T PI.56**
Peter Fischer*, Liz Montañez*, Shahidul Alam**, Roland Rösch**, Ulrich S. Schubert**, Harald Hoppe**, Edda Rädlein*
* Institute of Materials Engineering, TU Ilmenau, Gustav-Kirchhoff-Str. 6, 98693 Ilmenau, Germany, ** Center for Energy and Environmental Chemistry Jena (CEEC Jena), Friedrich Schiller University Jena, Philosophenweg 7a, 07743 Jena and Laboratory of Organic and Macromolecular Chemistry (IOMC), Friedrich Schiller University Jena, Humboldtstrasse 10, 07743 Jena,

17:15 **IGZO thin film transistors fabricated with shadow masks at room temperature** **T PI.57**
F.Gherendi1, V.Craciun1, O.Fufa1, D. Craciun1, A. C. Galca2
1National Institute for Lasers, Plasma and Radiation Physics (NILPRP), Str. Atomistilor 409, P.O. Box MG-36, Magurele-Bucharest, Romania 2National Institute of MaterialsPhysics (NIMP), Str. Atomistilor 405a, P.O. Box MG-7, Magurele-Bucharest, Romania

Joint session with Symposium X:
Oxide thin films and nanostructures grown by pulsed laser deposition : J. Shou and V. Cracium

09:00 **Pulsed Laser Deposition of Amorphous Ultrasmall Nanoparticles as Metastable &#8220,Building Blocks&#8221, for Crystalline Films and Nanostructures** **T 9.1**
David B. Geohegan, Masoud Mahjouri-Samani, Mengkun Tian*, Mina Yoon , Gyula Eres, Alex A. Puretzky, Kai Wang, Christopher M. Rouleau, Kai Xiao, Miaofang Chi, Gerd Duscher*
1) Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA 2) *Dept. of Materials Science and Engineering, University of Tennessee, Knoxville, TN, USA

09:30 **Textured nanocrystalline EuO thin films grown at RT by reduction from a Eu< sub>2< /sub>O< sub>3< /sub> target** **T 9.2**
A. Mariscal(1), A. Quesada(2), A. Tarazaga Martín-Luengo(3), A. Bonanni(3), J. F. Fernández(2), R. Serna(1).
(1) Laser Processing Group, Instituto de Óptica, CSIC, C/Serrano 121, 28006 Madrid, Spain, < br> (2) Ceramics for Smart Systems Group, Instituto de Cerámica y Vidrio, C/ Kelsen 5, 28049 Madrid, Spain, < br> (3) Nitride Compound Semiconductors Research group, JKU Institute of Semiconductor and Solid State Physics, Altenbergerstr. 69, 4040 Linz, Austria.

09:45 **Epitaxial growth of rare earth doped cobalt ferrite thin films by pulsed laser deposition** **T 9.3**
Elodie Martin, Francois Roulland, Geneviève Pourroy, Nathalie Viart, Christophe Lefèvre
Institut de Physique et Chimie des matériaux de Strasbourg

10:00 **Coffee break**

10:30 **KNN perovskite thin films grown by PLD for tunable microwave devices: influence of the deposition parameters** **T 9.4**
B. Aspe1,2, F. Cissé1,2, X. Castel2, V. Demange1, S. Députier1, V. Bouquet1, S. Ollivier1, R. Sauleau2 , M. Guilloux-Viry1
1 ISCR, UMR-6226/Université de Rennes 1, Campus de Beaulieu, 35042 RENNES, FRANCE, 2 IETR, UMR-6164/IUT de Saint-Brieuc/Université de Rennes 1, 18 rue Henri Wallon, 22004 SAINT-BRIEUC & Campus de Beaulieu, 35042 RENNES, FRANCE

10:45 **Critical current and pinning potential in nanostructured YBa2Cu3O7 superconducting films grown by PLD** **T 9.5**
A.Crisan, I.Ivan, L. Miu
National Institute for Materials Physics Bucharest, 405A Atomistilor Str., 077125 Magurele, Romania

11:00 **Temperature dependence on the magnetic, morphological and structural properties of Fe3O4(111)/STO(111) thin films grown by PLD** **T 9.6**
J. López-Sánchez,1,2 J. Rubio-Zuazo,3,4 I. Arnay,3,4 A. Muñoz-Noval,5 A. Serrano,3,4 N. Carmona,1,2, O. Rodríguez de la Fuente1,2 and G. R. Castro3,4
1 Departamento de Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain. 2 Unidad Asociada IQFR (CSIC)-UCM, 28040 Madrid, Spain. 3 Spanish CRG, Spline, The European Synchrotron (ESRF), 38000 Grenoble, France. 4 Instituto de Ciencia de Materiales, Consejo Superior de Investigaciones Científicas (ICMM-CSIC), Madrid, Spain. 5 Department of Applied Chemistry, Hiroshima University, Hiroshima, 739-8527, Japan.

11:15 **Recent advances in large area Pulsed Laser Deposition, epitaxial growth of complex oxides on silicon** **T 9.7**
R.Groenen, C.A.J. Damen, G. Koster, G. Rijnders
Twente Solid State Technology, MESA+ Institute for Nanotechnology, University of Twente, The Netherlands, P.O. Box 256, 7500 AG Enschede, The Netherlands

11:30 **Deposition of epitaxial PMN-PT on silicon wafers for Piezoelectronic Transduction Memory Devices** **T 9.8**
M. Dekkers*1, M. Nguyen1, N. Hildenbrand1, S. Abel2, F. Eltes2, J. Fompeyrine2, P. Wittendorp3
1 Solmates BV, Drienerlolaan 5 (building 46), 7522 NB, Enschede, The Netherlands
2 IBM Research GmbH, Zurich Research Laboratory, Säumerstrasse 4, CH-8803 Rüschlikon, Switzerland 3 SINTEF Digital, MiNaLab, Oslo, Norway

12:00 **Lunch**

2D oxides and 2D electron gas : D.B. Geohegan

14:00 **Lattice Engineering with Molecularly Thin 2D Oxide Nanosheets** **T 10.1**
Takayoshi Sasaki
International Center for Materials Nanoarchitectonics, National Institute for Materials Science, 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan.

14:30 **Engineering One-Dimensional Quantum Stripes from Layered Complex-Oxides** **T 10.2**
Ambrose Seo
Department of Physics and Astronomy, University of Kentucky

14:45 **Growth and deposition of 2D metal oxides using room temperature liquid metals** **T 10.3**
Torben Daeneke Ali Zavabeti Kourosh Kalantar-Zadeh
RMIT University School of Engineering 124 LaTrobe Street 3001 Melbourne Australia

15:00 **Low thermal conductivity of monolayer ZnO and the anomalous temperature dependence** **T 10.4**
Huimin Wang, Guangzhao Qin, Guojian Li, Qiang Wang, Ming Hu
Huimin Wang, Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, 110819 Shenyang, China and Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany, Guangzhao Qin, Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany, Guojian Li, Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, 110819 Shenyang, China, Qiang Wang, Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, 110819 Shenyang, China, Ming Hu, Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany and Aachen Institute of Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

15:15 **Room temperature spin transport in LaAlO/SrTiO 2DEGs** **T 10.5**
M. Shiraishi(1), R. Ohshima (1), Y. Ando(1), T. Susaki(2), K. Matsuzaki(2), M. Weiler(3), S. Klingler(3), H. Huebl(3) and S. Goennenwein(3)
(1) Kyoto Univ., Japan. (2) Tokyo Institute of Technology, Japan. (3) Walther Meissner Institut, Germany.

15:30 **Spin-dependent breathing in flexible hybrid materials.** **T 10.6**
Danny E.P. Vanpoucke
UHasselt, Institute for Materials Research (IMO-IMOMEC), Agoralaan, 3590 Diepenbeek, Belgium, IMOMEC, IMEC vzw, 3590 Diepenbeek, Belgium

15:45 **Coffee break**

16:15 **Plenary Session**

Electronic and magnetic properties : M. Nistor

09:00 **Resonant x-ray scattering of oxide multilayers** **T 11.1**
Eva Benckiser
Max Planck Institute for Solid State Research, Heisenbergstraße 1, 70569 Stuttgart, Germany

09:30 **The pO2-dependent formation of a space charge layer in donor doped SrTiO3 probed by in-situ spectroscopy** **T 11.2**
Michael Andrä1, Slavomir Nemšák1, Filip Dvořák2, Mykhailo Vorokhta2, Vladimír Matolín2, Claus M. Schneider1, Regina Dittmann1, Felix Gunkel1 and 3, David N. Müller1, Rainer Waser1 and 3
1 Peter Grünberg Institut, Forschungszentrum Jülich GmbH, Jülich, 52425, Germany, 2 Department of Surface and Plasma Science, MFF UK, Charles University in Prague, Prague 18000, Czech Republic, 3 Institute of Electronic Materials (IWE2), RWTH Aachen University, Aachen, 52074, Germany

09:45 **Negative TMR induced by an oxygen vacancy gradient in MgO tunnel barriers** **T 11.3**
Elmer Nahuel Monteblanco, Filip Schleicher, Beata Taudul, François Montaigne, Ufuk Halisdemir, Eric Beaurepaire, Samy Boukari, Mébarek Alouani, Daniel Lacour, Michel Hehn, Martin Bowen
Institut Jean Lamour UMR 7198 CNRS, Université de Lorraine, BP 70239, 54506 Vandoeuvre les Nancy Cedex, France Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67000 Strasbourg, France

10:00 **Coffee break**

Interfaces and tunnel junctions : E.Benckiser

10:30 **Tuning up or down the critical thickness in LaAlO3/SrTiO3 through in situ deposition of metal overlayers** **T 12.1**
D.C. Vaz1, E. Lesne1-2, H. Naganuma1-3, E. Jacquet1, J. Santamaria1-4, A. Barthélémy1, M. Bibes1
1. Unité Mixte de Physique CNRS/Thales, 1 avenue A. Fresnel, 91767 Palaiseau, France and Université Paris-Sud, 91405 Orsay, France 2. Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany 3. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Aoba Aramaki Aoba-ku, Sendai, Miyagi, 980-8579 Japan 4. GFMC, Facultad de Ciencias Fisicas, Universidad Complutense de Madrid, 28040 Madrid

11:00 **Disentangling tunneling and non-tunneling contributions on electroresistance in BTO-based ferroelectric nanometric junctions** **T 12.2**
M. Qian, I. Fina, F. Sánchez, J. Fontcuberta
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193, Bellaterra, Catalunya.

11:15 **Optically-Induced Polarization Switching in MoS2/BaTiO3 heterostructures** **T 12.3**
T. Li1, A. Lipatov2, H.-W. Lee3, J.-W. Lee3, C.-B. Eom3, A. Sinitskii2, and A. Gruverman1
1Department of Physics and Astronomy, University of Nebraska-Lincoln Lincoln, Nebraska 68588, USA 2Department of Chemistry, University of Nebraska-Lincoln Lincoln, NE 68588, USA 3Materials Science and Engineering, University of Wisconsin-Madison Madison, WI 53706, USA

11:30 **Revisiting the field effect in a SrRuO3 electrode with BaTiO3 or PbTiO3 as ferroelectric gate** **T 12.4**
Amina Aidoud, Thomas Maroutian, Florence Linez, Sylvia Matzen, Guillaume Agnus, Kouider Driss Khodja, Pascal Aubert, Philippe Lecoeur
Université de Paris Sud

11:45 **PZT thin films on Si for pyroelectric applications** **T 12.5**
C. Chirila1, G.Le Rhun2 M.Botea1, L. Hrib1, A. Boni1, A.Iuga1, I Pintilie1, L. Pintilie1
1National Institute of Materials Physics, Atomistilor 405 A, Magurele, Ilfov, 77125, Romania 2 CEA, LETI, MINATEC Campus, 17 rue des Martyrs, 38054 Grenoble Cedex 9, FRANCE

12:00 **Lunch**

Ferroelectrics, multiferroics I : N.Jedrecy

14:00 **Multiferroics thin films - structure-properties relations under strain** **T 13.1**
Pierre-Eymeric Janolin
Advanced Ferroics Group, SPMS lab, CNRS-CentraleSupelec

14:30 **Room-temperature ferroelectricity in strained SrTiO3 ultrathin films: Infrared and ab initio study** **T 13.2**
Wei-wei Peng1, Robert Tétot2, Gang Niu3, , Emilie Amzallag2, Bertrand Vilquin4, Jean-Blaise Brubach1 and Pascale Roy1
1 Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, F-91192 Gif-sur-Yvette, France 2 CNRS-Université Paris-Sud, ICMMO(SP2M) UMR 8182, Bât 410, F-91405 Orsay Cedex, France 3 Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an 710049, China 4 Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon (INL), Université de Lyon, CNRS-UMR 5270, 36 Avenue Guy de Collongue, F-69134 Ecully, France

14:45 **Electric Polarity-Dependent Modification of the Fe/BaTiO3 Interface** **T 13.3**
Manisha Bisht, Sebastien Couet, Vera Lazenka, Hiwa Modarresi, Rudolf Rüffer, Jean-Pierre Locquet, Margriet J. Van Bael, André Vantomme, Kristiaan Temst
Instituut voor Kern-en Stralingsfysica, KU Leuven, Belgium, European Synchrotron Radiation Facility (ESRF), Grenoble, France, Laboratorium voor Vaste-Stoffysica en Magnetisme, KU Leuven, Belgium

15:00 **Magnetic and magnetoelectric properties of thin composite system grown by PLD** **T 13.4**
Jong-Woo Kim,Jungho Ryu, Cheol-Woo Ahn, Jong-Jin Choi, Byung-Dong Hahn
Functional Ceramics Department, Korea Institute of Materials Science, Changwon, Korea

15:15 **Electrically driven magnetic memory effect in Antiferromagnetic-Ferromagnetic mixed phase system** **T 13.5**
I. Fina 1*, A. Quintana 2, F. Sánchez 1, J. Sort 2,3, X. Marti 4, J. Fontcuberta 1
1 Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Campus UAB, Bellaterra E-08193, Spain, 2 Departament de Física, Universitat Autònoma de Barcelona, E-08193 Bellaterra, Spain, 3 Institució Catalana de Recerca i Estudis Avançats (ICREA), E-08010 Barcelona, Spain, 4 Institute of Physics ASCR, v.v.i., Cukrovarnicka 10, 162 53 Praha 6, Czech Republic.

15:30 **Coffee break**

Ferroelectrics, multiferroics II : P.E.Janolin

16:00 **Study of the conduction mechanism through a Pb(Zr,Ti)O3 thin film** **T 14.1**
Qiang LIU1, Simon MARTIN2, Nicolas BABOUX2, Brice GAUTIER2, Bertrand VILQUIN1, Yves ROBACH1
(1)Universite de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 ECULLY Cedex, FRANCE
(2) Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 VILLEURBANNE Cedex, FRANCE

16:15 **Chemistry-mediated magneto-electric coupling in artificial multiferroics** **T 14.2**
M. Rioult (a), D. Stanescu (b),T. Aghavnian (a,b), S. Stanescu (a), R. Belkhou (a), F. Maccherozzi (c), H. Magnan (b), J.-B. Moussy (b) and A. Barbier (b)
(a) Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin - BP 48, F-91192 Gif-sur-Yvette cedex, France, (b) Service de Physique de l'Etat Condensé, CEA, CNRS, Université Paris Saclay, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France, (c) Diamond Light Source, Harwell Campus, Didcot, OX11 0DE Oxforshire, United Kingdom

16:30 **Amorphous-to-Microcrystalline Transition of Lead-Free NKN Films Monitored by Change in Optoelectronic Properties** **T 14.3**
R. Schwarz_1, M. Leal_1,*, R. Ayouchi_1,+, P. Sanguino_1, U. Mardolcar_1, L. Santos_2, N. Franco_3, E. Alves_3
1 Department of Physics and CeFEMA, Instituto Superior Técnico, P-1049-001 Lisbon, Portugal 2 Department of Chemical Engineering and CQE, Instituto Superior Técnico, P-1049-001 Lisbon, Portugal 3 ITN, Instituto Tecnológico e Nuclear, P-2686-953 Sacavém, Portugal

16:45 **Effects of strain and substrate orientation on the structural and vibrational properties of (BiFeO3)/(LaFeO3) superlattices** **T 14.4**
J.Belhadi (1),B. Carcan (1),H. Bouyanfif (1), M. El Marssi (1), F. Le Marrec (1),I. A. Luk'yanchuk (1), J. Wolfman (2), C. Autret (2), D. Arnold (3)
(1): LPMC EA2081, Université de Picardie Jules Verne 33 Rue Saint Leu, 80000 Amiens, France. (2): GREMAN UMR7347, Université de Tours François Rabelais, 20 Avenue Monge, 37200 Tours, France. (3) School of Physical Sciences, University of Kent, Canterbury, Kent, CT2 7NZ, UK.

17:00 **Fabrication and characterization of nanoimprinted organic-inorganic multiferroic nanocomposites** **T 14.5**
Pedro Sá, Bernard Nysten, Luc Piraux and Alain M. Jonas
Institute of Condensed Matter and Nanoscience, Bio & Soft Matter Division, Université catholique de Louvain, Louvain-La-Neuve, 1348 Belgium

Poster Session II : N.Jedrecy

17:15 **The growth and electrical transport properties of the functional oxide thin film on GaAs semiconductor** **T PII.1**
Huang Wen
State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronics Science and Technology of China, Chengdu 610054□P. R. China

17:15 **Diode performance of the Pt/Al2O3/SrTiO3 Structure with two-dimensional electron gas and its time-dependent resistance evolution** **T PII.2**
Taehwan Moon, Hae Jun Jung, Yu Jin Kim, Min Hyuk Park, Han Joon Kim, Keum Do Kim, Young Hwan Lee, Seung Dam Hyun, Hyeon Woo Park, Sang Woon Lee, Choel Seong Hwang
Seoul National University, Ajou University

17:15 **Facile fabrication of perovskite oxide thin films and nanostructures via an electrodeposition-based route for SOFC applications** **T PII.3**
Jong-Won Lee, Beom-Kyeong Park, Seung-Bok Lee, Tak-Hyoung Lim, Seok-Joo Park, Jong-Eun Hong, Rak-Hyun Song
New and Renewable Energy Research Division, Korea Institute of Energy Research, 152 Gajeong-ro, Yuseong-gu, Daejeon 34129, Republic of Korea

17:15 **Development of a ZT-measurement system for thin films plus additional Hall constant determination in a temperature range from LN** **T PII.4**
Linseis Vincent, Marx Hans-W., Völklein Friedemann, Nielsch Kornelius
Universität Hamburg IFN, Jungiusstraße 11 B 20355 Hamburg, Germany, Linseis Messgeräte GmbH Vielitzer Str. 43 95100 Selb, Germany, Hochschule RheinMain Am Brückweg 26 65428 Rüsselsheim, Germany,

17:15 **Investigation of the Structure and Electrical Conductivity of Chrome Oxide Thin Films** **T PII.5**
Sergey Karabanov
Ryazan State Radio Engineering University

17:15 **Electrochemical Synthesis of Nanoscale Tungsten Oxide** **T PII.6**
Sergey Karabanov, Dmitry Suvorov, Yulia Stryuchkova, Gennady Gololobov Dmitry Tarabrin, Vladislav Loginov, Engeny Slivkin
Ryazan State Radio Engineering University

17:15 **Effects of interface number on the temperature and frequency dependence of Pb(Zr0.52Ti0.48)O3/Ba(Mg1/3Ta2/3)O3 thin films** **T PII.7**
Zhi Wu, Jing Zhou*, Wen Chen, Jie Shen
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, P. R. China

17:15 **Atomic Layer-Deposited (HfZrO4)1-x(SiO2)x Thin Films for Gate Stack Applications** **T PII.8**
Pyungho Choi, Byoungdeog Choi
College of Information and Communication Engineering, Sungkyunkwan University

17:15 **Effect of annealing atmosphere on photovoltaic effect of BiFeO3** **T PII.9**
P.P Biswas, P. Murugavel
P.P Biswas, P. Murugavel - Department of physics Indian Institute of Technology Madras

17:15 **Potentialities offered by the Resonant X-ray Scattering to the crystallographic study of oxide thin films** **T PII.10**
Christophe Lefevre, Elodie Martin, Stephane Grenier, François Roulland, Nils Blanc, Nathalie Boudet, Vincent Favre-Nicolin, Genevieve Pourroy, Nathalie Viart
Christophe Lefevre : Institut de Physique et Chimie des Matériaux de Strasbourg (UMR 7504), Strasbourg , Elodie Martin : Institut de Physique et Chimie des Matériaux de Strasbourg (UMR 7504), Strasbourg , Stephane Grenier : CNRS – Institut Néel, Grenoble, 38042, France , François Roulland : Institut de Physique et Chimie des Matériaux de Strasbourg (UMR 7504), Strasbourg , Nils Blanc : Université Grenoble Alpes – Institut Néel, Grenoble, 38042, France and CNRS – Institut Néel, Grenoble, 38042, France , Nathalie Boudet : Université Grenoble Alpes – Institut Néel, Grenoble, 38042, France and CNRS – Institut Néel, Grenoble, 38042, France , Vincent Favre-Nicolin : Université Grenoble Alpes, INAC-SP2M, F-38000 Grenoble, France and ESRF – The European Synchrotron, 38043 Grenoble Cedex 9, France, Genevieve Pourroy : Institut de Physique et Chimie des Matériaux de Strasbourg (UMR 7504), Strasbourg , Nathalie Viart : Institut de Physique et Chimie des Matériaux de Strasbourg (UMR 7504), Strasbourg ,

17:15 **Nanostructured transition metal oxides as thin films** **T PII.11**
Solène Béchu, Pierre-Yves Jouan, Antoine Goullet, Mireille Richard-Plouet
Institut des Matériaux Jean Rouxel (IMN) Université de Nantes CNRS

17:15 **Comparison between Sputtering and Atomic Layer Deposition of ferroelectric doped and undoped HfO2** **T PII.12**
Jordan Bouaziz, Bertrand Vilquin, Pedro Rojo Romeo, Nicolas Baboux, Bruno Masenelli
Institut des Nanotechnologies de Lyon, CNRS, Ecole Centrale de Lyon, Université de Lyon, 36 av. Guy de Collongue, 69134 Ecully, France

17:15 **Probing a device's active atoms** **T PII.13**
Michał Studniarek, Ufuk Halisdemir, Filip Schleicher, Beata Taudul, Etienne Urbain, Marie Hervé, Charles-Henri Lambert, Abbass Hamadeh, Sebastien Petit-Watelot, Olivia Zill, Daniel Lacour, Samy Boukari, Loïc Joly, Fabrice Scheurer, Guy Schmerber, Victor Da Costa, Anant Dixit, Pierre André Guitard, Manuel Acosta, Florian Leduc, Fadi Choueikani, Edwige Otero, Wulf Wulfhekel, François Montaigne, Elmer Nahuel Monteblanco, Jacek Arabski, Philippe Ohresser, Eric Beaurepaire, Wolfgang Weber, Mébarek Alouani, Michel Hehn, Martin Bowen
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67000 Strasbourg, France Physikalisches Institut, Karlsruhe Institute of Technology, Wolfgang-Gaede-Str. 1, 76131 Karlsruhe, Germany Institut Jean Lamour UMR 7198 CNRS, Université de Lorraine, BP 70239, 54506 Vandoeuvre les Nancy Cedex, France Service de Physique de l'Etat Condensé, CEA-IRAMIS-SPEC (CNRS-MPPU-URA 2464) CEA-Saclay, F-91191 Gif-sur-Yvette Cedex, France Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette, France

17:15 **Magnetic and optical properties of Zn1-xCoxO polycrystalline thin films prepared by printed electronics method** **T PII.14**
V.V.Strelchuk1, S.V.Rarata1,2, P.M. Lytvyn1, O.F. Kolomys1, A.S. Nikolenko1, A.S.Romanyuk1, N.F. Serpak1, I.M. Kupchak1, G.S. Pekar1, O.F. Syngaivsky1
1. V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 41 prospect Nauky, 03028 Kyiv, Ukraine. 2. Taras Shevchenko National University of Kyiv, 64 Volodymyrs'ka str., 01601 Kyiv, Ukraine

17:15 **Amorphous Y-Ba-Cu-O semiconducting films elaborated on silicon-based substrates in view of pyroelectric sensor development** **T PII.15**
Xavier Galiano, Annick F. Dégardin, David Alamarguy, Alexandre Jaffré, Alain J. Kreisler
GeePs UPMC, France, UPMC Univ Paris 06, France, GeePs CNRS, France, GeePs CNRS, France, GeePs CentraleSupelec, France

17:15 **Optical and structural properties of individual Co-doped ZnO microwires** **T PII.16**
V.V. Strelchuk 1, O.F. Kolomys 1, S.V. Rarata 1,2, R. Hayn 3, F. Giovannelli 4, F. Delorme 4 and A. Savoyant 3
1. V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 41 prospect Nauky, 03028 Kyiv, Ukraine. 2. Taras Shevchenko National University of Kyiv, 64 Volodymyrs'ka str., 01601 Kyiv, Ukraine 3. IM2NP, CNRS UMR 7334, FST, Aix-Marseille Université, F-13397 Marseille Cedex 20, France 4. Université François Rabelais de Tours, CNRS, CEA, INSA CVL, GREMAN UMR 7347, IUT de Blois, 15 rue de la chocolaterie, CS 2903, F-41029 Blois Cedex, France

17:15 **Combined LEED and XPS characterization of ferroelectric surfaces: ferroelectric dead layers** **T PII.17**
Liviu C. Tănase(1,2), Nicoleta G. Apostol(1), Luminița Hrib(1), Lucian Pintilie(1), Cristian M. Teodorescu(1)
(1) National Institute of Materials Physics, Atomiştilor 405A, 077125 Măgurele – Ilfov, Romania (2) University of Bucharest, Faculty of Physics, Atomiştilor 405, 077125 Măgurele-Ilfov, Romania.

17:15 **Perovskite type oxides for photoelectrocatalytic and thermoelectric energy converters** **T PII.18**
A. Weidenkaff, W. Xie, T.Zou, X. Xiao, M. Widenmeyer, S. Yoon
Institute for Materials Science, University of Stuttgart, Heisenbergstr. 3, DE-70569 Stuttgart, Germany weidenkaff@imw.uni-stuttgart.de

17:15 **Terahertz dynamics of soft and central modes in ferroelectric superlattices** **T PII.19**
A. G. Razumnaya1,2, Yu. A. Tikhonov2, Yu. I. Yuzyuk2, I. A. Lukyanchuk1, N. Ortega3, A. Kumar3, R. S. Katiyar3
1. Université de Picardie Jules Verne, LPMC, Amiens, France 2. Southern Federal University, Faculty of Physics, Rostov-on-Don, Russia 3. University of Puerto Rico, Dept. of Physics and Institute for Functional Nanomaterials, San Juan, USA

17:15 **Engineering of Half-Metallic Ferromagnetism In LaAlO3/CaMnO3 Superlattices** **T PII.20**
Allen Tseng, Anh Pham, Sean Li
School of Materials Science and Engineering, The University of New South Wales, Sydney, Australia.

17:15 **Observation of surface acoustic waves in ferroelectric, monoclinic K0.7Na0.3NbO3 thin films** **T PII.21**
J. Schwarzkopf, L. von Helden, Y. Dai, D. Braun, R. Wördenweber, M. Schmidbauer
Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany, Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany, Peter Grünberg Institute, Forschungszentrum Jülich, D-52425 Jülich, Germany, Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany, Peter Grünberg Institute, Forschungszentrum Jülich, D-52425 Jülich, Germany, Leibniz Institute for Crystal Growth, Max-Born-Str.2, 12489 Berlin, Germany

17:15 **Predicting the passivation of sweet corrosion scale** **T PII.22**
Hao-Yeh Chang, Ehsan A Ahmad, Nicholas M Harrison
Department of Chemistry, Imperial College, South Kensington Campus, SW7 2AZ London, UK

17:15 **Ferroelectric poling in epitaxial BaTiO3 based heterostructures: role of substrate and overlayer as evidenced by PFM** **T PII.23**
D. Stanescu1, T. Plays1, H. Magnan1, T. Aghavnian1, J-B. Moussy1, A. Barbier1, M. Rioult2, C. Rountree1
1 Service de Physique de l'Etat Condensé, CEA, CNRS, Université Paris Saclay, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France, 2 Synchrotron SOLEIL, L'Orme des Merisiers, BP-48 Saint-Aubin, F-91192 Gif-sur-Yvette Cedex, France

17:15 **Effect of surfactants on the synthesis of CeO2 nanoparticles by co-precipitation method** **T PII.24**
Alina Matei1, Vasilica Tucureanu1,2, Bogdan Bita1,3, Cosmin Romanita1, Roxana Marinescu1, Ileana Cernica1
1National Institute for Research and Development in Microtehnologies IMT-Bucharest, 126A, Erou Iancu Nicolae Street, 077190, Bucharest, Romania 2Transilvania University of Brasov, Department of Materials Science, 29 Eroilor Blvd, Brasov 500036, Romania 3Faculty of Physics, University of Bucharest, 405 Atomistilor Street, 077125, Magurele, Romania

17:15 **Light-induced phenomena in nanometeric films based on iron and chromium oxides (Fe2O3-X(0≤x≤1) and Cr3-XO3-Y(0≤x≤2, 0≤y≤2))** **T PII.25**
1 S. A.Mulenko, 2 R.K.Savkina, A.B. Smirnov, 3 N. Stefan, 4 T.G.Kryshtab
1 G.Kurdyumov Institute for Metal Physics, National Academy of Sciences of Ukraine, 36 Vernadsky Blvd, Kyiv 03142, Ukraine, 2 V.Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 41 Nauky av, Kyiv 03028, Ukraine, 3 National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, POBox MG-36, Bucharest-Magurele 077125, Romania, 4 Instituto Politécnico Nacional - ESFM, Department of Physics, Av. IPN, Ed. 9 U.P.A.L.M., 07738, Mexico D.F.

17:15 **Electrical properties of NiFe2O4 epitaxial ultra-thin films** **T PII.26**
G. A. Boni1, C.F. Chirila1, L. Hrib1, S. B. Porter2, G. Atcheson2, I. Pintilie1, K. Rode2, and L. Pintilie1
1 National Institute of Materials Physics, Atomistilor 405A, 077125 Magurele, Romania
2School of Physics, Trinity College, College Green, Dublin 2, Ireland

17:15 **Crystallization Kinetic and Phase Formation Study of Ferro/ferrimagnetic Nano-Crystals in Bioactive Glass by Modified Incorporat** **T PII.27**
Pratthana Intawin, Kamonpan Pengpat, Wilaiwan Leenakul
Faculty of Science and Technology Rajamangala University of Technology Phra Nakhon

17:15 **Electronic properties of CaCu3Ti4O12 surfaces and grain boundaries** **T PII.28**
N. T. Taylor, E. Mariani, S. P. Hepplestone,
Physics, College of Engineering, Mathematics and Physical Sciences, University of Exeter, EX4 4QL, United Kingdom

17:15 **Production of optical filter via Nano Spinel Mn-Cu-Cr-O coating on glass** **T PII.29**
M. H. Jilavi, S. H. Mousavi, P.W. Oliveira
INM–Leibniz Institute for New Materials, Campus D2 2, 66123 Saarbrücken, Germany

17:15 **Structural, magnetic properties and theoretical investigations in manganite La0.67(PrxBa1-x)0.33MnO3 type perovskite.** **T PII.30**
Yethreb Essouda, Marwène Oumezzine , Mohamed Oumezzine.
Yethreb Essouda:Student researcher, Marwène Oumezzine:doctor, Mohamed Oumezzine:professor.

17:15 **Infrared-Absorption Studies on Barium Titanate (BaTiO3) thin film in tetragonal phase** **T PII.31**
B. Wague-1, J.-B. Brubach-2, P. Roy-2, G. Niu-3, M. Apreutesei-1 N. Baboux-4, P. Rojo Romeo-1, B. Vilquin-1, Y.Robach-1
1-Universite de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully Cedex, France
2-Synchrotron SOLEIL, ligne AILES, L'orme des merisiers, 91190 Saint Aubin, France
3-Xian Jiaotong University, Electronic Materials Institute, Xian Ning west Road 28, 710049 Xian, China 4-Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 Villeurbanne Cedex, France

17:15 **Novel sol-gel synthesis to fabricate epsilon-Fe2O3 nanoparticles embedded in SiO2 thin films:Magnetic and structural properties** **T PII.32**
J. López-Sánchez,1,2 A. Serrano,3,4 A. Muñoz-Noval,5 E. Salas-Colera,3,4 M. Abuín,1,6 A. del Campo,7 M. Cabero,1,8 M. Varela,1,8 J. de la Figuera,9 J.F. Marco,9 J Rubio-Zuazo,3,4 G. R. Castro,3,4 O. Rodríguez de la Fuente,1,2 N. Carmona1,2
1 Departamento de Física de Materiales, Universidad Complutense de Madrid (UCM), 28040 Madrid, Spain. 2 Unidad Asociada IQFR (CSIC)-UCM, 28040 Madrid, Spain. 3 Spanish CRG, Spline, The European Synchrotron (ESRF), 38000 Grenoble, France. 4 Instituto de Ciencia de Materiales, Consejo Superior de Investigaciones Científicas (ICMM-CSIC), Madrid, Spain. 5 Department of Applied Chemistry, Hiroshima University, Hiroshima, 739-8527, Japan. 6 Deutsches Elektronen Synchrotron DESY, Notkestr. 85, 22607, Hamburg, Germany. 7 Instituto de Cerámica y Vidrio, Consejo Superior de Investigaciones Científicas (ICV-CSIC), 28049 Madrid 8 Instituto Pluridisciplinar, Universidad Complutense de Madrid (UCM), 28040, Madrid. Spain 9 Instituto de Química-Física “Rocasolano”, Consejo Superior de Investigaciones Científicas, (IQFR-CSIC), 28006 Madrid

17:15 **New precursor for Chemical Beam Vapour Deposition of titanium containing oxide films** **T PII.33**
Diane Bijou1,2, William Maudez1, Estelle Wagner1, Stéphane Daniele2, Giacomo Benvenuti1
1 3D-Oxides, 130 rue Gustave Eiffel, 01630 St Genis Pouilly, France, 2 Institut de Recherches sur la Catalyse et l’Environnement de Lyon, IRCELYON, CNRS – Université Lyon 1, UMR 5256, 69626 Villeurbanne cedex, France

17:15 **Structural, electronic and magnetic investigation of Nx[(BiFeO3)xuc/(SrRuO3)xuc] superlattices** **T PII.34**
J.Belhadi (1), B. Carcan (1), H. Bouyanfif (1), M. El Marssi (1), I. A. Luk’yanchuk and J. Wolfman (2)
(1): LPMC EA2081, Université de Picardie Jules Verne 33 Rue Saint Leu, 80000 Amiens, France. (2): GREMAN UMR7347, Université de Tours François Rabelais, 20 Avenue Monge, 37200 Tours, France.

17:15 **Tuning the magnetic properties of nanostructured hybrid materials through external stimuli or interfacial chemistry** **T PII.35**
Z. Chaker, G. Ori, M. Boero, C. Massobrio
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67034 Strasbourg, France

17:15 **Pyroelectric properties of lead-free (Na0.5Bi0.5)1-x(BaTiO3)x thin films obtained by pulsed laser deposition** **T PII.36**
A. Andrei1, N. D. Scarisoreanu1, V.Ion1, R. Birjega1, N.Dumitrescu1,2, M. Dinescu1
1 NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania 2 University of Craiova, Faculty of Sciences, Craiova, Romania

17:15 **Amorphous Y-Ba-Cu-O semiconducting thin films for radiation thermal detectors: migrating from IR to THz sensor optimal structure** **T PII.37**
Xavier Galiano, Vishal S. Jagtap, Manjakavahoaka Razanoelina, Annick F. Dégardin, Masayoshi Tonouchi, Alain J. Kreisler
GeePs UPMC, France, GeePs CentraleSupelec CNRS, France, Institute of Laser Engineering, Osaka University, Japan, UPMC Univ Paris 06, France, Institute of Laser Engineering, Osaka University, Japan, GeePs Univ Paris-Saclay, France

17:15 **Interrogating ferromagnetic alloy/paramagnetic insulator interfaces for electron spin transport** **T PII.38**
M.I. Rusu a*, C.R. Iordanescu a, L.O. Scoicaru a, M. Elisa a, D. Savastru a, L. Tortet b, A. Tonetto c, R. Notonier c, C.E.A. Grigorescu a
a National Institute of R&D for Optoelectronics INOE 2000, 409 Atomistilor, Magurele, PO Box MG-5, 77125, Ilfov, Romania., b Madirel (UMR 7246), Aix-Marseille Université, 13013 Marseille, France., c Aix-Marseille Université, Centrale Marseille, CNRS, Fédération Sciences Chimiques Marseille (FR 1739) - PRATIM, 13000 Marseille, France.

17:15 **Interfacial oxide dynamics during anodization of superimposed ultra-thin films** **T PII.39**
Andrei Ionut Mardare 1, Christian M. Siket 2, Cezarina Cela Mardare 1, Siegfried Bauer 2, Achim Walter Hassel 1
1 Christian Doppler Laboratory for Combinatorial Oxide Chemistry at the Institute for Chemical Technology of Inorganic Materials, Johannes Kepler University Linz, 4040 Linz, Austria, 2 Soft Matter Physics, Johannes Kepler University Linz, 4040 Linz, Austria

17:15 **Design and development of hybrid energy harvesters scavenging solar and mechanical energy based on ZnO nanorods** **T PII.40**
Xuan Li, Joe Briscoe, Steve Dunn
Materials Research Institute, Queen Mary University of London, UK

17:15 **Tuning light-induced polarization screening of ferroelectric materials by water** **T PII.41**
Fanmao Liu, Ignasi Fina, Florencio Sánchez, Josep Fontcuberta
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Spain

17:15 **Complex oxide heterostructures based on thin films for SOFCs** **T PII.42**
Nicoleta Cioatera1, George Epurescu2, Rovena Pascu2, Angela Vlad2, Petre Osiceanu3, Simona Somacescu3, Bogdana Mitu2
1 University of Craiova, Department of Chemistry, 13 A. I. Cuza Street, 200585, Craiova -Dolj, Romania 2 National Institute for Lasers, Plasma and Radiation Physics, 409 Atomsitilor Street, PO Box MG-36, 077125 Magurele, Bucharest, Romania 3 “Ilie Murgulescu”Institute of Physical Chemistry, Romanian Academy, Splaiul Independentei 202, 060021, Bucharest, Romania

17:15 **Development of PZT thin film based multifunctional Energy Harvester** **T PII.43**
Reema Gupta, Monika Tomar, Vinay Gupta
Department of Physics & Astrophysics, University of Delhi, Delhi, India, Physics Department, Miranda House, University of Delhi, Delhi, India, Department of Physics & Astrophysics, University of Delhi, Delhi, India

17:15 **Chemically synthesized CuxNi(1-x)O hierarchical nanostructures as room temperature humidity sensors** **T PII.44**
Sayan Dey, Sumita Santra, Samit K. Ray, Prasanta K. Guha
Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, Department of Physics, Indian Institute of Technology, Kharagpur, Department of Physics, Indian Institute of Technology, Kharagpur, Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur

17:15 **Study of lead-free Cu- and Li-doped K0.48Na0.52NbO3 crystal fibers as transducer in electronic devices** **T PII.45**
Marcus Vinicius de Siqueira Silva[1], Ana Maria do Espirito Santo[1], Sonia Licia Baldochi[2], José Antônio Eiras[3], Manuel Henrique Lente[1]
[1]Federal University of Sao Paulo, UNIFESP, ICT, São José dos Campos, SP, Brazil, [2]Energetic and Nuclear Research Institute, IPEN, São Paulo, SP, Brazil, [3]Federal University of Sao Carlos, UFSCAR, São Carlos, SP, Brazil

17:15 **Fabrication and characterization of Bi2Sr2CaCu2O8 thin films and nanowire networks using the sol-gel technique and electrospinni** **T PII.46**
M.R.Koblischka, X. Zeng, T. Karwoth, A. Koblischka-Veneva, T. Hauet, U. Hartmann M.R.Koblischka, X. Zeng, T. Karwoth, A. Koblischka-Veneva, U. Hartmann Saarland University, Experimental Physics, P.O.Box 151150, D-66041 Saarbruecken, Germany, T. Hauet Institut Jean Lamour, UMR CNRS-Universit’e de Lorraine, 54506 Vandoe vre-l`es-Nancy, France.

Transparent conducting oxides II : X.Portier

09:00 **XPS analysis of conducting and insulating oxides** **T 15.1**
Andreas Klein
Technische Universität Darmstadt, Jovanka-Bontschits-Straße 2, 64287 Darmstadt, Germany

09:30 **Towards nanostructured transparent conducting oxide electrodes with tunable pore architectures** **T 15.2**
Kristina Peters, Morgan Stefik, Dina Fattakhova-Rohlfing
Kristina Peters, Dina Fattakhova-Rohlfing: Ludwig-Maximilians-Universität (LMU), Department of Chemistry and Center for NanoScience (CeNS), Butenandtstr. 5-13, 81377 Munich, Germany Morgan Stefik: Department of Chemistry and Biochemistry, University of South Carolina, Columbia , SC 29208 , USA

09:45 **In2O3:H with high mobility prepared by DC sputtering and annealing in air** **T 15.3**
D. Erfurt 1, M. D. Heinemann 1, S. Körner 2, B. Szyszka 2, R. Klenk 1, R. Schlatmann 1 1 PVcomB - Helmholtz-Zentrum Berlin für Materialien und Energie, Schwarzschildstr. 3, 12489 Berlin, Germany, 2 Technical University of Berlin, Department Technology of Thin Film Device TFD, Einsteinufer 25, 10587 Berlin, Germany

10:00 **Coffee break**

ZnO : A.Klein

10:30 **Stabilization of the Wurtzite structure in ultrathin ZnO films on Fe(110)** **T 16.1**
H. L. Meyerheim (1) , A. Ernst (1), K. Mohseni (1), C. Tusche(1) , W. A. Adeagbo (2), I. V. Maznichenko (2), W. Hergert (2), G. R. Castro (3), J. Rubio-Zuazo (3), A. Morgante (4), N. Jedrecy (5), and I. Mertig (2)
(1) Max-Planck-Institut f. Mikrostrukturphysik, Weinberg 2, D-06120 Halle, Germany, (2) Institut f. Physik, Martin-Luther-Univ. Halle-Wittenberg, D-06099 Halle, Germany, (3) ESRF, Postale 220, F-38043 Grenoble Cedex, France, (4) TASC-INFM National Laboratory, I-34012 Basovizza, Italy, (5) Institut des Nano Sciences de Paris, UPMC-Sorbonne Universit´es, CNRS-UMR7588, 75005 Paris, France,

10:45 **Low resistivity aluminum doped zinc oxide thin films deposited by RF magnetron sputtering without substrate heating** **T 16.2**
Eugen Stamate, Kion Norrman and Poul Norby
Technical University of Denmark

11:00 **Interfacial engineering of ZnO nanorod-based piezoelectric nanogenerator for enhanced performance** **T 16.3**
Joe Briscoe [1], Xuan Li [1], and Petr Novák [2]
[1] Materials Research Institute, Queen Mary University of London, UK, [2] New Technologies - Research Centre, University of West Bohemia, Universitní 8, 306 14 Plzeň, Czech Republic

11:15 **Visualizing the incipient Atomic Layer Deposition of ZnO ultra thin films on In0.53Ga0.47As for tailoring contact resistivity** **T 16.4**
E. Skopin 1, M.I. Richard 2, L. Rapenne 1, A. Crisci 3, E. Blanquet 3, G. Ciatto 4, J.L. Deschanvres 1, D.D. Fong 5 and H. Renevier 1
1 Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France 2 Aix-Marseille Universite?, CNRS, Universite? de Toulon, IM2NP UMR 7334, 13397 Marseille Cedex 20, France 3 Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, F-38000 Grenoble, France 4 Synchrotron SOLEIL - Beamline SIRIUS, L?Orme des Merisiers, Saint-Aubin, F-91192, Gif sur Yvette, France 5 Argonne National Laboratory, Bldg 241/C222, 9700 S. Cass Ave., Argonne, IL 60439, USA

11:30 **Tuning the refractive index of transparent conducting oxides via oxide/oxide periodic nanolaminates** **T 16.5**
David Caffrey, Emma Norton, Cormac O'Coileain, Christopher M. Smith, Igor V. Shvets and Karsten Fleischer
School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College, The University of Dublin, Dublin 2, Ireland

11:45 **Thermal treatments and their consequences of ZnO:Yb films grown by magnetron sputtering** **T 16.6**
C. Guillaume (1), C. Frilay (1), M. Boisserie (1), F. Lemarié (1), J.L. Doualan (1), C. Grygiel (1), J. Perriere (2), L. Khomenkova (3), C. Labbé (1) and X. Portier(1)
(1) Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, CIMAP, 14000 Caen, FRANCE , (2) INSP, UMR CNRS, Université Paris IV, 4 Place Jussieu, 75252 PARIS cedex 05, FRANCE , (3) V. Lashkaryov Institute of Semiconductor Physics of National Academy of Sciences of Ukraine, 45 pr. Nauky, 03028 Kyiv, UKRAINE

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM U

Computer modeling of thermal transport at the nanoscale

Symposium Organizers :

Fabrizio CLERI, Institut d'Electronique, Microelectronique et Nanotechnologie, Villeneuve d'Ascq, France

Luciano COLOMBO, University of Cagliari, Monserrato, Italy

Ming HU, RWTH Aachen University, Aachen, Germany

Riccardo RURALI, ICMAB-CSIC, Barcelona, Spain

Monday 22 May 2017

Session 1.1 : Luciano Colombo

09:00 **A perspective on the experimental investigation of thermal transport properties in thin films and nanowires** **U 1.1**
P. Ferrando-Villalba, J. Ràfols-Ribé, A. Lopeandía, J. Rodríguez-Viejo
Nanomaterials and microsystems group Physics department Universitat Autònoma de Barcelona 08193 Bellaterra, Spain

09:40 **New Methodology for the electronic thermal conductivity of metals via direct nonequilibrium ab initio molecular dynamics** **U 1.2**
Sheng Ying Yue, Ming Hu
Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany Institute of Mineral Engineering, Division of Materials Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany

10:00 **Thermal transport in van der Waals solids from first-principles calculations** **U 1.3**
Daniel O Lindroth, Paul Erhart
Chalmers University of Technology, department of physics, Chalmers University of Technology, department of physics

10:20 **Coffee break**

Session 1.2 : Fabrizio Cleri

11:00 **Toward reliable modelling of thermal transport in organic semiconductors: effect of van der Waals interactions on their phonons** **U 1.4**
Natalia Bedoya, Egbert Zojer
Institute of Solid State Physics Graz University of Technology Graz, Austria

11:20 **Ultrafast thermo-optical dynamics of metal nano-objects in a transparent environment** **U 1.5**
M. Gandolfi (1,2,3,4), F. Medeghini(4), A. Crut(4), T. Stoll(4), F. Rossella(5), S. Hermelin(4), P. Maioli(4), F. Vallée(4), N. Del Fatti(4), G. Ferrini(1,2), C. Giannetti(1,2) and F. Banfi(1,2)
1 Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Brescia I-25121, Italy 2 Interdisciplinary Laboratories for Advanced Materials Physics (I-LAMP), Università Cattolica del Sacro Cuore, Brescia I-25121, Italy 3 Laboratory of Soft Matter and Biophysics, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D, B-3001 Heverlee, Leuven, Belgium 4 FemtoNanoOptics group, Institut Lumière Matière, Université Lyon1, CNRS, Univ Lyon, France 5 NEST, Scuola Normale Superiore and Istituto Nanoscienze-CNR, Piazza S. Silvestro 12, I-56124 Pisa, Italy

11:40 **Ballistic versus diffusive transport in the thermal conductivity of a two-phase nanocomposite material** **U 1.6**
X. Zianni, K. Termentzidis, D. Lacroix
Dept. of Aircraft Technology, Technological Educational Institution of Sterea Ellada, 34400 Psachna, Greece Université de Lorraine, LEMTA, CNRS, UMR 7563, Faculté des Sciences et Technologies, BP 70239, 54506 Vandoeuvre les Nancy cedex, France

12:20 **Lunch**

Session 2.1 : Riccardo Rurali

14:00 **Heat transport through a solid–solid junction: the interface as an autonomous thermodynamic system** **U 2.1**
Riccardo Rurali-a, Luciano Colombo-ab, Xavier Cartoixa-c, Øivind Wilhelmsen-d, Thuat T Trinh-d, Dick Bedeaux-d, Signe Kjelstrup-d
a-Institut de Cie`ncia de Materials de Barcelona (ICMAB–CSIC) Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain, b-Dipartimento di Fisica, Universita` di Cagliari, Cittadella Universitaria, I-09042 Monserrato (Ca), Italy, c-Departament d'Enginyeria Electro`nica, Universitat Auto`noma de Barcelona, 08193 Bellaterra, Barcelona, Spain, d-Department of Chemistry, Norwegian University of Science and Technology, NO-7491 Trondheim, Norway.

14:40 **Polarization-dependent phonon scattering at ferroelectric domain walls** **U 2.2**
Miquel Royo, Carlos Escorihuela-Sayalero, Jorge Íñiguez, Riccardo Rurali
Institut de Ciència de Materials de Barcelona (ICMAB–CSIC), Campus de Bellterra, 08193 Bellaterra, Barcelona, Spain , Materials Research and Technology Department, Luxembourg Institute of Science and Technology, 41 rue du Brill, L-4422 Belvaux, Luxembourg, Materials Research and Technology Department, Luxembourg Institute of Science and Technology, 41 rue du Brill, L-4422 Belvaux, Luxembourg, Institut de Ciència de Materials de Barcelona (ICMAB–CSIC), Campus de Bellterra, 08193 Bellaterra, Barcelona, Spain

15:00 **Raman thermometry analysis by finite element based simulation of the temperature field induced via laser heating** **U 2.3**
J. Jaramillo-Fernandez, E. Chavez-Angel, C. M. Sotomayor-Torres
Department of Material and Nano Physics, KTH Royal Institute of Technology, Electrum 229, S-164 40 Kista, Sweden, Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain, Department of Material and Nano Physics, KTH Royal Institute of Technology, Electrum 229, S-164 40 Kista, Sweden, Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain, ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Spain

15:20 **Coffee break**

Session 2.2 : Ming Hu

16:00 **Nanobubbles around laser heated nanoparticles and heat phase change of nanofluids** **U 2.4**
Samy Merabia(1), Julien Lombard(1), Thierry Biben(1), Haoxue Han(2), F. Mueller-Plathe(2), F. Leroy(2)
1. Université Lyon1 and CNRS, Lyon France 2. Universitat Darmstadt, Germany

16:20 **Simulation of laser heating of periodic semiconductor structures** **U 2.5**
Oleksandr O. Havryliuk, Oleksandr Yu. Semchuk
Chuiko Institute of Surface Chemistry of National Academy of Sciences of Ukraine 17 General Naumov Str., Kyiv, 03164, Ukraine

16:40 **Thermal properties of high-pressure SiO2 from first principles** **U 2.6**
Hugo Aramberri, Riccardo Rurali, Jorge Íñiguez
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Materials Research and Technology Department, Luxembourg Institute of Science and Technology (LIST)

17:00 **Anderson-like localization of phonons in nano-structures.** **U 2.7**
Y Chalopin. S Mayboroda. M Filoche.
Ecole CentraleSupelec, University of Minnesota, Ecole Polytechnique

Poster session : Luciano Colombo, Fabrizio Cleri, Riccardo Rurali, Ming Hu

17:20 **Coherent control of heat conduction in hole-based, pillar-based and hybrid phononic crystals** **U 3.1**
Roman Anufriev, Masahiro Nomura
Institute of Industrial Science, University of Tokyo, Tokyo, 153-8505, Japan

17:20 **Thermal conductivity of ferroelectric oxides through non-equilibrium molecular dynamics** **U 3.2**
J. A. Seijas-Bellido (1,a), M. P. Ljungberg (1,2), C. Escorihuela-Sayalero (3), J. C. Wojdel (1), J. Íñiguez (3), R. Rurali (1)
1. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, 08193 Bellaterra, Barcelona, Spain 2. Donostia International Physics Center, Paseo Manuel de Lardizabal 4, E-20018 Donostia-San Sebastián, Spain 3. Luxembourg Institute of Science and Technology, 5 avenue des Hauts-Fourneaux, L-4362 Esch/Alzette, Luxembourg

17:20 **Modification of the phonon spectrum of bulk Si through surface nanostructuring** **U 3.3**
A. Iskandar, A. Gwiazda, Y. Huang, M. Kazan, A. Bruyant, M. Tabbal, G. Lerondel
1.University of technology of troyes. 2.American University of Beirut.

17:20 **Low temperatures thermal conductivity in cylindrical nanowires from spatial-dependent Boltzmann equation in cylindrical coordina** **U 3.4**
M. Kazan
Department of Physics, American University of Beirut, P.O. Box 11-0236, Riad El-Solh, Beirut 1107-2020, Lebanon

17:20 **Effect of Mechanical Strain on Thermal Conductivity of Disordered Graphene: Non-equilibrium Molecular Dynamics Study** **U 3.5**
Ali Rajabpour, Saeed Bazrafshan
Mechanical Engineering Department, Imam Khomeini International University, Iran, School of Nano-Science, IPM, Tehran, Iran.

17:20 **Energy relaxation in pump-probe vibrational spectroscopy investigate by atomistic simulations** **U 3.6**
Riccardo Dettori, Michele Ceriotti, Johannes Hunger, Claudio Melis, Luciano Colombo, Davide Donadio/
Riccardo Dettori - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Michele Ceriotti - Laboratory of Computational Science and Modeling, IMX, École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland, Johannes Hunger - Max Planck Institute for Polymer research, Ackermannweg 10, 55128 Mainz, Germany, Claudio Melis - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Luciano Colombo - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Davide Donadio - Department of Chemistry, University of California Davis, One Shields Avenue, Davis, California 95616, United States

17:20 **Nanostructured porous silicon: a prototypical material for multiple phonon scattering events** **U 3.7**
Bruno Lorenzi, Riccardo Dettori, Marc T. Dunham, Claudio Melis, Rita Tonini, Luciano Colombo, Kenneth E. Goodson, Dario Narducci
Bruno Lorenzi - Dipartimento di Scienza dei Materiali, Università di Milano-Bicocca, via Cozzi 55, I-20125 Milano, Italy, Riccardo Dettori - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Marc T. Dunham - Department of Mechanical Engineering, Stanford University, Stanford, California, 94503, USA, Claudio Melis - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Rita Tonini - Dipartimento di FIM, Università di Modena e Reggio Emilia, via Campi 213, I-41100 Modena, Italy, Luciano Colombo - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Kenneth E. Goodson - Department of Mechanical Engineering, Stanford University, Stanford, California, 94503, USA, Dario Narducci - Dipartimento di Scienza dei Materiali, Università di Milano-Bicocca, via Cozzi 55, I-20125 Milano, Italy

17:20 **Thermal boundary resistance from transient nanocalorimetry: a multiscale modeling approach** **U 3.8**
Claudia Caddeo, Claudio Melis, Andrea Ronchi, Claudio Giannetti, Gabriele Ferrini, Francesco Banfi
Università Cattolica del Sacro Cuore and I-LAMP Brescia, Università di Cagliari, Università Cattolica del Sacro Cuore, I-LAMP Brescia, and KU Leuven, Università Cattolica del Sacro Cuore and I-LAMP Brescia, Università Cattolica del Sacro Cuore and I-LAMP Brescia, Università Cattolica del Sacro Cuore and I-LAMP Brescia

17:20 **Searching for anomalous thermal transport in single PEDOT polymer chains by addressing scaling behaviour** **U 3.9**
Alessandro Crnjar, Claudio Melis and Luciano Colombo
Dipartimento di Fisica, Università degli Studi di Cagliari, Cittadella Universitaria s.p.8 km 0,7, 09042 Monserrato (CA), Italia - E-mail: claudio.melis@dsf.unica.it

17:20 **Linking morphology to thermal conductivity in PEDOT** **U 3.10**
Claudio Genovese, Claudio Melis and Luciano Colombo
Dipartimento di Fisica, Università degli Studi di Cagliari, Cittadella Universitaria s.p.8 km 0,7, 09042 Monserrato (CA), Italia - E-mail: claudio.melis@dsf.unica.it

17:20 **Thermal Boundary Resistance at Eumelanin/Si interface** **U 3.11**
Aleandro Antidormi [1], Claudio Melis [1], Enric Canadell [2], Luciano Colombo [1]
[1] Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (Ca), Italy, [2] Institut de Ciència de Materials de Barcelona (ICMAB–CSIC), Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain

17:20 **Assessment on Lattice Thermal Transport Properties of Functionalized MXene Structures** **U 3.12**
Sevil Sarikurt, Cem Sevik
Department of Physics, Faculty of Science, Dokuz Eylul University, Izmir 35390, Turkey, Department of Mechanical Engineering, Faculty of Engineering, Anadolu University, Eskisehir 26555, Turkey

17:20 **Hyperuniform disordered structures for phonon control** **U 3.13**
Georgios Gkantzounis, Timothy Amoah, Marian Florescu
Department of Physics, Advanced Technology Institute, University of Surrey, Guildford, Surrey GU2 7XH, UK

17:20 **Optimization problems for nanosized semiconductor heterostructures** **U 3.14**
K.K.Abgaryan, D.L.Reviznikov
K.K.Abgaryan - Dorodnicyn Computing Centre, Federal Research Center «Computer Science and Control», Russian Academy of Sciences, 40 Vavilov st., 119333 Moscow, Russia, D.L.Reviznikov -Dorodnicyn Computing Centre, Federal Research Center «Computer Science and Control», Russian Academy of Sciences, 40 Vavilov st., 119333 Moscow, Russia

17:20 **Thermal bridging of graphene nanosheets via covalent functionalization: calculation of interfacial conductance via MD and DFTB** **U 3.15**
D. Martinez, A. di Pierro, B. Mortazavi, A. Pecchia, L. Medrano, R. Gutierrez, M. Bernal, A. Fina
Dipartimento di Scienza Applicata e Tecnologia, Politecnico di Torino, 15121 Alessandria, Italy, Institute of Structural Mechanics, Bauhaus-Universität Weimar, D-99423 Weimar, Germany, Consiglio Nazionale delle Ricerche, ISMN, 00017 Monterotondo, Italy, Institute for Materials Science, TU Dresden, 01062 Dresden, Germany

17:20 **Alloy-like behaviour of the thermal conductivity and an estimation of the thermal boundary resistance in superlattices** **U 3.16**
Emigdio Chavez-Angel, Paulina Komar, Gerhard Jakob
Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain, Institut fur Physik, Johannes Gutenberg Universitat Mainz, Staudingerweg 7, 55128 Mainz, Germany, Graduate School Materials Science in Mainz, Staudingerweg 9, 55128 Mainz, Germany, Institut fur Physik, Johannes Gutenberg Universitat Mainz, Staudingerweg 7, 55128 Mainz, Germany, Graduate School Materials Science in Mainz, Staudingerweg 9, 55128 Mainz, Germany.

17:20 **STUDY OF THE IMPACT OF THE REGULARIZATION PARAMETER IN THE PHONON MEAN FREE PATH RECONSTRUCTION** **U 3.17**
M. Á. Sánchez-Martínez, F. Alzina, E. Chávez-Ángel, B. Graczykowski, J.S. Reparaz, C.M. Sotomayor Torres.
Catalan Institute of Nanoscience and Nanotechnology,

17:20 **Understanding phonon interfacial transport at the atomic-scale from a modal perspective** **U 3.18**
Benoit Latour, Nina Shulumba, Austin Minnich
Division of Engineering and Applied Science, California Institute of Technology, Pasadena, USA

17:20 **Thermal conductivity in intermetallic clathrates: A first-principles perspective on the phonon-glass concept** **U 3.19**
Daniel O Lindroth, Paul Erhart
Chalmers University of Technology, department of physics, Chalmers University of Technology, department of physics

17:20 **Phonon scattering at solid/solid interfaces: ab initio lattice dynamics calculations** **U 3.20**
Ali Alkurdi, Samy Merabia
Institut Lumière Matière, UMR5306 Université Claude Bernard Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne Cedex, France, Department of Physics, Al-Baath University, Homs, Syria

17:20 **Molecular Dynamics study of thermal properties of Si/Ge interfaces: an EMD vs. NEMD comparison** **U 3.21**
B Davier, Y Chalopin, P Dollfus, S Volz, J Saint-Martin
Centre de Nanosciences et Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France & Laboratoire d'Énergétique Moléculaire et Macroscopique, Combustion, CNRS, CentraleSupélec, Université Paris-Saclay, Chatenay Malabry, France, Laboratoire d'Énergétique Moléculaire et Macroscopique, Combustion, CNRS, CentraleSupélec, Université Paris-Saclay, Chatenay Malabry, France, Centre de Nanosciences et Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France, Laboratoire d'Énergétique Moléculaire et Macroscopique, Combustion, CNRS, CentraleSupélec, Université Paris-Saclay, Chatenay Malabry, France, Centre de Nanosciences et Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France

17:20 **Finite element modelling of hydrodynamic heat transport on nanoscale devices** **U 3.22**
Pol Torres, Miriam Steinherr, Alvar Torello, Juan Camacho, Xavier Cartoixà, F. Xavier Alvarez, Javier Bafaluy
Physics Department. Universitat Autònoma de Barcelona. (UAB)

17:20 **Hotspots in carbon nanofibers: a random path for power efficient heating** **U 3.23**
O. Monereo 1, C. Fàbrega 1, O. Casals 1, S. Illera 1, A. Varea 1, M. Schmidt 2, T. Sauerwald 2, A. Schütze 2, A. Cirera 1, J.D. Prades 1
1 MIND/IN2UB, Departament d'Enginyeries: Electrònica, Universitat de Barcelona, Spain 2 Lab of Measurement Technology, Department of Mechatronics, Saarland University, Germany

17:20 **Analysis of thermo-diffusive cellular instabilities in continuum combustion fronts** **U 3.24**
Hossein Azizi, Sebastian Gurevich, Nikolas Provatas
Department of Physics, Centre for the Physics of Materials, McGill University, Montreal, QC, Canada

Tuesday 23 May 2017

Session 4.1 : Luciano Colombo

09:00 **Fundamentals of thermal rectification** **U 4.1**
Giuliano Benenti
Center for Nonlinear and Complex Systems, Dipartimento di Scienza e Alta Tecnologia, Università degli Studi dell''Insubria, via Valleggio 11, 22100 Como, Italy Istituto Nazionale di Fisica Nucleare, Sezione di Milano, via Celoria 16, 20133 Milano, Italy

09:40 **Ballistic thermophoresis on graphene** **U 4.2**
Emanuele Panizon, Roberto Guerra, Erio Tosatti
SISSA - Trieste, SISSA - Trieste, CNR-IOM, SISSA - Trieste, CNR-IOM, ICTP - Trieste

10:00 **Thermal conductivity of 2D materials from first principles** **U 4.3**
S. Illera, L. Colombo, M. Pruneda, P. Ordejon
Institut Català de Nanociència i Nanotecnologia (ICN2) and Institut de Ciència de Materials de Barcelona (ICMAB), CSIC and BIST, Campus de la UAB, 08193 Bellaterra (Barcelona), Spain , Dipartamento di Fisica, Università di Cagliari Cittadella Universitaria, 09042 Monserrato (Ca), Italy, Institut Català de Nanociència i Nanotecnologia (ICN2), CSIC and BIST, Campus de la UAB, 08193 Bellaterra (Barcelona), Spain , Institut Català de Nanociència i Nanotecnologia (ICN2), CSIC and BIST, Campus de la UAB, 08193 Bellaterra (Barcelona), Spain

10:20 **Coffee break**

Session 4.2 : Fabrizio Cleri

11:00 **Heat transients in molecular dynamics: from classical to first-principles** **U 4.4**
E. Lampin a), H. Zaoui a), P. L. Palla a), G. Ori b), A. Bouzid c), M. Boero b), C. Massobrio b) and F. Cleri a)
a) IEMN, Lille, France, b) IPCMS, Strasbourg, France, c) EPFL, Lausanne, Switzerland

11:20 **Tuning the thermal conductivity of methylammonium lead halide by the molecular substructure** **U 4.5**
Claudia Caddeo, Claudio Melis, Maria Ilenia Saba, Alessio Filippetti, Alessandro Mattoni
CNR-IOM, Università di Cagliari, CNR-IOM, CNR-IOM, CNR-IOM

11:40 **Adjustable Heat Rectification Mechanisms in Graphene Nanoribbons: A Molecular Dynamics Study** **U 4.6**
Daryoush Shiri and Andreas Isacsson
Department of Physics, Chalmers University of Technology, SE-412 96, Göteborg, Sweden

12:20 **Lunch**

Session 5.1 : Riccardo Rurali

14:00 **Thermal energy transport and dissipation: from inorganic nanostructures to hydrogen bonded liquids** **U 5.1**
Davide Donadio
University of California Davis

14:40 **Hydrodynamic generalization of Fourier heat transport from the Kinetic Collective Model** **U 5.2**
Pol Torres (1), Alvar Torello (1), Juan Camacho (1), Amirkoushyar Ziabari (2), Javier Bafaluy (1), Xavier Cartoixà (1), Ali Shakouri (2), F. Xavier Alvarez (1)
(1) Physics Department, Universitat Autònoma de Barelona, 08193 Bellaterra, Barcelona Spain, (2) Birck Nanotechnology Center, Purdue University, West Lafayette, Indiana 47907, United States

15:00 **Method to manage integration error within the Green-Kubo formalism** **U 5.3**
Laura de Sousa Oliveira, P. Alex Greaney
University of California, Riverside

15:20 **Coffee break**

Session 5.2 : Ming Hu

16:00 **Applications of the generalised Langevin equation to non-equilibrium heat transfer in realistic nanoscale systems** **U 5.4**

Herve Ness, Lorenzo Stella, Lev Kantorovich, Chris Lorenz
King's College London, Department of Physics, Strand Campus, Strand, London WC2R 2LS, UK, Atomistic Simulation Centre, School of Mathematics and Physics, Queen's University Belfast, University Road,Belfast BT7 1NN, Northern Ireland, UK, King's College London, Department of Physics, Strand Campus, Strand, London WC2R 2LS, UK, King's College London, Department of Physics, Strand Campus, Strand, London WC2R 2LS, UK

16:20 **First-principles thermal prototyping of multilayer substrates for GaN power devices with almaBTE** **U 5.5**

Bjorn Vermeersch, Jesús Carrete, Natalio Mingo
CEA-Grenoble, TU Wien, CEA-Grenoble

16:40 **Thermal properties of graphene nanoflakes dispersed in DMF: a classical MD study including QM corrections** **U 5.6**

Francesca Costanzo1, Bernd Ensing1,2, Miguel Pruneda1 and Pablo Ordejón1
1Catalan Institute of Nanoscience and Nanotechnology - ICN2, CSIC and BIST, Campus de Bellaterra, Spain 2 University of Amsterdam, The Netherlands

17:00 **Ab initio determination of phonon lifetimes up to the melting point** **U 5.7**

A. Glensk, B. Grabowski, T. Hickel, J. Neugebauer, P. Neibecker, J. Neuhaus, M. Leitner, K. Hradil, W. Petry
Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Str. 1, 40237 Düsseldorf, Germany and the Heinz Maier-Leibnitz Zentrum (MLZ), Technische Universität München, Lichtenbergstr. 1, 85748 Garching, Germany

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM V

Design and hierarchical assemblies of nanomaterials (nanoparticles, carbon materials, molecules) towards energy, sensing, electronic, catalysis and detection applications

Symposium Organizers :

Peter KOFINAS, University of Maryland, College Park, USA

Sergio MOYA, CIC biomaGUNE, San Sebastian, Spain

Sylvie BEGIN-COLIN, Institut of Physic and Chemistry of Materials of Strasbourg, France

Yuanzhe PIAO, Seoul National University, Korea

Monday 22 May 2017

Modeling approaches : Jean-François Dayen - Sylvie Bégin

09:00 **Coarsening for modeling nanoparticle size: Theory and experiment** **V 1.1**
Paulo Cesar De Morais
Anhui University, School of Chemistry and Chemical Engineering, Hefei, China

09:30 **First-principles molecular dynamics as a tool to achieve an atomic-scale rationale for multifunctional hybrid materials** **V 1.2**
Z. Chaker, G. Ori, M. Boero, C. Massobrio
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67034 Strasbourg, France

09:45 **Mesoscopic modeling of structural, mechanical and thermal transport properties of vertically aligned carbon nanotube materials** **V 1.3**
Bernard K. Wittmaack, Md Abu Horaira Banna, Alexey N. Volkov, Leonid V. Zhigilei
Department of Materials Science and Engineering, University of Virginia, 395 McCormick Road, Charlottesville, VA 22904-4745, USA, Department of Mechanical Engineering, University of Alabama, H. M. Comer Hall, 7th Avenue, Tuscaloosa, AL 35487, USA

10:00 **Coffee break**

Graphen based devices : Paolo Morais - Sergio Moya

10:30 **Graphene/nanoclusters hybrid for quantum electronics** **V 2.1**
F. Godel, L. D. N. Mouafo, G. Froehlicher, S. Berciaud, B. Doudin, Y. Henry, D. Halley and J-F. Dayen.
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg , UMR 7504, F-67000 Strasbourg, France.

11:00 **Integrated Arrays of Air-Dielectric Graphene Transistors as Transparent, Active-Matrix Pressure Sensors for Wide Pressure Ranges** **V 2.2**
Sangyoon Ji1, Joohee Kim1, Jiuk Jang1, and Jang-Ung Park1
1School of Materials Science and Engineering, Wearable Electronics Research Group, Smart Sensor Research Center, Ulsan National Institute of Science and Technology (UNIST), Ulsan Metropolitan City, 44919, Republic of Korea

11:15 **Self-Standing and Flexible Electrodes via Electrodeposition of Metal Oxides/Hydroxides onto Graphene Paper** **V 2.3**
Tugce Beyazay, Eylul Sarac Oztuna, Ugur Unal
Graduate School of Science & Engineering, Koc University, Istanbul, Turkey, Graduate School of Science & Engineering, Koc University, Istanbul, Turkey, Department of Chemistry, Koc University, Istanbul, Turkey

11:30 **Graphene-Metal Oxide/Hydroxide Hierarchical Structures as Electrodes for Electrochemical Capacitors** **V 2.4**
Eylul Sarac Oztuna, Ugur Unal
Graduate School of Science & Engineering, Koc University, Istanbul, Turkey, Department of Chemistry, Koc University, Istanbul, Turkey

11:45 **Nickel Cobalt Sulfide embeded in free standing Holey Graphene Hydrogel for Supercapacitors** **V 2.5**
Sintayehu Nibret Tiruneh1, Bong Kyun Kang1, Dae Ho Yoon1,2, Syed Kamran Sami1*
1 School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea, 2 SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon 440-746, Republic of Korea

12:00 **Lunch**

Nanomaterials for catalysis : André-Jean Atthias - Peter Kofinas

13:30 **Iron carbides nanoparticles for magnetically induced CO2 hydrogenation** **V 3.1**
Bruno Chaudret
Laboratoire de Physique et Chimie de Nano-Objets UMR 5215 INSA-CNRS-UPS Institut National des Sciences Appliquées 135 Avenue de Rangueil 31077 TOULOUSE CEDEX 4 - -FRANCE

14:00 **The importance of the surface chemistry of ZrO2 nanocrystals in ligand exchange and esterification nanocatalysis** **V 3.2**
Katrien De Keukeleere(1), Jonathan De Roo(1,2), Sofie Coucke(1,2), Els De Canck(1), Davy Sinnaeve(2), Yannick Coppel(3), Pascal Van Der Voort(1), Fabien Delpech(4), José C. Martins(2), Zeger Hens(1), and Isabel Van Driessche(1)
(1) Department of Inorganic and Physical Chemistry, Ghent University, Ghent, Belgium (2) Department of Organic and Macromolecular Chemistry, Ghent University, Ghent, Belgium (3) Laboratoire de Chimie de Coordination, Université de Toulouse, Toulouse, France (4) Laboratoire de Physique et Chemie des Nano-Objets, Université de Toulouse, Toulouse, France

14:15 **Rational Design of Metal Organic Framework Derived Hollow NiCo2O4 Arrays for Flexible Supercapacitor and Electrocatalysis** **V 3.3**
Cao Guan1, Chuanwei Cheng2, and John Wang1
1Department of Materials Science and Engineering, National University of Singapore, 117574 Singapore 2Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology, School of Physics Science and Engineering, Tongji University, Shanghai 200092, P. R. China.

14:30 **Bimetallic Yolk@Shell Electrocatalysts for Glucose Oxidation** **V 3.4**
T. Unmüssig*/**, A. Guiet***/****, A. Fischer*/**/***/****
*Institute of Inorganic and Analytical Chemistry, University of Freiburg, Freiburg, Germany, **Freiburger Materialforschungszentrum, University of Freiburg, Freiburg, Germany, ***Department of Chemistry, Technische Universität Berlin, Berlin, Germany, ****Université Bretagne Loire, Université du Maine, Institut des Molécules et Matériaux du Mans, Le Mans, France

14:45 **New LbL multicomponent coatings : impact on photocatalytic decontamination** **V 3.5**
P. Barrois, O. Félix, G. Decher, V. Keller
Institut de Chimie et des Procédés pour l'Energie, l'Environnement et la Santé, Strasbourg Institut Charles Sadron, Strasbourg, France

15:00 **High-efficiency and ultrastable Co-Ni-P nanowire electrodes for over 3000-hour water splitting** **V 3.6**
Lifeng Liu,* Wei Li, Dehua Xiong
International Iberian Nanotechnology Laboratory

15:15 **A nanostructured Zn(II) Schiff-base complex for chemoresistive sensing of volatile amines** **V 3.7**
Salvo Mirabella,† Ivan Pietro Oliveri,‡ Francesco Ruffino,† Giuseppe Maccarrone,‡ and Santo Di Bella. ‡
† MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy ‡ Dipartimento di Scienze Chimiche, Università di Catania, Viale A. Doria 6, 95125 Catania, Italy

15:30 **Coffee break**

Nanostructuration Towards devices : Lee Jinwoo - Yuanzhe Piao

16:00 **Assembly of Iron Oxide Nanoparticles on Gold Substrates for Biosensing Application** **V 4.1**
Mathias DOLCI1, Jean-François BRYCHE2, Spiros ZAFEIRATOS3, Fouzia BOULMEDAIS4, Xavier CATTOEN 5, Gregory BARBILLON2, Benoit P. PICHON1
1 Université de Strasbourg, CNRS, IPCMS, UMR 7504, 23 rue du Loess BP43, 67034 Strasbourg Cedex 2, France 2 Institut d'Electronique Fondamentale, (UMR 8622), rue Ampère, 91405 Orsay Cedex, France 3 Université de Strasbourg, CNRS, ICPEES, UMR 7515, 25 rue Becquerel 67087 Strasbourg Cedex 2, France 4 Université de Strasbourg, CNRS, ICS, UPR22, 75 rue Becquerel 67200 Strasbourg Cedex 2, France 5 Institut Néel, (UPR 2940), 25 Rue des Martyrs, 38042 Grenoble Cedex 9, France

16:15 **Hydrothermal preparation of MoS2/TiO2/Silicon nanowires as an effective substrate for LDI-MS detection of biomarkers in serum** **V 4.2**
Abderrahmane Hamdi1, 2, 3, Ioana Silvia Hosu1, Hatem Ezzaouia2, Rabah Boukherroub1 and Yannick Coffinier1
1Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, IEMN, UMR CNRS 8520, Avenue Poincaré, BP 60069, 59652 Villeneuve d'Ascq, France. 2 Laboratory of Semi-conductors, Nano-structures and Advanced Technologies, Research and Technology Centre of Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia 3 Faculty of Science of Bizerte, University of Carthage, 7021 Zarzouna, Tunisia

16:30 **Nanostructuration and functionalization of cantilevers for the detection of explosives and chemical warfare agents traces** **V 4.3**
Laurent Schlur, Geoffrey Gerer, Alessio Ghisolfi, Pierre Agostini, Manuel Hofer, Ivaylo Atanasov, Mathias Holz, Karine Bonnot, Thomas Cottineau, Valérie Keller, Denis Spitzer
Laurent Schlur, Geoffrey Gerer, Pierre Agostini, Karine Bonnot, Denis Spitzer : Nanomatériaux pour les Systèmes Sous Sollicitations Extrêmes (NS3E) UMR 3208 ISL/ CNRS/UNISTRA, French German Research Institute of Saint-Louis, 68301 Saint-Louis, France, Geoffrey Gerer, Alessio Ghisolfi, Thomas Cottineau, Valérie Keller : Institut de chimie et procédés pour l'énergie, l'environnement et la santé (ICPEES) UMR 7515 CNRS/UNISTRA, 67087 Strasbourg, France, Manuel Hofer, Ivaylo Atanasov, Mathias Holz : Nano analytik Gmbh, Ehrenbergstr. 1, 98693 Ilmenau, Germany

16:45 **Monolithic alumina aerogels for high temperature applications** **V 4.4**
Mattia A. Lucchini, Felix Rechberger, Elena Tervoort, Markus Niederberger
Laboratory for Multifunctional Materials, Department of Materials, ETH Zürich, Vladimir-Prelog-Weg 5, 8093 Zürich, Switzerland

17:00 **Nanostructured micro-raspberry supraparticles** **V 4.5**
C. Stauch (a,b), T. Ballweg (a), R. Luxenhofer (b), K. Mandel (a,b)
a Fraunhofer Institute for Silicate Research, ISC, Neunerplatz 2, D97082 Würzburg, Germany. b University Würzburg, Chair of Chemical Technology of Materials Synthesis, Röntgenring 11, D97070 Würzburg, Germany.

Tuesday 23 May 2017

Nanomaterials for energy applications : André-Jean Attias - Sylvie Begin

08:30 **Direct Access to Functional Ordered Mesoporous Materials for Energy Conversion& Storages: From Ordered to Hierarchical Structure** **V 5.1**
Jinwoo Lee
Department of Chemical Engineering, Pohang University of Science and Technology

09:00 **Synthesis of 3D structure MnCo2S4@Reduced graphene oxide for hybrid supercapacitor** **V 5.2**
Sung-Hoon Kwag, Bong-Kyun Kang, Dae-Ho Yoon
School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea, SKKU Advanced institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon 16419, Korea

09:15 **Pseudobrookite-type self-organized spherical porous granules as potential energy storage** **V 5.3**
Yoshikazu Suzuki(1)*, and Hioroya Abe(2)
(1) Faculty of Pure and Applied Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki, 305-8573, Japan, (2) Joining and Welding Research Institute, Osaka University, 11-1 Mihogaoka, Ibaragi, Osaka 567-0047, Japan

09:30 **Investigation of an Air-Stable Solid Polymer Electrolyte of Lithium-Ion Batteries** **V 5.4**
Matthew Widstrom, Arthur von Wald Cresce, Metecan Erdi, Peter Kofinas
Department of Materials Science and Engineering, University of Maryland, US Army Research Lab, Fischell Department of Bioengineering, University of Maryland, Fischell Department of Bioengineering, University of Maryland

09:45 **Synthesis and characterization of hybrid photosensitive Ti oxide nanoparticles for solar application** **V 5.5**
Solene BECHU*, Neal FAIRLEY#, Vincent FERNANDEZ*, Bernard HUMBERT*, Mireille RICHARD-PLOUET*
* IMN-Université de Nantes, Nantes, France , # Casa Software Ltd, Bay House, 5 Grosvenor Terrace, Teignmouth, TQ14 8NE, United Kingdom

10:00 **Coffee break**

Carbon based devices : Andreas Ferry - Sergio Moya

10:30 **Hierarchical carbon-based materials for catalysis and energy storage** **V 6.1**
Cuong Pham-Huu
Institute of Chemistry and Processes for Energy, Environment and Health (ICPEES, UMR 7515) CNRS and University of Strasbourg, France

11:00 **Extreme Te nanowires encapsulated within ultra-narrow single-walled carbon nanotubes** **V 6.2**
Paulo V. C. Medeiros, Samuel Marks, Jamie M. Wynn, Andrij Vasylenko, Quentin Ramasse, David Quigley, Jeremy Sloan, Andrew J. Morris
Theory of Condensed Matter Group, Cavendish Laboratory, University of Cambridge, J. J. Thomson Avenue, Cambridge CB3 0HE, U.K., Department of Physics, University of Warwick, Coventry CV4 7AL, U.K., Theory of Condensed Matter Group, Cavendish Laboratory, University of Cambridge, J. J. Thomson Avenue, Cambridge CB3 0HE, U.K., Department of Physics, University of Warwick, Coventry CV4 7AL, U.K., SuperSTEM Laboratory, STFC Daresbury, Keckwick Lane, Daresbury WA4 4AD, U.K., Department of Physics, University of Warwick, Coventry CV4 7AL, U.K., Department of Physics, University of Warwick, Coventry CV4 7AL, U.K., Theory of Condensed Matter Group, Cavendish Laboratory, University of Cambridge, J. J. Thomson Avenue, Cambridge CB3 0HE, U.K.

11:15 **Carbon nanotube dry adhesives with temperature-enhanced adhesion over a large temperature range** **V 6.3**
Ming Xu, Feng Du, Sabyasachi Ganguli, Ajit Roy, Liming Dai
Ming Xu1,2, Feng Du1, Sabyasachi Ganguli 3, Ajit Roy 3, Liming Dai1,4 1 Center of Advanced Science and Engineering for Carbon (Case4Carbon), Department of Macromolecular Science and Engineering, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, Ohio 44106, USA. 2 State Key Laboratory of Materials Processing and Die & Mold Technology, School of Materials Science and Engineering, Huazhong University of Science and Technology (HUST), Wuhan 430074, China. 3 Materials and Manufacturing Directorate, Air Force Research Laboratory, Dayton, Ohio 45433, USA. 4 BUCT-CWRU International Joint Laboratory, College of Energy, Beijing University of Chemical Technology (CWRU), Beijing 100029, China.

11:30 **Clickable Fullerene Scaffolds: Select your Application and Click** **V 6.4**
Jean-François Nierengarten
Laboratoire de Chimie des Matériaux Moléculaires, Université de Strasbourg et CNRS (UMR 7509), 25 rue Becquerel, 67087 Strasbourg Cedex 2, France

11:45 **Bio-inspired Quantum Dot assemblies for efficient energy harvesting and transfer on nanoscales** — V 6.5
Dr. Aliaksandra Rakovich
Condensed Matter Physics Section, Department of Physics, Imperial College London, UK

12:00 **Lunch**

Nanoparticles for biomedical applications : Bruno Chaudret - Peter Kofinas

13:30 **PLASMONIC AND MAGNETIC NPS FOR BIOMEDICAL APPLICATIONS** — V 7.1
Nguyen TK Thanh
Biophysics Group, Department of Physics and Astronomy and UCL Healthcare Biomagnetic and Nanomaterials Laboratory

14:00 **Design of hybrid core-shell nanoparticles exhibiting plasmonic and magnetic properties for hyperthermia applications** — V 7.2
Thi Thuy NGUYEN, Jeanne VOLATRON, Florence GAZEAU, Fayna MAMMERI, Souad AMMAR
Thi Thuy Nguyen, Fayna Mammeri, Souad Ammar: ITODYS, CNRS UMR-7086, Université Paris Diderot, Sorbonne Paris Cité, Paris, France, Jeanne Volatron, Florence Gazeau: MSC, CNRS UMR-7057, Université Paris Dderot, Sorbonne Paris Cité, Paris, France

14:15 **Design of of iron precursors for synthesis engineering of anisotropic iron oxide nanoparticles** — V 7.3
Geoffrey Cotin, Céline Kiefer, Cristina Blanco Andujar, Damien Mertz, D. Felder-Flesch, Sylvie Bégin-Colin
Institut de Physique et Chimie des Matériaux, UMR CNRS-UdS 7504 University of Strasbourg, 23 Rue du Loess, BP 43, 67034 Strasbourg, France

14:30 **Cancer-Targeting Nanoparticles: New Chemical Approaches for Enhanced Scalability and Precision** — V 7.4
Uriel Marie-Sainte
Imperial College London

15:00 **Solventless scalable synthesis of uniform nanoparticles** — V 7.5
Yuanzhe Piao
Graduate School of Convergence Science and Technology, Seoul National University, Seoul, 151-742, Republic of Korea

15:15 **Engineering and characterization of a new type of nanocapsules: Hybridosomes®. Electroclick construction of nanostructured film.** — V 7.6
F. Sciortino, S. Chevance, F. Gauffre
Institut des Sciences Chimiques de Rennes, UMR CNRS 6226, Université de Rennes 1.

15:45 **Direct Fabrication of Colloidal Amorphous Zero Valent Iron (nZVI) Nanoparticles by Liquid-Assisted Pulsed Laser Ablation** — V 7.7
O. Bomati-Miguel*†, R. Lahoz‡, C. Rentenberger+, W. Kautek*
* University of Vienna, Department of Physical Chemistry, Vienna, Austria, † Departamento de Física Aplicada. Universidad Autónoma de Madrid. Madrid, Spain, ‡ Centro de Química y Materiales de Aragón (CEQMA-CSIC). Zaragoza, Spain, + University of Vienna, Faculty of Physics, Vienna, Austria

16:00 **Coffee break**

Poster session : Peter Kofinas - Yuanzhe Piao

16:30 **Two-photon excitation-induced reactive oxygen species efficiently mediated photodynamic therapy and optical imaging using amino-** — V 8.1
WEN-SHUO KUO
College of Medicine/ College of Biopharmaceutical and Food Sciences, China Medical University, Taichung city, 404 Taiwan (R.O.C.).

16:30 **Nanostructured L10-CoPt dot arrays with perpendicular magnetic anisotropy** — V 8.2
A .Hannour 1,* A. Nafidi 1, L. Bardotti 2, B. Prével 2, F. Tournus 2, D. Mailly 3, J.-P. Bucher 4
1 Laboratory of Condensed Matter Physics and Nanomaterials for Renewable Energy Faculty of Sciences, Ibn Zohr University, Agadir, Morocco 2 Institut Lumière Matière, UMR 5306 Université Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne, France 3 Laboratoire de Photonique et de Nanostructures, CNRS-LPN, Route de Nozay 91460 Marcoussis, France 4 Institut de Physique et Chimie des Matériaux, UMR 7504, Université Louis Pasteur 23 rue du Loess, 67037 Strasbourg, France *Corresponding author. E-mail address: a.hannour@uiz.ac.ma

16:30 **Resonance energy transfer from dioxaborine cyanine dye to single wall carbon nanotubes: photoluminescence excitation-emission st** — V 8.3
Mohammed Al Araimi1,2,*, Petro Lutsyk1,3, Anatoly Verbitsky3, Yuri. Piryatinski3, Mykola Shandura4 and Alex Rozhin2,
1 Nanotechnology Research Group, Aston Institute of Photonic Technologies, School of Engineering & Applied Science, Aston University, Aston Triangle, B4 7ET Birmingham, UK. 2 Engineering Department, Al Musanna College of Technology, Muladdah Musanna, P.O. Box 191, P.C. 314, Sultanate of Oman. 3 Institute of Physics, National Academy of Sciences of Ukraine, 46, prospekt Nauky, 03680 Kyiv, Ukraine. 4 Institute of Organic Chemistry, National Academy of Sciences of Ukraine, 5, Murmanska str., 02660 Kyiv, Ukraine.

16:30 **Fe3O4 Nanocrystal Embedded in N, S-Carbon nanotube as an Efficient Catalyst for Oxygen Reduction Reaction** — V 8.4
Zeng Shanshan, Yangyang Li, Jian Lu
City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong, China

16:30 **Nanowelding-mediated shape-engineering of the building blocks for hierarchical multimetallic aerogels** — V 8.5
Bin Cai, Alexander Eychmüller
Technische Universität Dresden, Dresden, Germany

16:30 **Tuning the work functions of metal surfaces by adsorption and steps** — V 8.6
Yingda Jiang, Jingtai Li, Wei Liu
School of Materials Science and Engineering, Nanjing University of Science and Technology China

16:30 **Room temperature detection of ppb level ammonia in chemically fluorinated graphene oxide** — V 8.7
Yeon Hoo Kim, Ji Soo Park, Seo Yun Park, Seonyong Lee, Woonbae Sohn, Young-Seok Shim, Chong Rae Park, Donghwa Lee, Ho Won Jang*
Department of Materials Science and Engineering, Seoul National University, Seoul 08826, Republic of Korea, School of Materials Science and Engineering, Chonnam National University, Gwangju 61186, Republic of Korea,

16:30 **Synthesis of silica nanoparticles with controlled size via single-step process** — V 8.8
Jin Han, Sang Hyuk Im
Kyung Hee University, Korea University

16:30 **Polyoxometalates-based inorganic nanoribbons and nanohelices for enantioselective catalysis** — V 8.9
Mariam Attoui(a,b),Sylvain Nlate(a), Thierry Buffeteau(b), Emilie Pouget(a), Reiko Oda(a), David Talaga(b), Gwénaëlle Le Bourdon(b)
(a)Institute of Chemistry & Biology of Membranes & Nanoobjects (CBMN), CNRS UMR5248, University of Bordeaux, Pessac, France,(b)Institute of Molecular Sciences (ISM), CNRS UMR 5255, University of Bordeaux, Talence, France. Email: mariam.attoui@u-bordeaux.fr

16:30 **Graphene-based materials for sustainable energy and environmental applications** — V 8.10
Zhiping Zeng, Rong Wang, Tan Thatt Yang Timothy
Zhiping Zeng, Rong Wang, Singapore Membrane Technology Center, Nanyang Environment and Water Research Institute, Interdisciplinary Graduate School, Nanyang Technological University, Singapore 637141, Singapore, Tan Thatt Yang Timothy, School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore 639798, Singapore

16:30 **Assembly of Reduced Carbon Nanotubes into Aerogels and Composite Fibres** — V 8.11
Adam J. Clancy, Martina de Marco, Milo Shaffer
Department of Chemistry, Imperial College London, London, UK

16:30 **Solution based thermochromic W doped VO2 particles for energy efficiency applications** — V 8.12
O. Markaki1,3, L. Zouridi1,2, E. Gagaoudakis1,3, E. Aperathitis1, G. Kiriakidis1,3,4, V. Binas1,3,4
1 Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2 University of Crete, Department of Chemistry, 710 03 Heraklion, Crete, Greece 3 University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece 4 Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece

16:30 **Stretchable and transparent strain sensor integrated with color-changing flexible electrochromic device** **V 8.13**
Heun Park, Dong Sik Kim, Soo Yeong Hong, Chulmin Kim, Jun Yeong Yun, Seung Yun Oh, Sang Woo Jin, Yu Ra Jeong, Gyu Tae Kim, and Jeong Sook Ha*
H. Park, D. S. Kim, S. Y. Hong, J. Y. Yun, Y. R. Jeong, Prof. J. S. Ha Department of Chemical and Biological Engineering, Korea University, Seoul, 02453, Republic of Korea C. Kim, Prof. G. T. Kim Department of Electrical Engineering, Korea University, Seoul, 02453, Republic of Korea S. Y. Oh, S. W. Jin, Prof. J. S. Ha KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, 02841, Republic of Korea

16:30 **Crystal Engineering of Bimetallic Metal-Organic Frameworks based on MIL-101** **V 8.14**
Thanadporn Tanasaro, Sareeya Bureekaew
School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and Technology, Rayong 21210, Thailand

16:30 **Room temperature NO2 gas sensing by few-layer graphene Langmuir-Schaefer film decorated by NiFe2O4 nanoparticles** **V 8.15**
Dmytro Kostiuk, Maxym Demydenko, Jan Ivanco, Stefan Luby, Peter Siffalovic, Matej Jergel, Eva Majkova
Institute of Physics Slovak Academy of Sciences

16:30 **Highly sensitive detection and removal of mercury ion using a multimodal nanosensor** **V 8.16**
Manisha Chatterjee
Lala Lajpat Rai Memorial Medical College, Meerut, UP

16:30 **Stretchable Array of Multi-Functional Sensors Consisting of PU Foam and MWCNT/PANI Nanocomposite on skin** **V 8.17**
Soo Yeong Hong1, Ju Hyun Oh1, Heun Park1, Junyeong Yun1, Sang Woo Jin2, Yu Ra Jeong1, Jeong Sook Ha1,2
1 Department of Chemical and Biological Engineering, Korea University, Seoul, South Korea 2 KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, South Korea

16:30 **MAGNETIC SUPRAPARTICLES FROM IRON OXIDE NANOPARTICLE BUILDING-BLOCKS** **V 8.18**
K. Mandel and the Particle Technology Group Würzburg
Fraunhofer Institute for Silicate Research ISC, Neunerplatz 2, 97082 Würzburg and Department of Chemical Technology of Materials Synthesis, University of Würzburg, Röntgenring 11, 97070 Würzburg

16:30 **Superior Chemical Sensing Ability of Black Phosphorus** **V 8.19**
Soo-Yeon Cho, Youhan Lee, Hyeong-Jun Koh, Jihan Kim, Hee-Tae Jung
Chemical and Biomolecular Engineering Department, Korea Advanced Institute of Science and Technology (KAIST)

16:30 **Chemical and thermal modification of graphene oxide for sensing applications** **V 8.20**
Silvia Scalese (a), Daniele D?Angelo (a), Salvatore Baldo (a)(b), Simona Filice (a) (c), Corrado Bongiorno (a), Riccardo Reitano (b), Enza Fazio (d), Sabrina Conoci (e), Antonino La Magna (a)
(a) CNR-IMM, Ottava Strada n.5, I-95121 Catania (Italy), (b) Dipartimento di Fisica e Astronomia, via S. Sofia n.64, I-95123 Catania (Italy), (c) Dipartimento di Scienze Chimiche, Università degli Studi di Catania, viale Andrea Doria 6, I-95125 Catania (Italy), (d) Dipartimento di Scienze Matematiche e Informatiche, Scienze Fisiche e Scienze della Terra, Università degli Studi di Messina, Viale F. Stagno d?Alcontres 31, I-98166 Messina (Italy), (e) STMicroelectronics Stradale Primosole 50, I-95121 Catania (Italy)

16:30 **Synthesis and characterization of Single-Walled Carbon Nanotubes@silica nanocomposites applied to electrochemical sensing.** **V 8.21**
Halima Djelad, Maria Porcel, Francisco Montilla, Emilia Morallon.
Departamento Química Física e Instituto Universitario de Materiales, Universidad de Alicante, Ap. 99, E-03080, Alicante, Spain.

16:30 **Dye-adsorption properties of WO3 nanorods synthesized by microwave assisted hydrothermal methods** **V 8.22**
Seung-Myung Yoo, Soo-Min Park and Chunghee Nam
Hannam University

16:30 **Functional Responsive superparamagnetic core/shell Nanoparticles and theirdrug release properties** **V 8.23**
Zied Ferjaoui, Raphaël Schneider, Eric Gaffet, Abdelaziz Meftah and Halima Alem-Marchand
Institut Jean Lamour (IJL), UMR CNRS 7198, Université de Lorraine, Department N2EV, Parc de Saurupt CS50840 54011 Nancy, France. Unité Nanomatériaux et Photonique, Département de physique, Faculté des sciences du Tunis El Manar 2092 – Tunis, Tunisia Laboratoire Réactions et Génie des Procédés (LRGP), UMR CNRS 7274, Université de Lorraine, 1 rue Grandville 54001 Nancy, France.

16:30 **Rational design of hierarchical metasurface for ultrasensitive Surface Enhanced Raman Scattering** **V 8.24**
Chen Xu,a,b,‡ Yibao Zhou,a,b,‡ Shuangbao Lyu,a Huijun Yao,a Dan Mo,a Jie Liu,*a Jinglai Duan*a
a Materials Research Center, Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou 730000, China. Email: j.liu@impcas.ac.cn (JL), j.duan@impcas.ac.cn (JLD) b School of Physical Science and Technology, Lanzhou University, China.
† These authors contributed equally.

16:30 **Preparation of electrospun nanofibers based on the piezoelectric and triboelectric properties for energy harvesting application** **V 8.25**
Xue Pu, Robert K Y Li
City University of Hong Kong

16:30 **Synthesis of CZTS nanoparticle by using novel molecular precursors** **V 8.26**
Joo-Hyun Park, Bo Keun Park, Taek-Mo Chung, Chang Gyoun Kim
Korea Research Institute of Chemical Technology, Daejeon, Korea

16:30 **Active Nanodiamond Swimmers Fabricated by Glancing Angle Deposition (GLAD)** **V 8.27**
Ji Tae Kim [1], Udit Choudhury [2], Peer Fischer [2]
[1]Department of Mechanical Engineering, The University of Hong Kong, Hong Kong, [2] Max Planck Institute for Intelligent Systems, Stuttgart, Germany

16:30 **Synthesis and Characterization of Perovskite Nanoparticles for Oxygen Evolution Catalysis** **V 8.28**
Baris Alkan (baris.alkan@uni-due.de, Hartmut Wiggers (hartmut.wiggers@uni-due.de), Martin Muhler (muhler@techem.rub.de), Wolfgang Schuhmann (wolfgang.schuhmann@rub.de), Christof Schulz (christof.schulz@uni-due.de)
Baris Alkan (IVG and CENIDE, University of Duisburg-Essen), Hartmut Wiggers (IVG and CENIDE, University of Duisburg-Essen), Martin Muhler (Laboratory of Industrial Chemistry, Ruhr-University Bochum), Wolfgang Schuhmann (Analytical Chemistry?Center for Electrochemical Sciences (CES), Ruhr-University Bochum), Christof Schulz (IVG and CENIDE, University of Duisburg-Essen)

16:30 **Nanostructured Polymeric Yolk-shell Capsules: a Versatile Tool for Hierarchical Nanocatalyst Design** **V 8.29**
G. Rydzek 1,2, N. Sanchez Ballester 2, K. Ariga 2
1 International Center for Young Scientists (ICYS), Tsukuba Japan, 2 National Institute for Materials Science (NIMS), International Center for Material Nanoarchitectonics (MANA), Tsukuba, Japan

16:30 **Study of dynamic photo induced oxygen adsorption-desorption mechanisms of nanocluster-assembled ZnSe films** **V 8.30**
Ngaihang Ng, Chungwo Ong, Xuming Zhang
The Hong Kong Polytechnic University

16:30 **Development of layered double hydroxides for heavy metal removal** **V 8.31**
A. Kamou1, K. Simeonidis1, D. Karfaridis1, E. K. Polychroniadis1, E. Pavlidou1, M. Mitrakas2, G. Vourlias1
1Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Analytical Chemistry Laboratory, Department of Chemical Engineering, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

16:30 **Preservation of enzyme activity in smart capsules via self-assembly of polyelectrolytes at water-water interfaces** **V 8.32**
Qingming Ma, Yang Song, Jin Woong Kim, Hong Sung Choi, Ho Cheung Shum
Qingming Ma, Department of Mechanical Engineering, University of Hong Kong, Pokfulam Road, Hong Kong & HKU-Shenzhen Institute of Research and Innovation (HKU-SIRI), Shenzhen 518000, China, Yang Song, Department of Mechanical Engineering, University of Hong Kong, Pokfulam Road, Hong Kong & HKU-Shenzhen Institute of Research and Innovation (HKU-SIRI), Shenzhen 518000, China, Jin Woong Kim, Department of Bionano Technology and Department of Applied Chemistry, Hanyang University, Ansan 426-791, Republic of Korea, Hong Sung Choi, Shinsegae International Co. Ltd., Seoul, 135-954, Republic of Korea, Ho Cheung Shum, Department of Mechanical Engineering, University of Hong Kong, Pokfulam Road, Hong Kong & HKU-Shenzhen Institute of Research and Innovation (HKU-SIRI), Shenzhen 518000, China,

16:30 **Ni-loaded ceria-zirconia nanoparticles: synthesis in supercritical alcohols, characterization and catalysis of CH4 dry reforming** **V 8.33**
V. Sadykov1,2, M. Simonov1,2, M. Smirnova1,2, N. Mezentseva1,2, V. Rogov1,2, T. Glazneva1,2, V. Anikeev1, T. Larina1, Y. Bespalko1, Y. Fedorova1, A. Shmakov1,2, A. Ishchenko1,2, V. Kriventsov1, A.-C. Roger3, A. Adamski4, C. Aymonier5
1 Boreskov Institute of Catalysis, Novosibirsk, Russia, 2 Novosibirsk State University, Novosibirsk, Russia, 3 University of Strasbourg, Strasbourg, France, 4 Jagiellonian University, Krakow, Poland, 5University of Bordeaux, France.

16:30 **Interface engineering of Fe/Pt bilayers** **V 8.34**
D. Karfaridis1, N. Pliatsikas1, S. Keller2, K. Simeonidis1, U. Wiedwald3, M. Angelakeris1, G. P. Dimitrakopulos1, E. K. Polychroniadis1, Th. Kehagias1, E. Th. Papaioannou2, G. Vourlias1
1Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Department of Physics and National Research Center OPTIMAS, Technical University of Kaiserslautern, 67663 Kaiserslautern, Germany, 3Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, D-47057 Duisburg, Germany

16:30 **Effect of an MgO spacer on the structural properties and magnetization dynamics of Fe/MgO/Pt trilayers** **V 8.35**
D. Karfaridis1, K. Simeonidis1, L. Mihalceanu2, S. Keller2 , U. Wiedwald3, Th. Kehagias1, E. K. Polychroniadis1, M. Angelakeris1, E. Th. Papaioannou2, G. Vourlias1
1Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Department of Physics and National Research Center OPTIMAS, Technical University of Kaiserslautern, 67663 Kaiserslautern, Germany, 3Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, D-47057 Duisburg, Germany

16:30 **Low Temperature Synthesized Vanadium Carbide Nanosheets as Highly Active HER Catalyst** **V 8.36**
Xiang peng, Paul K. Chu
Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China

16:30 **Room-Temperature Switching Behavior in CNT/Hexadecane Composites** **V 8.37**
Meng Peng,Quan Zhang,Yulong Wu,Zhiyuan Tan,Guoan Cheng,Xiaoling Wu,Ruiting Zheng
1.Key Laboratory of Radiation Beam Technology and Materials Modification of Ministry of Education, College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, P. R. China : Meng Peng,Quan Zhang,Yulong Wu,Zhiyuan Tan,Guoan Cheng,Xiaoling Wu,Ruiting Zheng, 2.Beijing Radiation Center, Beijing 100875, P. R. China: Guoan Cheng,Xiaoling Wu,Ruiting Zheng,

16:30 **Synthesis of magnetic iron oxide nanoneedles containing multi-metallic nanoparticles and their application** **V 8.38**
Hyokyung Jeon,1 Ji Sun Kim,1,2 Ye-Jin Jin,1,2 and Ha-Jin Lee1,2
1. Western Seoul Center, Korea Basic Science Institute (KBSI), Seoul 03759, Korea 2. Dept. of Chemistry and Nanoscience, Ewha Womans University, Seoul 03760, Korea

16:30 **Synthesis of Photoluminescent Organic-Inorganic Ureasil Nanoparticles for Imaging Applications** **V 8.39**
Ilaria Meazzini, Steve Comby, François-Xavier Turquet, Judith E. Houston and Rachel C. Evans
Ilaria Meazzini, Steve Comby, François-Xavier Turquet, Judith E. Houston, Rachel C. Evans School of Chemistry, Trinity College, The University of Dublin, Dublin 2, Ireland.

16:30 **Controllable synthesis and characteristics of mesoporous CoxN nanocubes for efficient oxygen evolution reaction** **V 8.40**
Bong Kyun Kang, Sung Hoon Kwag, Dae Ho Yoon
Sungkyunkwan University

16:30 **Thin Films of Chained Carbon on Metal Substrate: Synthesis and Raman Characterization** **V 8.41**
E.A. Buntov1, A.F. Zatsepin1, M.B. Guseva2, V.N. Rychkov1
1 Institute of Physics and Technology, Ural Federal University, Mira st., 19, Ekaterinburg, 620002, Russia 2 Faculty of Physics, Moscow State University, Moscow, 119991, Russia

16:30 **Spray-flame synthesis of nanoscale LaCoO3 perovskite catalyst** **V 8.42**
Steven Angel, Hartmut Wiggers, Christof Schulz
IVG, Institute for Combustion and Gas Dynamics ? Reactive Fluids CENIDE, Center for Nanointegration, University of Duisburg-Essen

16:30 **High-performance flexible thermoelectric generator based on carbon nanotube yarn** **V 8.43**
Jaeyoo Choi, Yeonsu Jung, Sang-Soo Lee, Chong Rae Park, Heesuk Kim
Jaeyoo Choi (Korea Institute of Science and Technology (KIST)), Yeonsu Jung (Seoul National University), Sang-Soo Lee (Korea Institute of Science and Technology (KIST)), Chong Rae Park (Seoul National University), Heesuk Kim (Korea Institute of Science and Technology (KIST))

16:30 **Synthesis, characterization and efficiency of PSF/MCM-41 membranes for CO2 removal** **V 8.44**
Marius Gheorghe Miricioiu (1,2), Violeta Niculescu (1), Gheorghe Nechifor (2)
(1) National R &D Institute for Cryogenics and Isotopic Technologies- ICSI Rm. Valcea, Romania, (2) Politehnica University of Bucharest, Faculty of Applied Chemistry and Materials Science, Romania

16:30 **Sensing properties of ZnO nanowalls grown ?in situ? on conductometric platforms** **V 8.45**
E. Bruno,? S. Mirabella,? V. Strano,? N. Donato*, S. G. Leonardi*, G. Neri*
? MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy *Department of Engineering, University of Messina, Contrada Di Dio, 98166 Messina, Italy

16:30 **Neutron Structure Analysis of Lithium-Cation Endohedral C60 Fullerene and Its Application to Energy Storage** **V 8.46**
Eunsang Kwon [1]*, Takeshi Matsukawa [2], Akinori Hoshikawa [2], Toru Ishigaki [2], Haruhiko Ogasawara [3], Tomoo Kamigak [4], Kazuhiko Kawachi [4], Yasuhiko Kasama [4], Fuminori Misaizu [1], Hiroshi Fukumura [5]
[1] Graduate School of Science, Tohoku University [2] Frontier Research Center for Applied Atomic Sciences, Ibaraki University [3] Graduate School of Pharmaceutical Sciences, Tohoku University [4] Idea International Co., Ltd. [5] National Institute of Technology, Sendai College

16:30 **Properties of silver bromide doped chalcogenide materials** **V 8.47**
Rayan Zaiter, Mohamad Kassem, Eugene Bychkov
ULCO, LPCA (EA 4493), F-59140 Dunkerque, France

16:30 **Single Wall Carbon Nanotubes (SWCNTs)-polycarbazole(PCz) based PH sensor** **V 8.48**
Bogdan-Florian Monea, Eusebiu Ilarian Ionete, Stefan Ionut Spiridon, Stanica Enache, Daniela Ion Ebrasu, Amalia Soare
National R&D Institute for Cryogenic and Isotopic Technologies ICSI Rm. Valcea, Romania

16:30 **Electrocatalytic reduction of carbon dioxide with alpha MnO2-based electrode materials** **V 8.49**
Yu-Ting Yang, Chiung-Fen Chang
Department of Environmental Science and Engineering, Tunghai University

16:30 **Magnetic properties of vertically-oriented Fe nanoparticles inserted into MWCNTs** **V 8.50**
F. Le Normand1, C. Speisser1, L. Matzuy2, D. Matsui2, I. Janowska3
1 : ICube, MaCEPV, 23 rue du Loess, 67037 Strasbourg France 2: Department of Physics, University Taras Shevchenko, Kyiv, Ukraina 3: ICPEES, ECPM, 25 rue Becquerel, 67087 Strasbourg Cedex 2, FRANCE

16:30 **Electrical Properties of Aluminum Atoms Transferred to the Gaphene Surface** **V 8.51**
Remzi Dağ a, Ahmet Burak Sarıgüney b, Adem Akdağ c, Mücahit Yılmaz d, Ahmet Coşkun b, Oğuz Doğan e
a Department of Nanoscience&Nanoengineering, Institute of Science, Necmettin Erbakan University, Konya, Turkey, b Department of Chemistry, A.Kelesoğlu Faculty of Education, Necmettin Erbakan University, Konya, Turkey, c Department of Nanoscience&Nanoengineering, Graduate School of Natural and Applied Sciences, Ataturk University, Erzurum, Turkey, d Department of Metallurgical and Material Science, S.A.C. Engineering Faculty, Necmettin Erbakan University, Seydisehir, Konya, e Department of Physics, A.Kelesoğlu Faculty of Education, Necmettin Erbakan University, Konya, Turkey

16:30 **Metal decorated MWCNTs-based chemiresistors for selective detection of hydrocarbon compounds** **V 8.52**
Elena Dilonardo (1), Marco Alvisi (2), Gennaro Cassano (2), Francesco Di Palo (3), Michele Penza (2)
(1) Università del Salento, Lecce, Italy. (2) Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Department for Sustainability - Lab Functional Materials and Technologies for Sustainable Applications - Brindisi, Italy. (3) ARPA, Bari, Puglia.

16:30 **Morphologies influence of Na0.5Ce0.5WO4 hierarchical assemblies of nanoparticles on the methane oxidation** **V 8.53**
Nadine DIRANY, Madjid ARAB
Université de TOULON - Institut Matériaux Microélectroniques et Nanosciences de Provence IM2NP UMR CNRS 7334. BP 20130 - Bat.R.017 -83130. LA GARDE. FRANCE

16:30 **Electrical detection of Hydrogen Sensors using Pt-gate AlGaN/GaN high electron mobility** **V 8.54**
Phd Student, DJELTI FAYSSAL Pr: A. OULD-ABBAS Pr, N.-E. CHABANE-SARI
Abou Bakr Belkaïd University, / Research Unit Materials and Renewable Energy (URMER), B.P. 119, Tlemcen, Algeria

16:30 **Carbon nanotubide-supported electrocatalysis** **V 8.55**
Nikolai Czech, King K. Hii, Klaus Hellgardt, Milo Shaffer
Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom, Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom, Department of Chemical Engineering, Imperial College London, South Kensington, London SW7 2AZ, United Kingdom, Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom

16:30 **Carbon nanotubes forest conformally coated with Al-doped Ni(OH)2 as flexible electrode for the oxygen evolution reaction** **V 8.56**
Francesco Malara, Sonia Carallo, Enzo Rotunno, Laura Lazzarini, Elpida Piperopoulos, Alberto Naldoni
F.M., A.N. CNR-Istituto di Scienze e Tecnologie Molecolari, Via Golgi 19, 20133 Milan, Italy S.C. Istituto di Nanotecnologia CNR-Nanotec, Polo di Nanotecnologia c/o Campus Ecotekne, Via Monteroni 73100 Lecce, Italy E.R., L.L. IMEM-CNR, Parco Area delle Scienze 37/A, I-43124 Parma, Italy E.P. Department of Engineering, University of Messina, 98166 Messina, Italy

16:30 **Functionalization of Graphene on Electrodeposited Cu: surface-enhanced Raman scattering** **V 8.57**
I. Fekas,S. Sarma,K. Filintoglou,N. Pliatsikas,E. Pavlidou,J. Arvanitidis,D. Christofilos,P. Patsalas
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece,Department of Mechanical Engineering, Indian Institute of Technology Guwahati, Guwahati, India,Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece,Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece,Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece,Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece,Chemical Engineering Department, Aristotle University of Thessaloniki, Thessaloniki, Greece,Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece

16:30 **A Three Dimensional Mn2O3/RuO2/Carbon Nanofiber Bifunctional Electrocatalyst for Oxygen Reduction and Evolution Reactions** **V 8.58**
Mohammad Fathi Tovini, Bhushan Patil, Cevriye Koz, Eda Yilmaz
Institute of Materials Science and Nanotechnology, National Nanotechnology Research Center (UNAM), Bilkent University, Ankara, Turkey 06800

16:30 **Stochastic dynamics based design for molecular actuators** **V 8.59**
Laura de Sousa Oliveira, P. Alex Greaney
University of California, Riverside

16:30 **Efficiency Enhancement of ZnO-based solar cell by using optimized metallic nanoparticles** **V 8.60**
Hichem Ferhati1, Fayçal Djeffal 1,2,* and Djemai Arar1
1LEA, Department of Electronics, University of Batna 2, Batna 05000, Algeria. 2LEPCM, University of Batna 1, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna2.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

16:30 **Reduced Graphene Oxide Based Nanoelectromechanical Resonator** **V 8.61**
Nikhil Patil, Dr. Soumya Dutta
Indian Institute of Technology Madras

16:30 **Transfer of Aluminum Atoms to Graphene via Electrochemical System** **V 8.62**
Ahmet Burak Sarıgüney a, Mücahit Yılmaz b, Adem Akdağ c, Ahmet Coşkun a
a Department of Chemistry, A.Kelesoğlu Faculty of Education, Necmettin Erbakan University, Meram, Konya, Turkey b Department of Metallurgical and Material Science, S.A.C. Engineering Faculty, Necmettin Erbakan University, Seydisehir, Konya c Department of Nanoscience&Nanoengineering, Graduate School of Natural and Applied Sciences, Ataturk University, Erzurum, Turkey

16:30 **Superparamagntic MnFe2O4 nanoparticles sythesized by coprecipitation route** **V 8.63**
A. Essyed 1,2*, M. A. Ait Kerroum 1,4, O. Mounkachi 3, R. Baati 2, D. Ihiawakrim 4, M. Hamedoun 3, A. Benyoussef 1,3, O. Ersen 4, and M. Benaissa 1*,
1: L.M.P.H.E, Department of physics, Faculty of Sciences, University Mohammed V, Rabat, Morocco , 2: Institut de Chimie et Procédés pour l'Énergie, l'Environnement et la Santé (ICPEES), UMR CNRS 7515 Strasbourg, France , 3: Institute of Nanomaterials and Nanotechnology, MASCIR, Rabat, Morocco , 4: Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), Strasbourg, France

16:30 **Structural characteristics of zinc iron oxide ZnFe2O4 nanoparticles synthesized by co-precipitation method** **V 8.64**
M. A. Ait Kerroum 1,2 *, A. Essyed 1,4, O. Mounkachi 3, D. Ihiawakrim 2, M. Hamedoun 3, A. Benyoussef 1,3, R. Baati 4, O. Ersen 2 and M. Benaissa 1 *.
1 L.M.P.H.E, Department of physics, Faculty of Sciences, University Mohammed V, Rabat, Morocco , 2 Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France , 3 Institute of Nanomaterials and Nanotechnology, MASCIR, Rabat, Morocco , 4 Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé, Strasbourg, France

16:30 **Spin-assembled reinforced composite membrane for proton exchange membrane fuel cells** **V 8.65**
Jin Young Kim
Fuel Cell Research Center, Korea Institute of Science and Technology

16:30 **EFFECTS OF ADDATOMS AND MOLECULES ON THE PROPERTIES OF 2D TOPOLOGICAL INSULATORS** **V 8.66**
Bahad?r Salmankurt, Hikmet Hakan Gürel
Sakarya University, Department of Physics, Sakarya, Turkey , Kocaeli University, Technology Faculty, Department of Information Systems Engineering, Kocaeli, Turkey

16:30 **THEORETICAL INVESTIGATION OF BIOSENSING PROPERTIES OF NEW TWO DIMENSIONAL MATERIALS** **V 8.67**
Bahadır Salmankurt, Hikmet Hakan Gürel
Sakarya University, Department of Physics, Sakarya, Turkey , Kocaeli University, Technology Faculty, Department of Information Systems Engineering, Kocaeli, Turkey

16:30 **Properties of ZnO Hierarchical Thin Films for Ordered Heterojunction Quantum Dot Solar Cells** **V 8.69**
P. Sanguino, J. Godinho, K. Sowri Babu, R. Schwarz
Departamento de Física and CeFEMA, Instituto Superior Técnico P-1049-001 Lisboa, Portugal

16:30 **N-doped carbon phase supported on silicon carbide for catalytic applications** **V 8.70**
Cuong Duong-Viet (a), Housseinou Ba (a), Jean-Mario Nhut (a), Yuefeng Liu (a), Lai Truong-Phuoc (a), Giulia Tuci (b), Giuliano Giambastiani (b), Cuong Pham-Huu (a)
(a) - Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé (ICPEES), ECPM, UMR 7515 du CNRS-Université de Strasbourg, 25 rue Becquerel, 67087 Strasbourg Cedex 02, France. (b)- Institute of Chemistry of OrganoMetallic Compounds, ICCOM-CNR and Consorzio INSTM, Via Madonna del Piano, 10 – 50019, Sesto F.no, Florence, Italy.

16:30 **A highly N-doped carbon phase** **V 8.71**
Housseinou Ba (a), Cuong Duong-Viet (a), Jean-Mario Nhut (a), Yuefeng Liu (c) Lai Truong-Phuoc (a), Giulia Tuci (b), Giuliano Giambastiani (b), Cuong Pham-Huu (a)
(a) Institut de Chimie et Procédés pour l?Energie, l?Environnement et la Santé (ICPEES), ECPM, UMR 7515 du CNRS-Université de Strasbourg, 25 rue Becquerel, 67087 Strasbourg Cedex 02, France. (b)Institute of Chemistry of OrganoMetallic Compounds, ICCOM-CNR and Consorzio INSTM, Via Madonna del Piano, 10 ? 50019, Sesto F.no, Florence, Italy.

16:30 **Metal Phthalocyanines on ultrathin alumina template** **V 8.72**
Fatema Mohamed1,2 , Maria peressi 1,3
1- Department of Physics, University of Trieste, Strada Costiera 11, Trieste, Italy 2- International center for theoretical physics(ICTP), Trieste, Italy 3- IOM-CNR, Trieste, Italy

16:30 **Effect of Alkali (Na+, K+, Cs+) Ions on Reaction Mechanism of CZTS Nano-particles Synthesis** **V 8.73**
Suresh Kumar, Mare Altosaar, Maarja Grossberg, Valdek Mikli
Department of Materials and Environmental Technologies, Tallinn University of Technology Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **Integration of Au-SnO2 thick film with power efficient CMOS MEMS substrate for acetone sensing** **V 8.74**
S. Santra1, A. De Luca2, P.K. Guha3, F. Udrea2, J. W. Gardner4, S. K. Ray1,5
1Department of Physics, Indian Institute of Technology, Kharagpur, 721302, India, 2 Engineering Department, University of Cambridge, Cambridge, CB3 0FA, UK, 3 E & ECE Department, Indian Institute of Technology, Kharagpur, 721302, India, 4 School of Engineering, University of Warwick, Coventry, CV4 7AL, UK, 5 S. N. Bose National Centre for Basic Sciences, JD Block, Sector-III, Salt Lake City, Kolkata - 700 106, India

16:30 **Nanogap-Rich Au Nanowire SERS Sensor for Ultrasensitive Telomerase Activity Detection: Application to Gastric and Breast Cancer** **V 8.75**
Hongki Kim†,Taejoon Kang‡,and Bongsoo Kim†
†Department of Chemistry, KAIST, Daejeon 34141, Korea ‡Hazards Monitoring Bionano Research Center, KRIBB, Daejeon 34141, Korea

16:30 **Investigation of focused ion beam (FIB) induced self-organized nanoripples on germanium (100) surface** **V 8.76**
Bhaveshkumar Kamaliya, Rakesh G. Mote, Jing Fu
Bhaveshkumar Kamaliya, IITB-Monash Research Academy, Indian Institute of Technology Bombay, Powai, Mumbai 400076, India, Rakesh G. Mote, Department of Mechanical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai 400076, India, Jing Fu, Department of Mechanical and Aerospace Engineering, Monash University, Clayton, VIC 3800, Australia

16:30 **Tailoring catalytic activity of hybrid platinum particles through lattice strain** **V 8.77**
E E Westsson, G J M Koper
Technical University of Delft

16:30 **Dynamic self-assembly of silica colloids with Janus micromotors** **V 8.78**
Dhruv P. Singh, Andrew G. Mark, Peer Fischer
Max Planck Institute for Intelligent Systems, Heisenbergstr. 3, 70569 Stuttgart, Germany

16:30 **Structural and magnetic evolution of mixed CE/seeded-grown multilayered Mn/Fe oxides** **V 8.79**
Sergio Lentijo Mozo, Efisio Zuddas, Alberto Casu, Andrea Falqui
Biological and Environmental Sciences and Engineering (BESE) Division, NABLA Lab, King Abdullah University of Science and Technology (KAUST), 23955-6900 Thuwal, Saudi Arabia

Nanomaterials by assembling : Nguyen TK Thanh - Benoit Pichon

08:30 **First Fluorescent Surface-Confined Supramolecular Self-Assembly on Graphene** **V 9.1**
Sylvain Le Liepvre, Ping Du, David Kreher, Fabrice Mathevet, Céline Fiorini, Ludovic Douillard, Fabrice Charra, and André-Jean Attias
Université Pierre et Marie Curie, IPCM, UMR 8232, 75005, Paris, France, CEA/SPEC, UMR 3680, CEA Saclay 91191 Gif-sur-Yvette, France

09:00 **Electrostatic self-assembly of hierarchical nanoparticle trimers and their response to optical and electron beam stimuli** **V 9.2**
Julian A. Lloyd, Soon Hock Ng, Amelia C. Y. Liu, Ye Zhu, Wei Chao, Toon Coenen, Joanne Etheridge, Daniel E. Gómez, Udo Bach
J. A. Lloyd, S. H. Ng, Y. Zhu, W. Chao, J. Etheridge and U. Bach: Department of Materials Science and Engineering, Monash University, Clayton, VIC, 3800, Australia, J. A. Lloyd, S. H. Ng, D. E. Gómez and U. Bach: Melbourne Centre for Nanofabrication, Clayton, VIC, 3168, Australia, A. C. Y. Liu and J. Etheridge: Monash Centre for Electron Microscopy, Monash University, Clayton, VIC, 3800, Australia, A. C. Y. Liu: School of Physics, Monash University, Clayton, VIC, 3800, Australia, T. Coenen: DELMIC BV, 2629 JA, Delft, The Netherlands, U. Bach: Commonwealth Scientific and Research Organisation Manufacturing, Clayton, VIC, 3168, Australia, D. E. Gómez: School of Applied Science, RMIT University, Melbourne, VIC, 3000, Australia

09:15 **Aligned Assembly of Nanowires on Flexible Membranes and Cantilevers by Contact Printing** **V 9.3**
M. Nilsen, A. Behroudj, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

09:30 **Quantum Dot Assembly via Critical Casimir Forces** **V 9.4**
E. Marino (1), T.E: Kodger (1,2), R. Crisp (3). D.M. Balazs (4), A. Houtepen (3), M.A. Loi (4), and P. Schall (1)
(1) Van der Waals – Zeeman Institute, Universiteit van Amsterdam, Science Park 904 1098XH, Amsterdam, The Netherlands, (2) Agrotechnology and Food Sciences, Wageningen University and Research, Stippeneng 4, 6708 WE, Wageningen, The Netherlands, (3) Opto-electronic Materials, Delft University of Technology, Faculty of Applied Sciences Chemical Engineering, Van der Maasweg 9, 2629 HZ Delft, The Netherlands, (4) Faculty of Mathematics and Natural Sciences, Photophysics and OptoElectronics - Zernike Institute for Advanced Materials, Nijenborgh 4, 9747 AG Groningen, The Netherlands.

09:45 **Supramolecular hybrid nanowire based on conjugated polymer assembly** **V 9.5**
Seon-Mi Jin1, Jinwoo Nam1, Inhye Kim1, Jung Ah Lim2, Eunji Lee1*
1Graduate School of Analytical Science and Technology, Chungnam National University, Daejeon 605-764, Republic of Korea, 2Center for Opto-Electronic Materials and Devices, Post-Silicon Semiconductor Institute, Korea Institute of Science and Technology (KIST), Seoul 136-791, Republic of Korea

10:00 **Coffee break**

10:30 **Magnetic nanoparticle assemblies** **V 9.6**
Benoit P. Pichon, Delphine Toulemon, Mathias Dolci
Institut de Physique et de Chimie des Matériaux de Strasbourg

11:00 **Block copolymer directed assembly of nanocrystals into arbitary morphologies** **V 9.7**
Gary Ong, Delia J. Milliron
University of California, Berkeley, University of Texas, Austin

11:15 **Synthesis of functional silanes and their assembly in smart click-reactive nanofilms for biotechnology applications** **V 9.8**
Y. Mousli, T. Buffeteau, L. Vellutini, E. Genin
University of Bordeaux, ISM UMR 5255 CNRS, F-33400 Talence, France

11:30 **Self-Assembled Monolayer Formation of Organophosphonates in Aluminum Oxide Coated Silicon Nitride Nanopores** **V 9.9**
Quoc Hung Nguyen (1), Christopher Mandla (1), Werner Emer (1), Feng Yu (2,3), Andrey Bakin (2,3), Marc Tornow (1)
(1) Department of Molecular Electronics, TU München, Germany, (2) Institute of Semiconductor Technology, TU Braunschweig, Germany, (3) Laboratory for Emerging Nanometrology (LENA), TU Braunschweig, Germany

11:45 **The Role of Particle Size and Charge on Self-Assembly in an Enzyme-Responsive Particle Hydrogel Composite with Structural Color** **V 9.10**
Leopoldo Torres Jr, John L. Daristotle, and Peter Kofinas
Fischell Department of Bioengineering, University of Maryland College Park

12:00 **Lunch**

Hybrid materials for electronic and photonic applications : Michel Wong Chi Man - Sergio Moya

13:30 **Organic-Inorganic Hybrid Materials Containing Quantum Dots for Optoelectronic and Magnetic Photonic Applications** **V 10.1**
Juhyoung Jung, Xue-Cheng Teng, Sung Hyun Kim, Kwang-Sup Lee
Department of Advanced Materials, Hannam University Jeonmin-Dong 461-6, Yuseong-Gu, Daejeon 305-811, South Korea

14:00 **Nanostructured transparent conducting oxide layers as versatile current collectors for bioelectronics** **V 10.2**
Kristina Peters, David Sarauli, Dina Fattakhova-Rohlfing
Ludwig-Maximilians-Universität (LMU), Department of Chemistry and Center for NanoScience (CeNS), Butenandtstr. 5-13, 81377 Munich, Germany

14:15 **NaYF4:Er3+,Yb3+/SiO2 Core/Shell Nanocrystals for Luminescence Thermometry up to 900 K** **V 10.3**
Robin G. Geitenbeek, P. Tim Prins, Wiebke Albrecht, Alfons van Blaaderen, Bert M. Weckhuysen, and Andries Meijerink
Robin Geitenbeek, P. Tim Prins, Bert M. Weckhuysen, Andries Meijerink, Department of Chemistry, Debye Institute of Nanomaterials Science, Utrecht University Wiebke Albrecht, Alfons van Blaaderen, Department of Physics, Debye Institute of Nanomaterials Science, Utrecht University

14:30 **Hybrid nanocomposites based on electroactive hydrogels and cellulose nanocrystals for high-sensitivity underwater actuation** **V 10.4**
Lorenzo Migliorini, Tommaso Santaniello, Erica Locatelli, Ilaria Monaco, Yunsong Yan, Cristina Lenardi, Mauro Comes Franchini, Paolo Milani
Lorenzo Migliorini, Tommaso Santaniello, Yunsong Yan, Cristina Lenardi, Paolo Milani, Interdisciplinary Centre for Nanostructured Materials and Interfaces (CIMaINa), Physics Department, University of Milan, Via Celoria 16, 20133, Milan, Italy Erica Locatelli, Ilaria Monaco, Mauro Comes Franchini, «Toso Montanari» Industrial Chemistry Department, University of Bologna, Viale Risorgimento 4, Bologna, Italy

14:45 **RGO/Ni2O3 composites as a multifunctional material for efficient water quality monitoring** **V 10.5**
Anurag Kar, Sayan Dey, Sumita Santra, Samit K. Ray, Prasanta K. Guha
Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, Department of Physics, Indian Institute of Technology, Kharagpur, Department of Physics, Indian Institute of Technology, Kharagpur, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur

15:00 **Plasmonic Nanohole Films as Sources of Heat** **V 10.6**
Daniel Tordera, Dan Zhao, Anton V. Volkov, Igor V. Zozoulenko, Xavier Crispin, Magnus P. Jonsson
Laboratory of Organic Electronics, Linköping University, SE-601 74 Norrköping, Sweden

15:15 **Permanent Excimer Superstructures By Supramolecular Networking Of Metal Quantum Clusters** **V 10.7**
Beatriz Santiago-Gonzalez,1 Angelo Monguzzi,1 Jon Mikel Azpiroz,2,3 Mirko Prato,4 Silvia Erratico,5 Marcello Campione,6 Roberto Lorenzi,1 Jacopo Pedrini,1 Carlo Santambrogio,7 Yvan Torrente,5 Filippo De Angelis,2,4 Francesco Meinardi,1 Sergio Brovelli1
1 Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via Roberto Cozzi 55, I-20125 Milano, Italy 2 Computational Laboratory for Hybrid and Organic Photovoltaics, National Research Council–Institute of Molecular Science and Technologies (CNR-ISTM), Via Elce di Sotto 8, 06123 Perugia, Italy. 3 Kimika Fakultatea, Euskal Herriko Unibertsitatea (UPV/EHU), and Donostia International Physics Center, 20080 Donostia, Euskadi, Spain. 4Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy. 5Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti, Università degli Studi di Milano, Fondazione IRCCS (Istituto di Ricovero e Cura a CarattereScientifico) Cá Granda Ospedale Maggiore Policlinico, Centro Dino Ferrari, Via Francesco Sforza 35, 20122 Milano, Italy. 6Dipartimento di Scienze dell'Ambiente e del Territorio e di Scienze della Terra, Università degli Studi Milano-Bicocca, Piazza della Scienza, 20125 Milano, Italy 7Dipartimento di Biotecnologie e Bioscienze, Università degli Studi Milano-Bicocca, Piazza della Scienza, 2, 20126 Milano, Italy.

15:30 **Synthesis and Surface Chemistry of Cu Nanocrystals for Printed Electronics** **V 10.8**
Arnau Oliva Puigdomènech, Jonathan de Roo, José Martins, Zeger Hens
Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Gent, Belgium SIM vzw, Technologiepark 935, BE-9052 Zwijnaarde, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Gent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Gent, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Gent, Belgium, NMR and Structural Analysis Unit, Ghent University, Krijgslaan 281-S4bis, 9000 Gent, Belgium, Physics and Chemistry of Nanostructures, Ghent University, Krijgslaan 281-S3, 9000 Gent, Belgium Center for Nano and Biophotonics, Ghent University, 9000 Gent, Belgium,

15:45 **Nanoscale welding of Ni-NWs: From junction to mesh fabrication** **V 10.9**
Honey S., Naseem S., Ishaq A., Maaza M., Kennedy J.
1. Centre of Excellence in Solid State Physics, University of Punjab, QAC, Lahore, Pakistan, 2. UNESCO-UNISA Africa Chair in Nanosciences/Nanotechnology, College of Graduate Studies, University of South Africa, Muckleneuk ridge, P.O. Box 392, Pretoria-South Africa, 3. Nanosciences African Network (NANOAFNET), iThemba LABS-National Research Foundation, 1 Old Faure road, Somerset West 7129, P.O. Box 722, Somerset West, Western Cape Province, South Africa, 1. Centre of Excellence in Solid State Physics, University of Punjab, QAC, Lahore, Pakistan, 1. National Center for Physics, Quaid-i-Azam University, Islamabad 44000, Pakistan 2. UNESCO-UNISA Africa Chair in Nanosciences/Nanotechnology, College of Graduate Studies, University of South Africa, Muckleneuk ridge, P.O. Box 392, Pretoria-South Africa, 3. Nanosciences African Network (NANOAFNET), iThemba LABS-National Research Foundation, 1 Old Faure road, Somerset West 7129, P.O. Box 722, Somerset West, Western Cape Province, South Africa , 1. UNESCO-UNISA Africa Chair in Nanosciences/Nanotechnology, College of Graduate Studies, University of South Africa, Muckleneuk ridge, P.O. Box 392, Pretoria-South Africa, 2. Nanosciences African Network (NANOAFNET), iThemba LABS-National Research Foundation, 1 Old Faure road, Somerset West 7129, P.O. Box 722, Somerset West, Western Cape Province, South Africa, 1. GNS Science, P.O. Box 31312, Lower Hutt, New Zealand

16:00 **Coffee break**

16:15 **Plenary Session**

Coupling induced by assembling : Kwang-Sup Lee - Peter Kofinas

08:30 **Tailoring plasmonic coupling in hierarchical assemblies** **V 11.1**
Andreas Fery, Tobias König, Christian Kuttner, Munish Chanana, Anja Steiner, Roland Höller, Moritz Tebbe, Christoph Hanske, Martin Mayer, Patrick Probst
Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfaed), Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfaed), Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfaed), Institute of Building Materials, ETH Zürich, Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfaed), Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfaed), McGill University Toronto, CIC Biomagune San Sebastian, Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfaed), Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfaed),

09:00 **Synthesis of tunable plasmonic nanostructures by fast laser processing: application to surface enhanced Raman scattering** **V 11.2**
N. Pliatsikas, J. Arvanitidis, D. Christofilos, N. Kalfagiannis, A. Kagkoura, K. Sefiane, V. Koutsos, E. Pavlidou, D. Koutsogeorgis, P. Patsalas
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece, Department of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, United Kingdom, Institute for Materials and Processes, School of Engineering, The University of Edinburgh, King's Buildings, Edinburgh, EH9 3FB, United Kingdom, Institute for Materials and Processes, School of Engineering, The University of Edinburgh, King's Buildings, Edinburgh, EH9 3FB, United Kingdom, Institute for Materials and Processes, School of Engineering, The University of Edinburgh, King's Buildings, Edinburgh, EH9 3FB, United Kingdom, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, United Kingdom, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece

09:15 **Hybrid nanocomposite Fe3-xO4/PBA/ZnO with synergistic photo optical and magnetic properties** **V 11.3**
Brandon Azeredo 1, Anne Carton 1, Mathieu Gallart 1, Spyridon Zafairatos 2, Benoit Pichon 1
1 Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67000 Strasbourg, France, 2 Université de Strasbourg, CNRS, Institut de Chimie et Procédés pour l?Energie, l?Environnement et la Santé, UMR 7515, F-67000 Strasbourg, France

09:30 **Solution processing of hybrid ZnO quantum dots assembled in mesosphere for light emitting diode applications** **V 11.4**
N. LEBAIL, T. CORNIER, A. APOSTOLUK, B. MASENELLI,G. CHADEYRON, A. POTDEVIN, S. DANIELE
Université de Lyon, IRCELyon, CNRS, UMR 5256, F-69626 Villeurbanne, France Université de Lyon, INL, CNRS, UMR 5270, INSA Lyon, F-69621 Villeurbanne, France Institut de Chimie de Clermont-Ferrand, campus des Cézeaux, Aubière, France Lotus Synthesis SAS , 69100 Villeurbanne, France

09:45 **Tailoring electronic properties of low-dimensional P-based systems using phosphorene reactivity** **V 11.5**
Oleksandr I. Malyi, Kostiantyn V. Sopiha, Claudia Draxl, Clas Persson
Department of Physics/Centre for Materials Science and Nanotechnology, University of Oslo, P. O. Box 1048 Blindern, NO-0316 Oslo, Norway Engineering Product Development, Singapore University of Technology and Design, 8 Somapah Road, 487372 Singapore, Singapore Physics Department and IRIS Adlershof, Humboldt-Universität zu Berlin, Zum Groβen Windkanal 6, D-12489 Berlin, Germany

10:00 **Coffee break**

Design of nanomaterials : Bao-Lian Su - Peter Kofinas

10:30 **Stimuli-responsive hybrid silica-based materials** **V 12.1**
Michel WONG CHI MAN
Laboratoire AM2N - Institut Charles Gerhardt Montpellier UMR5253 CNRS-ENSCM-UM 8 rue de l&#8217,école normale, 34296 Montpellier CEDEX 5, France

11:00 **Encapsulation of magnetic iron oxide nanoparticles inside carbon nanotubes for biomedical applications** **V 12.2**
Van der Schueren B., Mertz D., Vollin O., Pham Huu C., Bégin-Colin S., Bégin D.
CNRS, Université de Strasbourg

11:15 **Pulsed Laser Ablation in Liquid: from the processes involved to nanostructured material production** **V 12.3**
A. Santagata (1), A. Guarnaccio (1), A. De Bonis (2), R. Teghil (2), A. Dell'Aglio (3), A. De Giacomo (3,4)
(1) CNR-ISM, FLASH-IT, Tito Scalo Unit, Zona Ind. – 85050 Tito Scalo (PZ) – ITALY (2) Dipartimento di Scienze, Università della Basilicata, Via dell'Ateneo Lucano 10 – 85100 Potenza – ITALY (3) CNR-Nanotec, Bari, Via Amendola 122/D, 70126 Bari – ITALY (4) Università di Bari, Dipartimento di Chimica, Via Orabona 4, 70125 Bari – ITALY

11:30 **Organo-metallic hybrid perovskite for oxygen sensing** **V 12.4**
M.-A. Stoeckel, M. Gobbi, S. Bonacchi, F. Liscio, L. Ferlauto, E. Orgiu, P. Samorì
M.-A. Stoeckel, M. Gobbi, S. Bonacchi,L. Ferlauto, E. Orgiu, P. Samorì, Institut de Science et d'Ingénierie Supramoléculaires (I.S.I.S.), 8 allée Gaspard Monge, 67083, Strasbourg, France F. Liscio, CNR - IMM Sezione di Bologna Via P. Gobetti 101 40129 Bologna Italy 3INRS-Centre Énergie Matériaux Télécommunications, 1650 Blv. Lionel-Boulet, J3X 1S2 Varennes (Québec) E. Orgiu, INRS-Centre Énergie Matériaux Télécommunications, 1650 Blv. Lionel-Boulet, J3X 1S2 Varennes (Québec)

11:45 **Effect of Surfactant Tailoring on Photo-thermal Therapy Nanoparticle Photo-thermal Conversion Efficiencies** **V 12.5**
Yu Lin Lee, Theoni K. Georgiou
Yu Lin Lee - Imperial College London Department of Chemistry, Theoni K. Georgiou - Imperial College London Department of Materials

12:00 **Lunch**

Hierarchical materials and sensor elaboration : Cuong Pham Huu - Sergio Moya

13:30 **Bio-Inspired Hierarchical Murray Materials for Unprecedented Mass Transfer and Activity** **V 13.1**
Bao-Lian Su
1State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Loushi Road 122, Wuhan 430070, China. 2Laboratory of Inorganic Materials Chemistry, University of Namur, 61 rue de Bruxelles, B-5000, Namur, Belgium.

14:00 **Tunable Conductive Nanomesh-based Pressure Sensors with High Sensitivity and Wide Operation Range for Wearable Health Monitoring** **V 13.2**
Hochan Chang, Sungwoong Kim, Sumin Jin, Seung-Woo Lee, Ki-Young Lee, and Hyunjung Yi*
Affiliations: H. Chang, S. Kim, S. Jin, Dr. S.-W Lee , Dr. K.-Y. Lee, and Dr. H. Yi, Post-Silicon Semiconductor Institute, Korea Institute of Science and Technology, Seoul 02792, Korea, *E-mail: hjungyi@kist.re.kr

14:15 **Colloidal Nanoparticles for Phase-Change Memory Applications** **V 13.3**
Maksym Yarema, Olesya Yarema, Sebastian Volk, Vanessa Wood
Laboratory for Nanoelectronics, Department of Information Technology and Electrical Engineering, ETH Zurich, CH-8092 Zurich, Switzerland

14:30 **Functionalized Biodegradable Polymer Surgical Sealant for Bowel Anastomoses** **V 13.4**
John L. Daristotle, Aristotelis Zografos, Shadden Zaki, Adam M. Behrens, Priya Srinivasan, Anthony D. Sandler, Peter Kofinas
John L. Daristotle, Aristotelis Zografos, Shadden Zaki, Adam M. Behrens, Peter Kofinas, Fischell Department of Bioengineering, University of Maryland, College Park Priya Srinivasan, Anthony D. Sandler, Sheikh Zayed Institute for Pediatric Surgical Innovation, Children's National Medical Center

15:00 **Transparent conductive thin films of oriented silver nanowires** **V 13.5**
V. Lemaire, M. Pauly, G. Decher,
Université de Strasbourg, CNRS, Institut Charles Sadron, F-67000 Strasbourg, France

15:15 **Fabrication of Light Responsive Anisotropic Gold Nanocrystals Passivated by Photochromic Thiols** **V 13.6**
Agostino Galanti,[1] Björn Zyska,[2] Stefan Hecht[2] and Paolo Samorì[1]
[1] Université de Strasbourg, CNRS, ISIS, F-67000 Strasbourg, France [2] Department of Chemistry & IRIS Adlershof, Humboldt-Universität zu Berlin, Brook-Taylor-Strasse 2, 12489 Berlin, Germany

15:30 **Enhanced Humidity Sensing by ZnO/MoS2 based Thin Film** **V 13.7**
Debasree Burman, Sumita Santra, Prasanta Kumar Guha
Department of Electronics and Electrical Communication Engineering , Indian Institute of Technology, Kharagpur, W. B. 721 302, India, Department of Physics, Indian Institute of Technology, Kharagpur, W. B. 721 302, India, Department of Electronics and Electrical Communication Engineering , Indian Institute of Technology, Kharagpur, W. B. 721 302, India,

15:45 **ZnO Nanowires for Hydrogen Isotopes Detection** **V 13.8**
A.Marcu (1) , C.Viespe (1) , B.Butoi (1) , D.Paul (1) , B.Calin (1), L.Avotina (1,2) and C.Lungu (1)
National Institute for Laser Plasma and Radiation Physics, Atomistilor 409, 077125, Bucharest-Romania, Institute of Chemical Physics, University of Latvia, Jelgavas str. 1, LV 1004, Riga, Latvia

16:00 **Coffee break**

Poster Session : Sergio Moya - Sylvie Begin

16:30 **Ultrathin Pd nanosheets coated with submonolayered Ru for enhanced catalytic performance** **V 14.1**
Ye Liu, Zhicheng Zhang, and Hua Zhang
School of Materials Science and Engineering, Nanyang Technological University, Singapore

16:30 **Structural and thermal properties of HDPE filled with graphene nanoparticles of different diameter size** **V 14.2**
E. Tarani1, N. Pliatsikas1, Th. Kyratsi2, E. K. Polychroniadis1, D.N. Bikiaris3, K. Chrissafis1, G.Vourlias1
1Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Department of Mechanical and Manufacturing Engineering, University of Cyprus, 1678 Nicosia, Cyprus, 3Department of Chemistry, Laboratory of Polymer Chemistry and Technology, Aristotle University of Thessaloniki, 54124 Greece

16:30 **Surface-driven Na-ion storage devices based on nanostructured pyropolymers** **V 14.3**
Na Rae Kim, Hyeon Ji Yoon, Jun Ho Choe, Hong Joo An, Young Soo Yun*, Hyoung-Joon Jin*
Na Rae Kim,Hyeon Ji Yoon,Jun Ho Choe,Hong Joo An,Hyoung-Joon Jin - Department of Polymer Science and Engineering, Inha University Young Soo Yun - Department of Chemical Engineering, Kangwon National University

16:30 **Kinetic Monte Carlo Simulation Study of Epitaxial Growth of Graphene on Copper Surfaces** **V 14.4**
Chen Shuai, Zhang Yong-Wei
Institute of High Performance Computing, A*STAR, 138632 Singapore

16:30 **Stability of Small, Colloidal Platinum Nanoparticles in Hydrogenation Reactions** **V 14.5**
Martin Tschurl, Patricia Wand, Ueli Heiz, Mirza Cokoja
Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Inorganic Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich

16:30 **CVD growth of graphene on Ni/SiO2/Si: effect of annealing conditions** **V 14.6**
F. Akhtar 1, G. Lupina1, P. Zaumseil1, S. Schulze1, A. Wolff 1, T. Schroeder 1, 2 and M. Lukosius1
1IHP, Im Technologiepark 25, 15236 Frankfurt (Oder), Germany, 2 BTU Cottbus-Senftenberg, Konrad-Zuse Straße 1, 03046 Cottbus, Germany

16:30 **Development of 'thread transistors' based on carbon-nanotube-composite threads and aiming to construct 'tread circuits'** **V 14.7**
Hayato Kitamura1, Hiroyuki Shimizu2, Katsuaki Ishii2, Takahide Oya1
1Yokohama National Univ., Japan, 2Textile Research Institute of Gunma, Japan

16:30 **Uniformly-coated superparamagnetic nanoparticles for triggered enhanced drug release from alginate hydrogels** **V 14.8**
Alexandra Teleki, Florian L. Haufe, Ann M. Hirt, Sotiris E. Pratsinis, Georgios A. Sotiriou
Particle Technology Laboratory, Institute of Process Engineering, Department of Mechanical and Process Engineering, ETH Zurich, 8092 Zurich, Switzerland, Institute of Geophysics, Department of Earth Sciences, ETH Zurich, 8092 Zurich, Switzerland, Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, 17177 Stockholm, Sweden

16:30 **Evaluation of metal catalysts for growth of nanocrystalline graphene for gas sensing** **V 14.9**
Dennis Noll, Udo Schwalke
Technische Universität Darmstadt, Technische Universität Darmstadt

16:30 **Fabrication of 2D Composite Photonic Crystal Structure on Air-Water Interface** **V 14.10**
Myeongseok Jang, Wonmok Lee
Department of Chemistry, University of Sejong, 209 Neungdong-ro, Gwangjin-gu, Seoul, Republic of Korea (zipcode : 143-747)

16:30 **Halide perovskite heteroepitaxy: bond formation and carrier confinement at the PbS - CsPbBr3 interface** **V 14.11**
Young-Kwang Jung, Keith T. Butler, Aron Walsh
Yonsei University, University of Bath, Imperial College London & Yonsei University

16:30 **Green emitting magneto-luminescent iron-oxide/ZnS coated by codoped lanthanum fluoride nanomaterials** **V 14.12**
Navadeep Shrivastava, L. U. Khan, Z U. Khan, J. M. Vargas, O. Moscoso-Londoño, Carlos Ospina, H. F. Brito, Yasir Javed, M. C. F. C. Felinto, A. S. Menezes, Marcelo Knobel, S. K. Sharma
Department of Physics, Federal University of Maranhão, Av. dos Portugueses, 1966 - Bacanga, São Luís - MA, 65080-805, Brazil. Department of Fundamental Chemistry, Institute of Chemistry, University of São Paulo, Av. Prof. Lineu Prestes, 748, 05508-000, São Paulo-SP, Brazil. Department of Immunology, Institute of Biomedical Sciences-IV, University of São Paulo, Av. Prof. Lineu Prestes, 1730, 05508-000 São Paulo-SP, Brazil. Bariloche Atomic Center (CNEA), Balseiro Institute (U. N. Cuyo) and CONICET, 8400, San Carlos de Bariloche, Río Negro, Argentina. Institute of Physics "Gleb Wataghin", State University of Campinas (UNICAMP), 13083-859, Campinas-SP, Brazil. Brazilian Nanotechnology National Laboratory (LNNano–CNPEM), Rua Giuseppe Máximo Scolfaro 10000, 13083-100, Campinas, São Paulo, Brazil. Department of Physics, University of Agriculture, Faisalabad, Pakistan. Nuclear and Energy Research Institute - IPEN, University of Sao Paulo , Av. Prof. Lineu Prestes, 2242 - SP, 05508-000 São Paulo-SP, Brazil.

16:30 **Centrifuged metal-doped carbon xerogels for fuel cell applications** **V 14.13**
Alexandra M.I. Trefilov, Laurentiu Popovici, Adriana E. Balan, Athanasios Tiliakos, Ioan Stamatin
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, 405 Atomistilor str., Bucharest-Magurele, 077125, Romania

16:30 **Study of Pd–PANI/CNT conducting mixture for a selective gas sensor at room temperature** **V 14.14**
Stefan-Ionut SPIRIDON (1), Eusebiu Ilarian IONETE (1), Bogdan Florian MONEA (1), Violeta Carolina NICULESCU (1), Sonia DEGERATU (2)
1) National R&D Institute for Cryogenics and Isotopic Technologies – ICIT Rm.Valcea, Uzinei Str. RM Valcea, No. 4, 240050, Valcea, Romania. (2) University of Craiova, Faculty of Electrical Engineering, Decebal Blvd, No.107, 200440, Craiova, Romania.

16:30 **Preparation of Monolithic Porous Carbon Structure from Resorcinol-Formaldehyde** **V 14.15**
Min Choi, Hengju Yoon, Tae-Ho Yoon
School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST)

16:30 **Ultrahigh field emission current density of carbon nanotube array on tungsten needle** **V 14.16**
Quan Zhang, Xi-juan Wang, Xiao-lu Yan, Peng Meng, Guo-an Cheng, Rui-ting Zheng, Xiao-ling Wu
College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, China

16:30 **Bur-like iron oxide nanocapsules for the inorganic and organic pollutant removal** **V 14.17**
Ye-Jin Jin,1,2 Hyokyung Jeon,1 Ji Sun Kim,1,2 Ha-Jin Lee1,2*
1. Western Seoul Center, Korea Basic Science Institute, Seoul 03759, Korea 2. Dept. of Chemistry and Nanoscience, Ewha Womans University, Seoul 03760, Korea

16:30 **Rational Design of Nanocarbon- Nanoparticles Heterostructures for Catalytic Reduction of 4-nitrophenol to 4-aminophenol** **V 14.18**
Yu-Lun Yeh, Dean A. Martinez, Wei-Ting Li, Chih-Yi Fang and Wei-Hung Chiang*
National Taiwan University of Science and Technology

16:30 **Microplasma-assisted Fabrication of Graphene-Quantum-Dot/Noble-NP heterostructures for Biosensing and Catalysis** **V 14.19**
Chih-Yi Fang, Kai-Sheng Lin and Wei-Hung Chiang*
National Taiwan University of Science and Technology

16:30 **Texturing In-Situ: N, S-Enriched Hierarchically Porous Carbon as Highly Active Reversible Oxygen Electrocatalyst** **V 14.20**
Zengxia Pei, Chunyi Zhi
Department of Physics and Materials Materials Science, City University of Hong Kong, Hong Kong, China

16:30 **High performance humidity sensor based on rGO/MoS2 hybrid composites** **V 14.21**
SeoYun Park, Yeon Hoo Kim, and Ho Won Jang
Department of Materials Science and Engineering, Seoul National University

16:30 **Single walled carbon nanotubes-Cesium as gas sensors** **V 14.22**
Eusebiu Ilarian Ionete, Stefan Ionut Spiridon, Bogdan Florian Monea, Daniela Ion Ebrasu, Stanica Enache, Violeta Carolina Niculescu
National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Valcea, Romania

16:30 **Transition metal-doped nickel oxide-based nanocatalysts for electrochemical water oxidation** **V 14.23**
Daniel Böhm, Christopher Kutz, Dina Fattakhova-Rohlfing
Department of Chemistry and Center for Nanoscience (CeNS), Ludwig-Maximilians-Universität München (LMU)

16:30 **Nanostructured Al-based nanocomposites reinforced by nanoribbons. Comprehensive theoretical investigation.** **V 14.24**
D.G. Kvashnin, M. Ghorbani-Asl, D.V. Shtansky, D. Golberg, A. Krasheninnikov, P. B. Sorokin
National University of Science and Technology MISiS, Leninskiy prospect 4, Moscow, Russian Federation, Emanuel Institute of Biochemical Physics RAS, 4 Kosigina st., Moscow, Russian Federation, Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, 01314 Dresden, Germany, International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Japan, Graduate School of Pure and Applied Sciences, Tennodai 1, University of Tsukuba, Tsukuba, Japan, Department of Applied Physics, Aalto University, P.O. Box 11100, FI-00076 Aalto, Finland, Moscow Institute of Physics and Technology, 9 Institutsky lane, Dolgoprudny, Russian Federation, Technological Institute for Superhard and Novel Carbon Materials, 7a Centralnaya Street, Troitsk, Moscow, Russian Federation,

16:30 **The alignment and selective dispersion of carbon nanotubes within polymeric liquid phases and thin film** **V 14.25**
Ching-Feng Wu, Sin-Ru Huang, Jrjeng Ruan*
National Cheng Kung University ,Department of Materials Science and Engineering, No.1, University Road, Tainan City 701, Taiwan (R.O.C.)

16:30 **Facile Synthesis of Highly Branched Palladium Nanocatalysts on Graphene as an Efficient Electrocatalysts for Li-Oxygen Batteries** **V 14.26**
Seong Ji Ye, Do Youb Kim, Dong Wook Kim, Yongku Kang, and O Ok Park*
Seong Ji Ye, Korea Advanced Institute of Science and Technology (KAIST) Do Youb Kim, Korea Research Institute of Chemical Technology (KRICT) Dong Wook Kim, Korea Research Institute of Chemical Technology (KRICT) Yongku Kang, Korea Research Institute of Chemical Technology (KRICT) O Ok Park, Korea Advanced Institute of Science and Technology (KAIST)

16:30 **Upconversion behavior of Aurivillius phase perovskite type layered oxides** **V 14.27**
Mohammadreza Khodabakhsh, Ugur Unal
Department of Materials Science and Engineering, Graduate School of Science and Engineering,Koc University, Rumelifeneri yolu, 34450 Sariyer Istanbul, Turkey, Koc University Chemistry Department, Surface Science and Technology Center, Rumelifeneri yolu, 34450Sariyer, Istanbul, Turkey

16:30 **Tailoring Advanced Sb-based Nanostructures towards Promising Energy Application** **V 14.28**
Wen Luo, Jean-Jacques Gaumet, Liqiang Mai
Wen Luo: 1 State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, 430070 Wuhan, China, 2 Laboratoire de Chimie et Physique: Approche Multi-échelles des Milieux Complexes, Institut Jean Barriol, Université de Lorraine, 57070 Metz, France Jean-Jacques Gaumet: Laboratoire de Chimie et Physique: Approche Multi-échelles des Milieux Complexes, Institut Jean Barriol, Université de Lorraine, 57070 Metz, France Liqiang Mai: State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, 430070 Wuhan, China

16:30 **A Combined Optoelectronic and Electrochemical Study of Nitrogenated Carbon Electrodes** **V 14.29**
James A. Behan, Serban N. Stamatin, Md. Khairul Hoque, Guido Ciapetti, Federico Zen, Letica Esteban-Tejeda and Paula E. Colavita
School of Chemistry, CRANN and AMBER Research Centres, Trinity College Dublin, College Green, Dublin 2, Ireland.

16:30 **Process development for novel low temperature plasma synthesized nanocarbon–based biosensors** **V 14.30**
E. Kovacevic (1), C. Pattyn (1), S. Hussain (1), J. Berndt (1), C. Boulmer-Leborgne (1), A. Stolz (1), A. L. Thomann (1), N. Semmar (1), O. Aubry (1), A.A. El Mel (2), P.Y. Tessier (2), L. Donero (2,3), L. Le Brizoual (3), F. Le Bihan (3), O. De Sagazan (3), B. Le Borgne (3), S.Rose (4), V. Quesniaux (4), M. Boujtita (5)
1 GREMI Université d'Orléans – CNRS 14 rue d'Issoudun 45067 Orléans cedex 2 FRANCE 2 IMN Université de Nantes - CNRS, 2 rue de la Houssinière, 44322 Nantes Cedex 3, FRANCE 3 IETR Université de Rennes – CNRS Campus de Beaulieu 35042 Rennes cedex FRANCE 4 INEM, CNRS, rue de la recherché scientifique, 45100 Orléans FRANCE 5 CESAM Université de Nantes - CNRS, 2, rue de la Houssinière, 44322 Nantes Cedex 3 FRANCE

16:30 **Molecular adsorption and dissociation on ultraclean ferroelectric surfaces** **V 14.31**
Liviu C. T?nase (1,2), Nicoleta G. Apostol(1), Laura E. Abramiuc(1,2), Lumini?a Hrib(1), Lucian Trupin?(1), Lucian Pintilie(1), Cristian M. Teodorescu(1)
(1) National Institute of Materials Physics, Atomi?tilor 405A, 077125 M?gurele ? Ilfov, Romania (2) University of Bucharest, Faculty of Physics, Atomi?tilor 405, 077125 M?gurele-Ilfov, Romania.

16:30 **Embedding nanocrystals and nanoresonators into a hierarchical metamaterial for improved photovoltaics** **V 14.32**
Antonio Capretti, Arnon Lesage and Tom Gregorkiewicz
University of Amsterdam

16:30 **Electroactive soft actuators based on ionic gel/gold nanocomposites produced by supersonic cluster beam implantation** **V 14.33**
Yunsong Yan, Tommaso Santaniello, Luca Giacomo Bettini, Chloé Minnai, Andrea Bellacicca, Riccardo Porotti, Ilaria Denti, Gabriele Faraone, Cristina Lenardi, Paolo Milani
Yunsong Yan, Tommaso Santaniello, Luca Giacomo Bettini, Chloé Minnai, Andrea Bellacicca, Riccardo Porotti, Ilaria Denti, Gabriele Faraone, Cristina Lenardi, Paolo Milani, Interdisciplinary Centre for Nanostructured Materials and Interfaces (CIMaINa), Physics Department, University of Milan, Via Celoria 16, 20133, Milan, Italy

16:30 **Highly selective electrochemical sensor for catecholamine neurotransmitters based on organic modified silica (ORMOSIL) modified** **V 14.34**
María Porcel-Valenzuela, Emilia Morallón, Francisco Montilla
Instituto Universitario de Materiales de Alicante Universidad de Alicante 03690 Alicante. Spain.

16:30 **Gas Sensing Properties of Fluorinated Carbon Nanotubes** **V 14.35**
Claudia Struzzi (1), Mattia Scardamaglia (1), Juan Casanova Cháfer (2), Nikolay Britun (1), Jean-François Colomer (3), Rony Snyders (1,4), Eduard Llobet (2), Carla Bittencourt (1)
(1) Chimie des Interactions Plasma Surface (ChIPS), University of Mons, Mons, Belgium, (2) MINOS-EMaS, Departament d?Enginyeria Electrònica, Universitat Rovira i Virgili, Tarragona, Spain, (3) Research Group on Carbon Nanostructures (CARBONNAGe), University of Namur, Namur, Belgium, (4) Materia Nova Research Center, Mons, Belgium

16:30 **Graphene oxide monolayer over GaN(0001)** **V 14.36**
Fabian Herrera1, Jairo A. Rodriguez2, and Maria G. Moreno-Armenta3
1 Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE), Carretera Tijuana-Ensenada No. 3918, A. Postal 360, 22860, Ensenada B.C., México
2 Grupo de Estudio de Materiales (GEMA), Departamento de Física, Universidad Nacional de Colombia, AA 5997 Bogotá, Colombia. 3 Centro de Nanociencias y Nanotecnologia, Universidad Nacional Autónoma de México, Apartado Postal 356, Ensenada, Baja California, 22800, México

16:30 **Synthesis of NiF2.xH2O (x=0 or 4) nanoparticles by microemulsion and their self-assembly** **V 14.37**
Hameed Ullah (1), Batisse Nicolas (1), Guerin Katia (1), Guillaume Rogez (2) and Pierre Bonnet (1)
(1) Institut de Chimie de Clermont-Ferrand, Université Clermont Auvergne / CNRS / Sigma Clermont (2) Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg / CNRS

16:30 **Scalable production of low-defect graphene nanosheets by efficient water-assisted mechanochemical exfoliation** **V 14.38**
Jia-Liang Liao, Wei-Hung Chiang
Department of Chemical Engineering, National Taiwan University of Science and Technology

16:30 **Localized electroplating method for soldering microelectronics devices** **V 14.39**
Sabrina M. Rosa-Ortiz, Dr. Arash Takshi
University of South Florida, Tampa, FL

16:30 **Backside Carbon Gettering Approach to Grow High-quality Single-Crystal Monolayer Graphene for Optoelectronic Applications** **V 14.41**
Irfan Haider Abidi, Abhishek Tyagi, Zhengtang Luo
Department of Chemical and Biomolecular Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong

16:30 **A novel method to reduce the population of various size of particles with less than 10 um (PM10) based on the electro-hydrodynam** **V 14.42**
Seonmin Kim *, Churl Seung Lee, Kyoung Il Lee, and Moon Suhk Suh
Korea Electronics Technology Institute

16:30 **Nanohybrids based on Nb2O5 nanoparticles as a faradic electrode for asymmetric Li-ion storage devices** **V 14.43**
Hyeon Ji Yoon, Na Rae Kim, Jun Ho Choe, Hong Joo An, Young Soo Yun, Hyoung-Joon Jin
Hyeong Ji Yoon, Na Rae Kim, Jun Ho Choe, Hong Joo An, Hyoung-Joon Jin Department of Polymer Science and Engineering, Inha University, Incheon 402-751, Republic of Korea Young Soo Yun Department of Chemical Engineering, Kangwon National University, Samcheok 245-711, Republic of Korea

16:30 **Solution based Cu2O nanocubes as O3 sensing material** **V 14.44**
V. Petromichelaki 1,2, E. Gagaoudakis1,2, G. Kiriakidis1,2,3, V. Binas1,2,3
1 Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2 University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece 3 Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece

16:30 **Non-ionizing CO2 Sensing with Perovskite Surfaces** **V 14.45**
Kostiantyn V. Sopiha, Oleksandr I. Malyi, Clas Persson, Ping Wu
Entropic Interface Group, Engineering Product Development, Singapore University of Technology and Design, 8 Somapah Road, 487372 Singapore, Singapore, School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798 Singapore, Singapore, Department of Physics, University of Oslo, P. O. Box 1048 Blindern, NO-0316 Oslo, Norway, Entropic Interface Group, Engineering Product Development, Singapore University of Technology and Design, 8 Somapah Road, 487372 Singapore, Singapore

16:30 **Structural and Electronic Properties of Bulk and Low-Index Surfaces of Zincblende PtC** **V 14.46**
M.Gokhan Sensoy, Daniele Toffoli, Hande Ustunel
Department of Physics, Middle East Technical University, Dumlupinar Blv 1, 06800, Ankara, Turkey, Dipartimento di Scienze Chimiche e Farmaceutiche, Universita degli Studi di Trieste, Via L. Giorgieri 1, I-34127, Trieste, Italy, Department of Physics, Middle East Technical University, Dumlupinar Blv 1, 06800, Ankara, Turkey.

16:30 **Small peptide-mediated surface functionalization of conjugated polymer nanoparticles for in vitro diagnostic sensor** **V 14.47**
Keunsoo Jeong, Hyun Jun Kim, Jungahn Kim, Sehoon Kim*
Center for Theragnosis, Korea Institute of Science and Technology (KIST), Seoul 136-791, Korea, Department of Chemistry, Kyung Hee University, Seoul 130-701, Korea

16:30 **Electrocatalytic Oxidation of Phenol in solution with Platinum Nanoparticles-Based Electrode** **V 14.48**
Chiung-Fen Chang, Zih-Jyun Chen
Department of Environmental Science and Engineering, Tunghai University

16:30 **A reversible photoluminescence platform for sensing hydrogen peroxide and biothiol at the nanocrystal/ligand interface** **V 14.49**
Youngsun Kim, Sehoon Kim
Center for Theragnosis, Korea Institute of Science and Technology

16:30 **Electrical detection of Hydrogen Sensors using Pt-gate AlGaN/GaN high electron mobility** **V 14.50**
Phd Student, DJELTI FAYSSAL Pr, A. Ould-Abbas Pr, N.-E. CHABANE-SARI
Abou Bakr Belkaïd University, / Research Unit Materials and Renewable Energy (URMER), B.P. 119, Tlemcen, Algeria

16:30 **Structural, chemical and magnetic properties of anisotropic ferromagnetic Fe nanoparticles inserted into carbon nanotubes** **V 14.51**
C. Speisser1, A. Prudnikava2, V. Labunov2, I. Komissarov2, S. Prischepa2, F. Le Normand1, B. Vigolo3, J. Ghanbaja3, J.L. Bantignies4
1: ICube, University of Strasbourg and CNRS, Strasbourg, France 2: Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus 3: Jean Lamour Institute, Nancy, France 4: Charles Coulomb Laboratory, Montpellier, France

16:30 **Multi-state arrays of Josephson junctions with high dissipation** **V 14.52**
M. Cuzminschi1, A. Zubarev1,2, Yu. M. Shukrinov3,4, I. Stamatin1
1University of Bucharest, Bucharest, Romania 2INFLPR, Magurele, Romania 3 BLTP, Joint Institute for Nuclear Research, Dubna, Russia 4 Dubna State University, Dubna, Russia

16:30 **Synthesis and characteristics of hollow N-doped carbon for supercapacitor** **V 14.53**
Min Seob Kim, Bong Kyun Kang, Byeong Seok Lim, and Dae Ho Yoon
School of Advanced materials Science & Engineering, Sungkyunkwan University

16:30 **Computational modeling of the XO42- (X = Cr, Mo, W) oxyanions adsorption on pristine and N/B-doped carbon nanostructures** **V 14.54**
Borysiuk V., Nedilko S., Hizhnyi Yu, Shyichuk A.
Taras Shevchenko National University of Kyiv, Volodymyrska Street 64/13, 01601, Kyiv, Ukraine, Adam Mickiewicz University, Department of Rare Earth, Faculty of Chemistry, Umultowska 89b, 61-614 Poznań, Poland, University of Wrocław, Faculty of Chemistry, Joliot-Curie 14, 50-383 Wrocław, Poland

16:30 **Titania and Silica Aerogels to Boost the Catalytic Activity of Polyoxometalates** **V 14.55**
Christina Jalkh, Christelle Ghazaly, and Houssam El-Rassy
Department of Chemistry, American University of Beirut, Lebanon

16:30 **Elaboration of magnetic nanosorbents for water remediation through magnetic hyperthermia.** **V 14.56**
Fernanda Lopes Rodovalho, Juliano Alexandre Chaker, Marcelo Henrique Sousa
Green Nanotechnology Group, University of Brasília, Faculty of Ceilândia, 72220-140, Brasília, Brazil

16:30 **Ultrafast dynamics of coherent oscillations of highly monodispersed plasmonic Ag nanocubes and their assemblies** **V 14.57**
Domantas Peckus1, Tomas Tamulevičius1, Lukas Stankevičius1, Mindaugas Juodėnas1, Aušrinė Jurkevičiūtė1, Erika Rajackaitė1, Rimantas Gudaitis1, Šarūnas Meškinis1, Brigita Abrakevičienė1, Hongpan Rong2, Sigitas Tamulevičius1, Joel Henzie2
1Institute of Materials Science of Kaunas University of Technology, K. Baršausko St. 59, Kaunas LT-51423, Lithuania, 2National Institute for Materials Science, 1-1 Namiki, Tsukuba, Ibaraki, 305-0044 Japan

16:30 **Studies over the effect of different self assembled monolayers on gold/organic semiconducting single crystal interface.** **V 14.58**
Marco Bogar1, Damiano Cassese2, Stefano Prato2, Alessandro Fraleoni Morgera1,3,4
1Dept. of Engineering and Architecture, University of Trieste, Italy 2 A.P.E. Research s.r.l., Area Science Park, Trieste, Italy 3 CNR-NANO S3, Via Campi 213/A, Modena, Italy 4 Sincrotrone Trieste S.C.p.A., Italy

16:30 **Single-Particle Ratiometric Pressure Sensing Based on ?Double-Sensor? Colloidal Nanocrystals** **V 14.59**
Valerio Pinchetti(1), Monica Lorenzon(1), Francesco Bruni(1), Wan Ki Bae(2), Francesco Meinardi(1), Victor I. Klimov(2), Sergio Brovelli(1)
(1) Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via Cozzi 55, I-20125 Milano, Italy, (2) Chemistry Division and Center for Advanced Solar Photophysics, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, United States

16:30 **Multifunctional mesoporous silicas for alizarin yellow removal** **V 14.60**
Roik N.V, Trofymchuk I.M., Belyakova L.A.
Chuiko Institute of Surface Chemistry of NAS of Ukraine, 17 General Naumov Str., Kyiv, 03164, Ukraine

16:30 **synthesis, characterization and gas sensing properties of the rhombohedral CdSnO3 nanoparticles** **V 14.61**
Deshraj Meena, Brajesh Nandan, M. C. Bhatnagar
Department of Physics, Indian Institute of Technology Delhi, New Delhi- India 110016

16:30 **The influence of the sphere material on the opening size distribution of nanosphere lithography masks** **V 14.62**
Thomas Riedl 1,2, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany

16:30 **Nickel sulfide decorated silicon carbide foam for low-temperature oxidation of H2S** **V 14.63**
Cuong Duong-Viet, Jean-Mario Nhut, Thierry Romero, Housseinou Ba, Cuong Pham-Huu
Institute of Chemistry and Processes for Energy, Environment and Health, UMR 7515 CNRS-University of Strasbourg, 25, rue Becquerel, 67087 Strasbourg cedex 02, France

16:30 **Design and synthesis of nanostructured organosilicon luminophores for efficient and fast elementary particles photodetectors** **V 14.64**
S.A. Ponomarenko, O.V. Borschev, N.S. Surin, M.S. Skorotetcky, E.A. Kleymyuk, T.Yu. Starikova, A.S. Tereshenko
Enikolopov Institute of Synthetic Polymer Materials of Russian Academy of Sciences (ISPM RAS), Moscow, Russia, Moscow State University, Chemistry Department, Moscow Russia, LumInnoTech LLC, Moscow, Russia

16:30 **Carbon nanowalls, new versatile graphene based interface for laser desorption/ionization of small compounds in mass spectrometry** **V 14.65**
Ioana Silvia Hosu(1), Michal Sobaszek(2), Mateusz Ficek(2), Robert Bogdanowicz(2), Hervé Drobecq(3), Luc Boussekey (4), Oleg Melnyk(3), Alexandre Barras(1), Rabah Boukherroub (1) and Yannick Coffinier (1)*
(1) Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, UMR 8520 - IEMN, F-59000 Lille, France. Email: yannick.coffinier@univ-lille1.fr (2) Faculty of Electronics, Telecommunication and Informatics, Gdansk University of Technology, 11/12 Narutowicza St. 80-233, Gdansk, Poland. (3) Institut de Biologie de Lille (IBL, CNRS-UMR 8161), Université de Lille Nord de France, IFR142, 1 rue du Pr. Calmette, 59021 Lille, France. (4) Laboratoire de Spectrochimie Infrarouge et Raman, CNRS UMR 8516, Cité Scientifique, Université Lille1, 59655 Villeneuve d'Ascq, France

16:30 **SYNTHESIS, ADVANCED CHARACTERIZATION AND COMPARATIVE STUDY OF BENZENE ADSORPTION ON β-CYCLODEXTRIN-CONTAINING MCM-41 SILICAS** **V 14.66**
Trofymchuk I.M., Roik N.V., Belyakova L.A.
Chuiko Institute of Surface Chemistry of NAS of Ukraine, 17 General Naumov Str., 03164 Kyiv, Ukraine

16:30 **Hybrid nano systems for direct X-ray detectors** **V 14.67**
K. D. G. I. Jayawardena, H. M. Thirimanne, A. Nisbet, C. A. Mills, S. R. P. Silva
University of Surrey, University of Surrey, University of Surrey & Royal Surrey County Hospital, University of Surrey, University of Surrey,

16:30 **Spectroscopic manifestation of intravalley double electron-phonon resonance processes in single- and bilayer graphene systems** **V 14.68**
Yu.Stubrov1, V.Strelchuk1, A.Nikolenko1, T.Oriekhov2, V.Gubanov2, M.Biliy2, A.Naumenko2, N.Faidiuk2, L.Ogorodnyk2, L.Bulavin2
1V.Lashkaryov Institute of Semiconductor Physics, National Academy of Science of Ukraine, 45 Nauky pr., 03028 Kyiv, Ukraine 2Taras Shevchenko National University of Kyiv, 64/13 Volodymyrs'ka str., 01601 Kyiv, Ukraine

16:30 **Synthesis of Iron oxide nanoparticles and their application for the development of bacterial bioreactor** **V 14.69**
Ayoub NADI1, 2, 3, Damien BOYER3, Christiane FORESTIER4, Hassan HANNACHE5, Omar CHERKAOUI1 and Said GMOUH*2.
1 Laboratoire REMTEX, ESITH, route d'Eljadida, km 8, BP 7731 - Oulfa, Casablanca-MAROC 2 Laboratoire LIMAT, Université Hassan II Casablanca, BP: 9167 Casablanca-MAROC. 3 Université Clermont Auvergne, CNRS, SIGMA Clermont, Institut de Chimie de Clermont-Ferrand, F-63000 Clermont?Ferrand, France 4 Univerité Clermont-Auvergne, Laboratoire de Bactériologie - Biologie cellulaire Faculté de Pharmacie 63001 Clermont-Ferrand-FRANCE. 5 Centre des matériaux avancés, Université Mohammed VI Polytechnique, Benguerir, Morocco *said.gmouh@gmail.com damien.boyer@sigma-clermont.fr

16:30 **Modification of silicon columnar nanostructures with cavitand receptors for aromatic VOC sensing and explosive detection** **V 14.70**
C. Tudisco(1), T. Barboza(2), A. Motta(3), A. E. Giuffrida(1), R. Pinalli(2), E. Dalcanale(2), G. G. Condorelli(1)
(1)Dipartimento di Scienze Chimiche, Universita? di Catania and INSTM UdR di Catania, Italy, (2)Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale and INSTM UdR di Parma University of Parma, Italy, (3)Dipartimento di Chimica, Università degli Studi di Roma ?La Sapienza? and INSTM UdR Roma, Italy.

16:30 **Thermo-Optical switching of CuCl nanocrystals embedded in a glass matrix** **V 14.71**
E. Haro-Poniatowski (1,2),, M. Jiménez de Castro (2) , I. Camarillo1, A. Mariscal (2), R. Serna (2)
1 Departamento de Física Universidad Autónoma Metropolitana, Apartado Postal 55-534, México 09340, DF, México, ?2 Laser Processing Group, Instituto de Óptica, CSIC, Serrano 121, 28006 Madrid, Spain.

16:30 **Evolution of the opening size of nanosphere lithography masks during thermal annealing** **V 14.72**
Thomas Riedl 1,2, Vinay Kunnathully 1,2, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany

16:30 **Synthesis of CeO2&#8211,Co3O4 Composite Nanotubes and Its Catalytic Stability towards CO Oxidation** **V 14.73**
Hyerim Oh1, Il Hee Kim2, Young Dok Kim2, and Myung Hwa Kim1*
1Department of Chemistry & Nano Science, Ewha Womans University, Seoul, 120-750, Korea 2Department of Chemistry, Sungkyunkwan University, Suwon, 440-746, Korea

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM W

Small scale mechanical behaviour of interfaces: bridging experimental and computational modelling methods

Symposium Organizers :

Erik BITZEK, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

Hosni IDRISSI, Université Catholique de Louvain, Belgium

Marc FIVEL, SIMaP-GPM2/CNRS, St Martin d'Hères, France

Roland BRUNNER, Materials Center Leoben Forschung, Leoben, Austria

Monday 22 May 2017

Session 1 : H. Idrissi

09:00 **Interface influence on deformation in bcc metals across length scales and temperatures** — **W 1.1**
R. Fritz, D. Wimler, A. Leitner, V. Maier-Kiener, D. Kiener
Department Materials Physics, Montanuniversität Leoben, Leoben, Austria, Department Materials Physics, Montanuniversität Leoben, Leoben, Austria, Department Materials Physics, Montanuniversität Leoben, Leoben, Austria, Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Leoben, Austria, Department Materials Physics, Montanuniversität Leoben, Leoben, Austria

09:30 **Defect dynamics and signatures revealed by high-temperature nanoindentation of bcc chromium** — **W 1.2**
In-Chul Choi, Christian Brandl, Ruth Schwaiger
Karlsruhe Institute of Technology, Institute for Applied Materials, Eggenstein-Leopoldshafen, Germany

09:45 **In situ tensile tests of single Au nanowires combined with coherent X-ray diffraction** — **W 1.3**
T.W. Cornelius1, J. Shin1, 2, S. Labat1, F. Lauraux1, M.-I. Richard1,3, G. Richter4, D.S. Gianola2, O. Thomas1
1Aix-Marseille Université, CNRS, IM2NP UMR 7334, 13397 Marseille Cedex 20, France, 2University of California, Santa Barbara, CA 93106-5050 CA, USA, 3European Synchrotron (ESRF), ID01 beamline, 38043 Grenoble Cedex 9, France, 4MPI for Intelligent Systems, Heisenbergstrasse 3, 70569 Stuttgart, Germany

10:00 **Hard amorphous shell on core-shell nanowire for governing dislocation nucleation: local versus homogeneous plasticity** — **W 1.4**
Julien Godet, Clarisse Furgeaud, Laurent Pizzagalli, Michael J. Demkowicz
Julien Godet, Pprime Institute – CNRS – University of Poitiers, FRANCE: Clarisse Furgeaud - Pprime Institute – CNRS – University of Poitiers, FRANCE: Laurent Pizzagalli, Pprime Institute – CNRS – University of Poitiers, FRANCE: Michael J. Demkowicz- Materials Science and Engineering, Texas A&M University, College Station, TX 77843, USA

10:15 **Coffee break**

Session 2 : D. Kiener

10:35 **Dislocation nucleation in surface-dominated plasticity in single crystal Au nanowires** — **W 2.1**
Christian Brandl
Karlsruhe Institute of Technology (KIT) Institute for Applied Materials Hermann-von-Helmholtz-Platz 1 76344 Eggenstein-Leopoldshafen, Germany email: christian.brandl@kit.edu

10:50 **Systematic study of room-temperature grain coarsening induced by cyclic strain in gold films** — **W 2.2**
O. Glushko, M. J. Cordill
Erich Schmid Instiute, Leoben, Austria, Montanuniversität Leoben, Austria

11:05 **Surface Nucleation Controlled Plasticity in Twinned Gold Nanowires** — **W 2.3**
Zhuocheng Xie, Jakob Renner, Aruna Prakash, Erik Bitzek
Friedrich-Alexander-Universität Erlangen-Nürnberg, Materials Science & Engineering, Institute I, Erlangen, Germany

11:20 **Atomic modeling of dislocation core properties in olivine Mg2SiO4** — **W 2.4**
Srinivasan Mahendran, Philippe Carrez, Patrick Cordier
UMET, UMR-CNRS 8207, University of Lille, Villeneuve d'Ascq, 59655 France

11:35 **A Variance of Plastic Deformation Mechanisms in Different Grain Types of Ultrafine-Grained Aluminium** — **W 2.5**
Witold Chrominski, Malgorzata Lewandowska
Faculty of Materials Science and Engineering, Warsaw University of Technology, Woloska 141, 02-507 Warsaw, Poland

11:50 **Atomistic simulations of plastic deformation in the Mg-Al alloy system** — **W 2.6**
Aviral Vaid, Aruna Prakash, Julien Guénolé, Sandra Korte-Kerzel, Erik Bitzek
Aviral Vaid, Aruna Prakash, Julien Guénolé, Erik Bitzek: Materials Science and Engineering Institute I, Friedrich-Alexander-Universität Erlangen-Nürnberg, 91058 Erlangen, Germany Sandra Korte-Kerzel: Institut für Metallkunde und Metallphysik, RWTH Aachen, 52056 Aachen, Germany

12:05 **Lunch**

Session 3 : R. Janisch

14:00 **Grain boundary dynamics under stress, experiments and modelling** — **W 3.1**
F. Mompiou, N. Combe, M. Legros
CEMES-CNRS and Université de Toulouse

14:30 **Investigation of the mobility of mixed tilt-twist grain boundaries near 40° around < 111> in Ni using Molecular Dynamics** — **W 3.2**
Zakaria EL OMARI, Sylvain QUEYREAU, Charlie KAHLOUN, Brigitte BACROIX
LSPM CNRS UPR 3407, Université Paris 13, Sorbonne-Paris-Cité, 93430 Villetaneuse, France

14:45 **Role of GB anisotropy in S-induced Ni embrittlement** — **W 3.3**
I. Braems
Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322 Nantes cedex 3, France

15:00 **Solute segregation and its effect on the mechanical strength of a representative grain boundary in Cu.** — **W 3.4**
V.I. Razumovskiy*, S.V. Divinski**
* Materials Center Leoben Forschung GmbH, Roseggerstraße 12, A-8700 Leoben, Austria, ** Institute of Materials Physics, University of Münster, Wilhelm-Klemm-Str. 10, D-48149 Münster, Germany

15:15 **The investigation of the stability of defects in hydrided/dehydrided nanocrystalline Pd films using in-situ TEM techniques** — **W 3.5**
Gunnar Lumbeeck (1), Behnam Amin-Ahmadi (1), Hosni Idrissi (1,2), Joris Proost (2), Dominique Schryvers (1)
(1) Electron Microscopy for Materials Science (EMAT), Department of Physics, University of Antwerp, Belgium, (2) Institute of Mechanics, Materials and Civil Engineering, Université catholique de Louvain, Belgium

15:30 **Coffee break**

Session 4 : F. Mompiou

15:50 **Atomistic origins of deformation at grain boundaries in Al and TiAl** — **W 4.1**
Rebecca Janisch
ICAMS, Ruhr-Universität Bochum, Germany

16:20 **On boundaries of double extension twins in magnesium** — **W 4.2**
Andriy Ostapovets, Jiří Buršík, Karel Krahula, Lubomír Král, Anna Serra
Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Žižkova 22, 61662 Brno, Czech Republic,Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Žižkova 22, 61662 Brno, Czech Republic,Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Žižkova 22, 61662 Brno, Czech Republic,Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Žižkova 22, 61662 Brno, Czech Republic,Universitat Politecnica de Catalunya, Jordi Girona 1-3, 08034 Barcelona, Spain

16:25 **Effect of nanoscale twin orientation on the mechanical properties of electrodeposited copper films** — **W 4.3**
Maxime Mieszala(1), Gaylord Guillonneau(2), Madoka Hasegawa(1), Rejin Raghavan(3), Jeffrey M. Wheeler(4), Stefano Mischler(5), Johann Michler(1), Laetitia Philippe(1)
(1) Laboratory for Mechanics of Materials and Nanostructures, Empa - Materials Science and Technology, Switzerland , (2) Université de Lyon, Ecole Centrale de Lyon, Laboratoire de Tribologie et Dynamique des Systèmes, UMR 5513 CNRS/ECL/ENISE, France , (3) Max-Planck-Institut für Eisenforschung GmbH, Structure and Nano-/Micromechanics of Materials, Germany , (4) Laboratory for Nanometallurgy, Department of Materials, ETH Zürich, Switzerland , (5) Tribology and Interface Chemistry Group, EPFL, Ecole Polytechnique Fédérale de Lausanne, Switzerland

16:50 **Numerical simulations of twin formation and extension in thin bimetallic film** — **W 4.4**
Romuald Béjaud, Sandrine Brochard, Julien Durinck
INSTITUT P' - UPR 3346 - University of Poitiers - CNRS - ISAE ENSMA

Tuesday 23 May 2017

Session 5 : M. Fivel

09:00 **Connecting atomistic interface structure to material toughening in martensitic steels** **W 5.1**
F. Maresca, W. A. Curtin
Laboratory for Multiscale Mechanics Modeling EPFL

09:30 **Representative volume element (RVE) studies of transformation induced plasticity.** **W 5.2**
A. Sannikov*, T. Antretter**, M. Petersmann**
* Materials Center Leoben Forschung GmbH, Roseggerstrasse 12, 8700 Leoben, Austria, ** Institute of Mechanics, Montanuniversitaet Leoben, Franz-Josef Strasse 18, 8700 Leoben, Austria

09:45 **Combined Monte-Carlo/Molecular Dynamics study of the strength of CuxAg1-x|Ni multilayer systems** **W 5.3**
Adrien Gola, Peter Gumbsch, Lars Pastewka
Karlsruhe Institute of Technology

10:00 **Material inhomogeneity effects on the crack driving force in thin metallic film stacks** **W 5.4**
Darjan Kozic, Ruth Konetschnik, Hans-Peter Gänser, Roland Brunner, Daniel Kiener, Thomas Antretter, Otmar Kolednik
Materials Center Leoben Forschung GmbH, Leoben, Austria, Department Materials Physics, Montanuniversität Leoben, Austria, Materials Center Leoben Forschung GmbH, Leoben, Austria, Materials Center Leoben Forschung GmbH, Leoben, Austria, Department Materials Physics, Montanuniversität Leoben, Austria, Institute of Mechanics, Montanuniversität Leoben, Austria, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria

10:15 **Coffee break**

Session 6 : W. Curtin

10:35 **Origin of wall-thickness-dependent strength of nanotubular ZnO** **W 6.1**
Na-Ri Kang1, Young-Cheon Kim1, Hansol Jeon1, Seong Keun Kim2, Ju-Young Kim1
1 School of Materials Science and Engineering, UNIST (Ulsan National Institute of Science and Technology), Ulsan 44919, Republic of Korea, 2 Center for Electronic Materials, KIST (Korea Institute of Science and Technology), Seoul 02792, Republic of Korea,

10:50 **A novel oscillatory pressure-assisted sintering (OPS) process for fabrication of high-quality nanostructured ceramics** **W 6.2**
Yao Han, Zhipeng Xie
School of Materials Science and Engineering, Tsinghua University, Beijing, China

11:05 **In situ deformation of nanocrystalline Al2O3 thin films at room temperature** **W 6.3**
Erkka J. Frankberg 1), Lucile Joly-Pottuz 2), Francisco Garcia 3), Turkka Salminen 4), Janne Kalikka 5,6), Siddardha Koneti 2), Lucian Roiban 2), Thierry Douillard 2), Bérangère Le Saint 2), Jaakko Akola 5,6), Erkki Levänen 1), Fabio Di Fonzo 3), Karine Masenelli-Varlot 2)
1) Laboratory of Materials Science, Tampere University of Technology, Korkeakoulunkatu 6, 33720 Tampere, Finland, 2) Univ. Lyon, INSA-Lyon, CNRS UMR 5510, MATEIS, 7 Avenue J. Capelle, 69621 Villeurbanne, France, 3) Center for Nano Science and Technology, Istituto Italiano di Tecnologia, Via G. Pascoli 70/3, 20133 (MI), Italia, 4) Optoelectronics Research Center, Tampere University of Technology, Korkeakoulunkatu 6, 33720 Tampere, Finland, 5) Department of Physics, Tampere University of Technology, P.O. Box 692, FI-33101 Tampere, Finland, 6) COMP Centre of Excellence, Department of Applied Physics, Aalto University, FI-00076 Aalto, Finland

11:20 **Flexibility of perovskite LED investigated by characterizing mechanical properties of constituent materials** **W 6.4**
Si-Hoon Kim1, Sang Yun Lee1, Myoung Hoon Song1, Eun-chae Jeon2 and Ju-Young Kim1
1 School of Materials Science and Engineering, UNIST (Ulsan National Institute of Science and Technology), Ulsan 44919, Republic of Korea, 2 Department of Nanomanufacturing Technology, Korea Institute of Machinery and Materials, Daejeon 34103, Republic of Korea

11:35 **In situ study of the mechanical behavior of PVD thin metallic films for biomedical applications deposited on PET substrates** **W 6.5**
A. Etiemble1,2, G.I. Nkou Bouala2, C. Lopes3,C. Langlois 2, B. Freitas3,4, M.S. Rodrigues3, J. Rethoré5, J.F. Pierson1, F. Vaz3,6, P. Steyer2
1 Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Parc de Saurupt, 54011 Nancy, France 2 Univ. Lyon, INSA-Lyon, MATEIS UMR CNRS 5510, 21 Avenue Jean Capelle, 69621, Villeurbanne cedex, France 3 Centro/Departamento de Física, Universidade do Minho, Campus de Gualtar, 4710 - 057 Braga, Portugal 4 Instituto Pedro Nunes, Laboratório de Ensaios, Desgaste e Materiais, Rua Pedro Nunes, 3030-199 Coimbra, Portugal 5 LaMCoS, INSA de Lyon, Villeurbanne, FRANCE 6 SEG-CEMUC, Mechanical Engineering Department, University of Coimbra, 3030-788 Coimbra, Portugal

11:50 **Electrochemical, electrical and physical studies of the electrical double layer at the 304L / NaCl solution interface** **W 6.6**
W. MASTOURI, L. PICHON , S. MARTEMIANOV, A. THOMAS , T. PAILLAT
INSTITUT P' UPR 3346 CNRS Université de Poitiers ISAE-ENSMA

12:05 **Lunch**

Session 7 : E. Bitzek

14:00 **In situ mechanical testing and manipulation of materials in FIB-SEM and TEM: New approaches and applications** **W 7.1**
Erdmann Spiecker
Lehrstuhl für Mikro- und Nanostrukturforschung & Center for Nanoanalysis and Electron Microscopy (CENEM), Friedrich-Alexander Universität Erlangen-Nürnberg, Cauerstr. 6, 91058 Erlangen, Germany

14:30 **A novel method for preparing tensile thin films specimens for in-situ mechanical testing in the TEM** **W 7.2**
Benoit Merle, Jan P. Liebig, Mirza Mackovic, Olivier Pierron, Gunther Richter, Erdmann Spiecker, Mathias Göken
Materials Science & Engineering 1, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Materials Science & Engineering 1, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Center for Nanoanalysis and Electron Microscopy (CENEM), Friedrich-Alexander-University Erlangen-Nürnberg (FAU), G. W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Max Planck Institute for Intelligent Systems, Institute of Micro and Nanostructure Research, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Materials Science & Engineering 1, Friedrich-Alexander-University Erlangen-Nürnberg (FAU),

14:45 **X-ray nanodiffraction for in-situ mechanical studies: advantages and examples** **W 7.3**
Anton Davydok, Christina Krywka
Institute for Materials Research, Helmholtz-Zentrum Geesthacht, outstation at DESY, Notkestraße 85, 22607 Hamburg, Germany

15:00 **Measuring the interface adhesion of metal films on compliant substrates** **W 7.4**
M.J. Cordill, A.A. Taylor
Erich Schmid Institute for Materials Science, Austrian Academy of Sciences

15:15 **Coffee break**

Session 8 : E. Spiecker

15:35 **Growth instability and mechanical effects in oxide layers formation on Fe-Cr-Al alloys during oxidation in Pb-Bi at up to 800 C** **W 8.1**
Miroslav Popovic, Kai Chen, Mark Asta, Jan Schroers, Peter Hosemann
Department of Nuclear Engineering, University of California Berkeley, Berkeley CA 94720 (USA), School of Materials Science & Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi 710049 (P. R. China), Department of Materials Science & Engineering, University of California Berkeley, Berkeley CA 94720 (USA), School of Engineering & Applied Science, Yale University, New Haven, CT 06511 (USA), Department of Nuclear Engineering, University of California Berkeley, Berkeley CA 94720 (USA),

15:50 **Mechanical moduli of an Al2O3-TiO2 superlattice: effective elasticity versus direct ab initio calculation.** **W 8.2**
Maxim N. Popov,1 Jürgen Spitaler,1 and Claudia Draxl2
1 Materials Center Leoben (MCL) Forschung GmbH, Roseggerstr. 12, A-8700 Leoben, Austria 2 Institut für Physik and IRIS Adlershof Theoretische Festkörperphysik, Humboldt-Universität zu Berlin, Zum Großen Windkanal 6, 12489 Berlin, Germany

16:05 **General atomistic approach for modeling metal-semiconductor interfaces and surface calculations** **W 8.3**
Daniele Stradi, Umberto Martinez, Anders Blom, Mads Brandbyge, Søren Smidstrup, Kurt Stokbro
QauntumWise A/S, Center for Nanostructured Graphene (CNG), Department of Micro- and Nanotechnology (DTU Nanotech)

16:20 **Mechanical Properties of AlTi -TiB2 Composites with sub-micron sized TiB2 prticles** **W 8.4**
Masashi Yoshida
National Institute of Technology, Ube College

16:35 **Graphene on Ni(100): coexistence of different moiré patterns at a symmetry-mismatched interface** **W 8.5**
V. Carnevali [1,2], Z. Zhiyu [3], M. Jugovac [1,#], L. Patera [1,§], G. Soldano [4], M. Mariscal [4], C. Africh [4], G. Comelli [1], M. Peressi [1]
[1] Università di Trieste, Via A. Valerio 2, Trieste, Italy [2] CNR-IOM TASC, Trieste [3] ICTP, Trieste [4] Universidad Nacional de Cordoba, and INFIQC CONICET-UNC, Argentina [#] present address: Peter Grünberg Institut, Forschungszentrum Jülich, Deutschland [§] present address: Faculty of Physics, University of Regensburg, Deutschland

16:50 **Poster session: H. IDRISSI**

16:55 **Characterization of mechanical behavior of acrylonitrile butadiene rubber-clay nanocomposites** **W P1.0**
Chang Su Woo
Korea Institute of Machinery & Materials

16:55 **Nonlocal element-free model for buckling analysis of double-layered circular graphene sheets embedded in an elastic medium** **W P2.0**
Yang Zhang*, C.H. Zheng, Z.X. Lei
School of Sciences, Nanjing University of Science and Technology, Nanjing 210094, China

16:55 **Fully Automated Falling Detection Sensor and Algorithm Using Mobile Phone for Elderly Person** **W P17.0**
Jong-Ha Lee, Jong Seob Choi, Hyung Jin Kim
1. Department of Biomedical Engineering, Keimyung University, South Korea 2, Convergence Medical Devices Research Center, Electronic Medical Technology Research Division, Gumi Electronics & Information Technology Research Institute, South Korea

16:55 **Use of micromechanical testing for the calibration of grain-scale crystal plasticity models of nuclear structural materials** **W P3.0**
A. Ruiz Moreno, Z. Szaraz, S. Ripplinger, I. Simonovski
European Commission, Joint Research Centre, Directorate G: Nuclear Safety and Security. Westerduinweg 3, 1755 LE Petten, The Netherlands

16:55 **Hydrophobicity of Graphene system using combined QM/MM method** **W P4.0**
Suji Gim, Hyung-Kyu Lim, Hyungjun Kim
Graduate School of Energy, Environment, Water, and Sustainability (EEWS), Korea Advanced Institute of Science and Technology

16:55 **Quantification of the Brittle to ductile transition in silicon at small scale: a plasticity criterion** **W P5.0**
Julien Godet, Firas Abed El Nabi, Sandrine Brochard, Laurent Pizzagalli
Julien Godet, Pprime Institute – CNRS – University of Poitiers, FRANCE: Firas Abed El Nabi, Pprime Institute – CNRS – University of Poitiers, FRANCE: Sandrine Brochard, Pprime Institute – CNRS – University of Poitiers, FRANCE: Laurent Pizzagalli, Pprime Institute – CNRS – University of Poitiers, FRANCE

16:55 **Role of Ferromagnetic Nanoparticles in Cu-Al-Mn Alloy Phase Transformations** **W P6.0**
A. Titenko1, L. Demchenko2, S. Sidorenko2
1Institute of Magnetism NAS of Ukraine and MES of Ukraine, 2Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.

16:55 **Molecular Dynamics Simulations based Study for Understanding Behavior of Oxygen and Water in Spiro-OMeTAD** **W P7.0**
Ye-Seol Ha, Hyeyoung Shin, Hyungjun Kim
Dept. of Energy, Environment, Water and Sustainability (EEWS) Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea

16:55 **Investigation of optical gain in 1.55 μm p-i-n GaNAsBi-based DQWs** **W P8.0**
I. Guizani, K. Chakir, M. M. Habchi and A. Rebey*
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro-Epitaxies et Applications, 5019 Monastir, Tunisia

16:55 **Phase analysis of multicomponent photoreflectance spectra in GaAsBi/GaAs structure** **W P9.0**
I.Guizani, H. Fitouri I. Zaied and A. Rebey*
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro-Epitaxies et Applications, 5019 Monastir, Tunisia

16:55 **Strain-balanced GaAsN/GaAsBi type II double quantum wells operating at 1.3 and 1.55 μm** **W P10.0**
K. Chakir, I. Guizani, C. Bilel, A. Rebey
University of Monastir, Faculty of Sciences, Unité de Recherche sur les Hétéro–Epitaxies et Applications, 5019 Monastir, Tunisia

16:55 **Molecular dynamics simulations of influence of silver inclusions on the copper nanomaterial by nanoindentation** **W P11.0**
S. Abdeslam
Institute of Optics and Mechanics of Precision, Ferhat Abbas University Sétif 1, 19000 Sétif, Algeria.

16:55 **Addressing Convoluted Strain-Compositional Variations at the Nanoscale by Finite Elements Analysis and HRTEM** **W P12.0**
Nikoletta Florini, George P. Dimitrakopulos, Joseph Kioseoglou, Thomas Kehagias
Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

16:55 **Microtensile Testing of Fluoropolymer Films** **W P13.0**
Brigita Abakevičienė(1,2), Mantas Lukauskas(2), Skirmantas Norkus(2), Aušra Gadeikytė(3), Dalius Jucius(1), Algirdas Lazauskas(1), Viktoras Grigaliūnas(1)
(1) Institute of Materials Science, Kaunas University of Technology, K. Barsausko srt. 59, LT-51423 Kaunas, Lithuania (2) Department of Physics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania (3) Department of Applied Informatics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania

16:55 **A New Approach to Determine the Optimal Number of Piezo-actuators for the Multimodal Vibration Reduction of Smart Plate** **W P14.0**
Deepak Chhabra
Dr. Deepak Chhabra, Assistant Professor, Department of Mechanical Engineering, University Institute of Engineering & Technology, MDU, Rohtak-124001, Haryana, India

16:55 **Experimental Investigation of Sunflower oil based biodiesel in a single cylinder CI engine** **W P15.0**
Sunil Dhingra
Sunil Dhingra Department of Mechanical Engineering University Institute of Engineering & Technology, Kurukshetra University, Kurukshetra, Haryana, India-136119

16:55 **Analysis of thermo-diffusive cellular instabilities in continuum combustion fronts** **W P16.0**
Hossein Azizi, Sebastian Gurevich, Nikolas Provatas
Department of Physics, Centre for the Physics of Materials, McGill University, Montreal, QC, Canada

Session 9 : R. Brunner

09:00 **Electrical modulation of the Poisson's ratio of nanoporous metals** **W 9.1**
Lukas Lührs, Birthe Müller, Jörg Weissmüller
Hamburg University of Technology, Institute of Materials Physics and Technology, Hamburg University of Technology, Institute of Materials Physics and Technology, Hamburg University of Technology, Institute of Materials Physics and Technology, Institute of Materials Research, Materials Mechanics, Helmholtz-Zentrum Geesthacht,

09:15 **Combined in situ mechanical testing and scale-bridging 3D analysis of nanoporous gold** **W 9.2**
Thomas Przybilla1)*, Erich Thiess1), Florian Niekiel1), Benjamin Winter1), Mirza Mačković1), Zhuocheng Xie2), Arun Prakash2), Stephen T. Kelly3), Hrishikesh A. Bale3), Erik Bitzek2), Erdmann Spiecker1),
1) Institute of Micro- and Nanostructure Research & Center for Nanoanalysis and Electron Microscopy (CENEM), Department of Materials Science and Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg, Cauerstrasse 6, 91058 Erlangen, Germany, 2) Institute of General Material Properties, Department of Materials Science and Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg, Martensstrasse 5, 91058 Erlangen, Germany, 3) Carl Zeiss X-ray Microscopy, 4385 Hopyard Rd, Ste 100, Pleasanton, CA 94588, USA, * thomas.przybilla@fau.de

09:30 **Nanotribology of anions at gold electrodes: an in situ electrochemical lateral force microscopy study** **W 9.3**
Katharina Klingan [a], Christian Zafiu [a,b], Christoph Huber [a], Wolfgang Kautek [a]
[a] University of Vienna, Department of Physical Chemistry, Vienna, Austria, [b] Forschungszentrum Jülich, Institute of Complex Systems (ICS-6), Jülich, Germany

09:45 **Poly(NIPAm) can actuate to stable 3D forms: A numerical study on one component dual actuation** **W 9.4**
Ali Ghaemi(1), Li Liu(2), Stephan Gekle(1), Seema Agarwal(2)
(1) Biofluid Simulation and Modeling, Fachbereich Physik, and Bayreuth Center for Colloids and Interfaces, Universität Bayreuth, Universitätsstraße 30, 95440 Bayreuth, Germany. (2) Macromolecular Chemistry II and Bayreuth Center for Colloids and Interfaces, Universität Bayreuth, Universitätsstraße 30, 95440 Bayreuth, Germany.

10:00 **Glass fibers pull-out length measurement on cryo-fractured polymer surface by 3D SEM photogrammetry reconstruction** **W 9.5**
Sebastien Pierrat (1), Chanjuan Liu (1), Jan Henk Kamps (1), Chiel Leenders (1), Olivier Guise (1), Xiaoyin Cheng (2), Katja Schladitz (2)
(1) SABIC, Plasticslaan 1, 4612PX Bergen op Zoom, The Netherlands (2) Fraunhofer-Institut für Techno- und Wirtschaftsmathematik ITWM, Fraunhofer-Platz 1, 67663 Kaiserslautern, Germany

10:15 **Coffee break**

Session 10 : H. Idrissi

10:35 **Characterization of HAPG bulk mosaic structure using high frequency ultrasound** **W 10.1**
Vadim Levin1, Egor Morokov1,2, Yulia Petronyuk1,2, Inna Grigorieva3, Alexander Antonov 3
1 Emanuel Institute of Biochemical Physics RAS, Russia, Moscow 2 Scientific and Technological Center of Unique Instrumentation RAS, Moscow, Russia 3 Optigraph GmbH, Berlin, Germany

10:50 **Ultrasonic Microscopy of the reinforced composites destruction** **W 10.2**
Vadim Levin, Yulia Petronyuk, Egor Morokov, Tatiana Ryzhova, Alexander Shanygin, Pavel Shershak
Emanuel Institute of Biochemical Physics RAS, Russia, Moscow, Scientific and Technological Center of Unique Instrumentation RAS, Moscow, Russia, Central Aerohydrodinamic Institute, Zhukovsky, Russia National Institute of Aviation Technology, Moscow, Russia

11:05 **Direct Imaging of defect formation in strained flexible electronics by Scanning Kelvin Probe Microscopy** **W 10.3**
Tobias Cramer, Lorenzo Travaglini, Stefano Lai, Luca Patruno, Stefano de Miranda, Annalisa Bonfiglio, Piero Cosseddu, Beatrice Fraboni
Department of Physics and Astronomy, University of Bologna, Viale Berti Pichat 6/2, Italy, Department of Electric and Electronic Engineering, University of Cagliari, Piazza d'Armi, Italy, DICAM, University of Bologna, Viale Risorgimento 2, Italy,

11:20 **The Development and Mechanical Characterization of Aluminium Copper-Glass Fiber Metal Matrix Hybrid Composite** **W 10.4**
M. U. Manzoor, H. Zaidi, A. Nadeem, Z. Ali, T. Ahmad, M. Kamran, R. Ahmad
Department of Metallurgy & Materials Engineering, College of Engineering & Emerging Technologies, Quaid-e-Azam Campus, University of the Punjab, Lahore, Pakistan

11:35 **Study of Addition of wt.% Ratio of Silica Sand Nanoparticles on Aluminium-Carbon Fibers Hybrid Composites** **W 10.5**
Muhammad M.T.Z. Butt, Tahir T Ahmad, Muhammad M. Kamran, M. U. Manzoor
Department of Metallurgy and Materials Engineering, CEET, Faculty of Engineering & Technology, University of the Punjab, Lahore, Pakistan

11:50 **P03 nanofocus end-station for material research** **W 10.6**
Anton Davydok, Christina Krywka
Institute for Materials Research, Helmholtz-Zentrum Geesthacht, outstation at DESY, Notkestraße 85, 22607 Hamburg, Germany

12:05 **Lunch**

14:00 **round-table discussion**

15:00 **Conclusion Symposium W**

15:30 **Coffee break**

16:15 **Plenary Session**

E-MRS

2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

SYMPOSIUM X

New frontiers in laser interaction: from hard coatings to smart materials

Symposium Organizers :

James G. LUNNEY, Trinity College Dublin, Ireland

Nadjib SEMMAR, CNRS / University of Orléans, France

Stela CANULESCU, Technical University of Denmark, Roskilde, Denmark

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X

Monday 22 May 2017

Laser induced forward transfer : Philippe Delaporte

10:30 **Flow focusing and non-Newtonian jet behavior in Laser induced forward transfer printing»** — **X 1.1**
Craig B. Arnold
Princeton University

11:00 **Laser induced forward transfer immobilization of aptamers for Silicon Nitride-based optical sensors.** — **X 1.2**
Maria Massaouti, George Tsekenis, Christina Kryou, Ioanna Zergioti
Maria Massaouti, Christina Kryou, Ioanna Zergioti National Technical University of Athens, Physics Department, Iroon Polytechneiou 9, 15780 Zografou, Athens, Greece, George Tsekenis Biomedical Research Foundation of the Academy of Athens, Soranou Ephessiou 4, 11527 Athens, Greece,

11:15 **Double-pulse laser-induced forward transfer: liquid jet formation from solid thin metal film** — **X 1.3**
Qingfeng Li, Anne Patricia Alloncle, David Grojo, Philippe Delaporte
Aix-Marseille University, CNRS, LP3, F-13288 Marseille, France

11:30 **Femtosecond laser printing of semiconductor nanoparticles with resonant optical response** — **X 1.4**
D.M. Zhigunov(1), U. Zywietz(2), A.B. Evlyukhin(2), B.N. Chichkov(2)
(1) Lomonosov Moscow State University, Faculty of Physics, 119991 Moscow, Russia
(2) Laser Zentrum Hannover e.V., 30419 Hannover, Germany

11:45 **High fill-factor microlens arrays by laser printing of solid polymeric discs** — **X 1.5**
Salvatore Surdo, Riccardo Carzino, Alberto Diaspro, Martí Duocastella
Nanophysics Department, Istituto Italiano di Tecnologia, Via Morego 30, 16163, Genova, Italy

12:00 **Lunch**

Micro and nano-structuring with ultrashort laser pulses : James Lunney

13:30 **Non-thermal nanostructure-enabled precision structuring of thin film coatings and substrate surfaces using ultrashort laser proc** — **X 2.1**
Gerard M.O'Connor
NCLA Laser Laboratory/ CÚRAM, National University of Ireland Galway, Ireland.

14:00 **Mechanisms of the generation of highly-regular laser induced periodic surface structures** — **X 2.2**
Maxim V. Shugaev, Iaroslav Gnilitskyi, Nadezhda M. Bulgakova, Leonardo Orazi, Leonid V. Zhigilei
University of Virginia, Department of Materials Science and Engineering, 395 McCormick Road, Charlottesville, VA 22904-4745, USA, DISMI, University of Modena and Reggio Emilia (UNIMORE), 2 via Amendola, Reggio Emilia 41122, Italy, HiLASE Centre, Institute of Physics ASCR, Za Radnicí 828, 25241 Dolní Břežany, Czech Republic, S.S. Kutateladze Institute of Thermophysics SB RAS, 1 Lavrentyev Ave., Novosibirsk 630090, Russia

14:15 **Exotic Laser Induced Periodic Surface Structures formed on titanium oxide thin films under femtosecond irradiation** — **X 2.3**
A.Talbi, P. Coddet, E. Millon, A.L. Thomann, A. Stolz, C. Boulmer-Leborgne1, GM. O'Connor, N. Semmar
GREMI-UMR 7344-CNRS-University of Orleans, 14 rue d'Issoudun, BP6744, 45071 Orleans Cedex2, France, NCLA/Inspire Laboratories, School of Physics, National University of Ireland Galway, University Road, Galway, Ireland

14:30 **Texture multiplexing by ultrashort pulse laser for surface functionalization** — **X 2.4**
Camille Hairaye (1,2,3), Manuel Flury (1,3), Thierry Engel (1,2,3), Frédéric Mermet (2), Joël Fontaine (1,3), Sylvain Lecler (1)
(1) Laboratoire ICube, Université de Strasbourg, CNRS (UMR 7357), 300 bld Sébastien Brant, CS 10413, 67412 Illkirch cedex, France (2) IREPA LASER, Institut Carnot MICA, Parc d'Innovation, 67400 Illkirch, France (3) INSA de Strasbourg, 24 bld de la Victoire, 67084 Strasbourg Cedex, France

14:45 **Mimicking bug-like surface structures and their fluid transport produced by ultrashort laser pulse irradiation of steel** — **X 2.5**
S. V. Kirner (1), U. Hermens (2), K. Winands (2), H. Mescheder (2), C. Florian (3), J. Solis (3), J. Siegel (3), F. Hischen (4), W. Baumgartner (4), E. Skoulas (5), A. Mimidis (5), E. Stratakis (5), D. Spaltmann (1), J. Krüger (1), J. Bonse (1)
(1) Bundesanstalt für Materialforschung und -prüfung (BAM), Unter den Eichen 87, D-12205 Berlin, Germany (2) Fraunhofer Institute for Production Technology IPT, Steinbachstr. 17, D-52074 Aachen, Germany (3) Laser Processing Group, Instituto de Optica – CSIC, Serrano 121, E-28006 Madrid, SPAIN (4) Institute of Biomedical Mechatronics, Johannes Kepler University Linz, Altenberger Straße 69, 4040 Linz, Austria (5) Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, GR-71110 Crete, Greece

15:00 **Apertureless scanning near-field nanolithography on metal and polymer films with a femtosecond Yb-doped fiber laser oscillator** — **X 2.6**
I. Falcón Casas, O. Armbruster, L. Zhu, W. Kautek
University of Vienna, Department of Physical Chemistry, Währinger Strasse 42, A-1090 Vienna, Austria

15:15 **Laser control of ultrafast nonthermal melting in silicon** — **X 2.7**
Tobias Zier, Eeuwe S. Zijlstra, Martin E. Garcia
Theoretische Physik, Universität Kassel and Center for Interdisciplinary Nanostructure Science and Technology (CINSaT), Heinrich-Plett-Str. 40, 34132 Kassel, Germany

15:30 **Coffee break**

Synthesis of Nanomaterials by Laser Ablation: Fundamentals and Applications : Valentina Dinca

16:00 **Novel advanced laser-synthesized nanomaterials for cancer theranostics** — **X 3.1**
Andrei V. Kabashin
Aix Marseille University, CNRS, LP3 UMR 7341, Campus de Luminy - Case 917, 13288, Marseille, France

16:30 **Laser Ablation of Metals in Liquid Contact** — **X 3.2**
N. Lasemi [a], U. Pacher [a], L.V. Zhigilei [a,b], O. Bomati-Miguel [a,c], W. Kautek [a]
[a] University of Vienna, Department of Physical Chemistry, Vienna, Austria, [b] University of Virginia, Department of Materials Science & Engineering, Charlottesville, Virginia, USA, [c] Autonomous University of Madrid, Department of Applied Physics, Madrid, Spain

16:45 **Laser synthesis in liquid of iron oxide nanoparticles and their potential application in composite film coatings for bone-relate** — **X 3.3**
M.Curcio, A. De Bonis, S. Laureti, M. Fosca, A. Galasso, A. Santagata, R. Teghil, J.V. Rau
M.Curcio, A. De Bonis, A.Galasso, R. Teghil Dipartimento di Scienze, Universita della Basilicata, Viale dell'Ateneo Lucano, 10, 85100 Potenza, Italy, M. Fosca, S. Laureti, J.V. Rau Istituto di Struttura della Materia (ISM-CNR), Via del Fosso del Cavaliere 100, 00133 Rome, Italy, A. Santagata Istituto di Struttura della Materia (ISM-CNR), UOS Tito Scalo, C.da Santa Loja, Tito Scalo (PZ), Italy

17:00 **Preparation of noble metal nanoparticles by ultrasound assisted laser ablation in liquid** — **X 3.4**
J. Gonzalo, J. Solís, L. Escobar-Alarcón, E. Haro-Poniatowski
Laser Processing Group, Instituto de Optica, CSIC, Serrano 121, 28006 Madrid, Spain, Departamento de Física, Instituto Nacional de Investigaciones Nucleares, Apdo. Postal 18-1027, México DF 11801, México, Departamento de Física, Universidad Autónoma Metropolitana Iztapalapa, Apdo. Postal 55-534, México, D.F., México.

17:15 **Novel polymeric nanocomposites as bioactive implant materials via high-scale laser ablation in liquids** — **X 3.5**
Maria Surnina, Boris Chichkov, Laszlo Sajti
Laser Zentrum Hannover e.V., Hannover, Germany

Tuesday 23 May 2017

PLD : Maria Dinescu

08:30 **Laser ablation for the synthesis of carbon-based thin films and graphene** — X 4.1
Florence Garrelie, Florent Bourquard, Christophe Donnet
Univ Lyon, UJM-Saint-Etienne, CNRS, Institut d Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, SAINT-ETIENNE, France

09:00 **Pulsed Photonic Fabrication of Nanostructured Metal Oxides Thin Films** — X 4.2
Sijun Luo, Briley B. Bourgeois, Brian C. Riggs, Shiva Adireddy, and Douglas B. Chrisey
Department of Physics and Engineering Physics, Tulane University, New Orleans, Louisiana 70118, USA

09:15 **Diamond-Like Carbon layers obtained by Pulsed Laser Deposition in different conditions for conductive electrodes application.** — X 4.3
F. Stock, F. Antoni, F. Le Normand
ICube, D-ESSP, 23 rue du Loess, 67037 Strasbourg France

09:30 **PLD covering the innovation chain to accelerate the commercial uptake of novel thin film materials** — X 4.4
J.M. Dekkers*, and A. Janssens
Solmates BV

09:45 **Experimental investigations of transient plasma plumes generated by laser ablation in various temporal regimes** — X 4.5
S.A. Irimiciuc1,2, S. Gurlui2, P. Nica3, M. Agop3, C. Focsa1
1 Univ. Lille, CNRS, UMR 8523 - PhLAM - Physique des Lasers, Atomes et Molécules, F-59000 Lille, France 2 Faculty of Physics, Atmosphere Optics, Spectroscopy and Lasers Laboratory "Alexandru Ioan Cuza" University, 700506 Iasi, Romania 3 Department of Physics, "Gh. Asachi" Technical University, 700050 Iasi, Romania

10:00 **Coffee break**

Laser surface modification : Florence Garrelie

10:30 **Laser surface nitriding with various gas compositions for controlled surface life time control** — X 5.1
Muhannad Obeidi, Eanna McCarthy, Dermot Brabazon
Advanced Processing Technology Research Centre, Dublin City University, Dublin, Ireland

11:00 **Experimental analysis of the passivation kinetics on Aluminium: Laser-induced defect agglomeration and saturation** — X 5.2
Morris J.J. Weimerskirch, Tristan O. Nagy, Ulrich Pacher, Wolfgang Kautek
Faculty of Physics- University of Vienna, Department of Physical Chemistry - University of Vienna, Department of Physical Chemistry - University of Vienna, Department of Physical Chemistry - University of Vienna

11:15 **Potential use of high quality surface machining LIBWE on PMMA** — X 5.3
W.K Yeung1 , H.-F. Chang1, W.C. Kao1, M. Ehrhardt2, K. Zimmer2, J. Y. Cheng1
1 Research Center for Applied Sciences, Academia Sinica, 128 Sec. 2, Academia Rd., Nankang, Taipei 11529, Taiwan, ROT 2 Leibniz-Institute of Surface Modification, Permoserstr. 15, 04318 Leipzig, Germany

11:30 **Oxidation-Induced Surface Roughening of Aluminum Nanoparticles Formed in an Ablation Plume:role of surrounding gaz composition** — X 5.4
L. Lavisse (1), M. Girault (1), P. Berger (2), J-M. Jouvard (1), J-L. Le Garrec (6), E. Carvou (6), F-X. Ouf (2), F. Calvo (3), J. Yu (5), G-D Förster (5), V. Potin (1), S. Bourgeois (1), M.C. Marco de Lucas(1), J.B. A. Mitchell (6)
(1) Laboratoire Interdisciplinaire Carnot de Bourgogne, UMR 6303 CNRS-Université de Bourgogne Franche-Comté, 9 avenue Alain Savary, BP 47870, 21078 Dijon cedex, (2) NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif sur Yvette Cedex, (3) Institut de Radioprotection et de Sûreté Nucléaire (IRSN), PSN-RES, SCA, LPMA, Gif sur Yvette 91192, France, (4) Laboratoire Interdisciplinaire de Physique, UMR 5588 CNRS-Université Joseph Fourier, BP 87, 38402 Saint Martin d'Hères, France, (5) Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Université de Lyon, 69622 Villeurbanne Cedex, France, (6) Institut de Physique de Rennes, UMR 6251 CNRS-Université de Rennes 1, 35042 Rennes Cedex

11:45 **Diffusive aggregation of fractal TiO2 nanostructures by non-thermal laser ablation at ambient pressure** — X 5.5
Emanuele Cavaliere1, Gabriele Ferrini1, Luca Celardo1, D. Archetti1, Pasqualantonio Pingue2 Luca Gavioli1
1 Interdisciplinary Laboratories for Advanced Materials Physics (i-LAMP) & Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, via dei Musei 41, I-25121 Brescia, Italy 2 Laboratorio NEST, Scuola Normale Superiore, Piazza San Silvestro 12, 56127 Pisa, Italy

12:00 **Residual stress mapping and minimization in femtosecond laser glass welding** — X 5.6
M. Gstalter, G. Chabrol, A. Bahouka, K-D. Dorkenoo, J-L. Rehspringer, S. Lecler
IREPA LASER, Pôle API, Illkirch-Graffenstaden, France , ICube, University of Strasbourg UMR CNRS, Strasbourg, France , IPCMS, CNRS UMR 7504, Strasbourg, France , ECAM Strasbourg-Europe, Espace Européen de l'entreprise, Schiltigheim, France

12:15 **Lunch**

Modelling of laser ablation : Stela Canulescu

13:30 **Two mechanisms of nanoparticle generation in pulsed laser ablation in liquids: The origin of the bimodal size distribution** — X 6.1
Cheng-Yu Shih, Maxim V. Shugaev, Chengping Wu, Leonid V. Zhigilei
University of Virginia, Department of Materials Science and Engineering, 395 McCormick Road, Charlottesville, VA 22904-4745

14:00 **Combining the plasmonic and hydrodynamic models of LIPSS formation** — X 6.2
E. L. Gurevich, S. Maragkaki, Y. Levy, T. J.-Y. Derrien, N. M. Bulgakova
Ruhr-University Bochum, Germany HiLASE Centre, Institute of Physics AS CR, Czech Republic

14:15 **Theoretical investigation of periodic nanostructuring mechanism of Au due to UV laser pulse with and without spatial confinement** — X 6.3
Dmitry S. Ivanov, Andreas Blumensteine, Martin E. Garcia, Baerbel Rethfeld, Jourgen Ihlemann, Peter Simon
Dmitry S. Ivanov - University of Kassel, Germany, Andreas Blumensteine - Laser Laboratorium Göttingen e.V. Göttingen, Germany, Martin E. Garcia - University of Kassel, Germany, Baerbel Rethfeld - technical University of Kaiserslautern, Germany, Jourgen Ihlemann - Laser Laboratorium Göttingen e.V. Göttingen, Germany, Peter Simon - Laser Laboratorium Göttingen e.V. Göttingen, Germany

14:30 **Interatomic potentials for laser excited solids derived from ab-initio molecular dynamics simulations** — X 6.4
Bernd Bauerhenne, Eeuwe S. Zijlstra, Martin E. Garcia
Theoretical Physics, University of Kassel, Heinrich-Plett-Strasse 40, D-34132 Kassel, Center for Interdisciplinary Nanostructure Science and Technology (CINSaT), Heinrich-Plett-Strasse 40, D-34132 Kassel, Germany

Laser-based analytical methods : Gerard O'Connor

14:45 **Isolated Nanoparticle Analysis by Laser-Induced Breakdown Spectroscopy** — X 7.1
Jessica Picard [1], Jean-Baptiste Sirven [2], Olivier Sublemontier [1]
[1] NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif-sur-Yvette France, [2] DEN – Service d'Etudes Analytiques et de Réactivité des Surfaces (SEARS), CEA, Université Paris-Saclay, F-91191, Gif sur Yvette cedex, France

15:00 **Substrate-mediated laser ablation for micro-sampling of biological tissues: Fundamental mechanisms and applications** — X 7.2
Tony MAULOUET1/2, Benoit FATOU1/2, Maxence WISZTORSKI1, Cristian FOCSA2, Michel SALZET1, Michael ZISKIND2, Isabelle FOURNIER1 1Laboratoire PRISM INSERM U1192, Université Lille 1, Villeneuve d'Ascq, France 2Laboratoire PhLAM-CNRS UMR 8523, Université Lille 1, Villeneuve d'Ascq, France
[1] B. Fatou, M. Wisztorski, C.Focsa, M. Salzet, M. Ziskind & I, Fournier, Sci. Rep. 5, 18135 (2015)

15:15 **Coffee break**

Poster session X :
Gerard O'Connor, Florence Garrélie, Esther Rebollard

16:00 **Laser modification of luminescent hybrid materials based on lead oxyfluoride glasses and metal organic phosphors** — X P_1.1
Petrova O.B., Anurova M.O., Saifutyarov R.R., Khomyakov A.V., Fedotov S.S., Lotarev S.V., Sigaev V.N., Avetissov I.Ch.
Dmitry Mendeleev University of Chemical Technology of Russia

16:00 **Crystalline phase generation in the Bi-Ge-O system under laser treatment of glasses** — X P_1.2
Stepanova I.V., Petrova O.B., Saifutyarov R.R., Khomyakov A.V., Lipatiev A.S., Sigaev V.N., Avetissov I.Ch.
Dmitry Mendeleev University of Chemical Technology of Russia

16:00 **Reversible modification of glass embedded with gold and lead oxides through femtosecond-laser irradiation and thermal annealing** **X P_1.3**
Mohamed Cherif Sow, Jean Philippe Blondeau, Eric Millon, Chantal Leborgne, Hervé Rabat, Agnès petit, Sostaine Kaya B., Abderazek Talbi, Nadia Pellerin, and Nadjib Semmar
GREMI 14 rue d'Issoudun, BP6744 45067 Orléans Cedex 2 CEMHTI 1 Avenue de la Recherche Scientifique, 45100 Orléans

16:00 **Femtosecond and nanosecond laser cleaning for the decontamination of biocidal loaded wooden artworks** **X P_1.4**
B.A. Schmidt, S. Pentzien, A. Conradi, J. Krüger
Bundesanstalt für Materialforschung und -prüfung (BAM), Unter den Eichen 87, D-12205 Berlin, Germany

16:00 **Laser diode welding of polymer materials with a transparence fitting** **X P_1.5**
Thierry Engel (1,2,3), Manuel Flury (1,3), Pierre Alain Vetter (3)
(1) ICube UMR 7357 - Laboratoire des sciences de l'ingénieur, de l'informatique et de l'imagerie 300 bd Sébastien Brant - CS 10413 - 67412 Illkirch Cedex (2) INSA Strasbourg, 24 Boulevard de la Victoire 67084 Strasbourg Cedex France (3) IREPA LASER, Parc d'Innovation - 67400 Illkirch - France

16:00 **Laser formation and modification of copper film coating on the surface of CdTe and Cd1-xMnxTe crystals** **X P_1.6**
Nichyi S.V., Strebezhev V.M., Pylypko V.G., Yuriychuk I.M., Strebezhev V.V, Vorobets G.I., Lapshyn A.V., Maslovskyi V.V.
Physical, Technical and Computer Sciences Institute, Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine

16:00 **Tapered Lightpipe for laser material processing** **X P_1.7**
Thierry Engel(1,2,3), Manuel Flury (1,3), Eric Bernard (3)
(1) ICube UMR 7357 - Laboratoire des sciences de l'ingénieur, de l'informatique et de l'imagerie 300 bd Sébastien Brant - CS 10413 - 67412 Illkirch Cedex (2) INSA Strasbourg, 24 Boulevard de la Victoire 67084 Strasbourg Cedex France (3) IREPA LASER - Carnot Mica, Parc d'Innovation - 67400 Illkirch - France

16:00 **Laser induced nanoparticle fabrication on paper** **X P_1.8**
N.Nedyalkov1, A. Dikovska1, R. Nikov1, P. Atanasov1, D. Hirsch2, B. Rauschenbach2,A. Takami3, M. Terakawa3
1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko shousse 72, Sofia 1784, Bulgaria, 2Leibniz Institute of Surface Modification (IOM), Permoserstrasse 15, D-04318 Leipzig, Germany, 3Department of Electronics and Electrical Engineering, Keio University, 3-14-1 Hiyoshi Kohoku-ku, Yokohama-shi Kanagawa-ken, 223-8522, Japan,

16:00 **Laser Induced Periodic Surface Structures generation on polymer thin films: From ripples to 2D droplets based hexagonal patterns** **X P_1.9**
J. A. Janeš, A. Talbi, M. Vayer, C. Sinturel, N. Semmar
GREMI-UMR 7344-CNRS-University of Orleans, 14 rue d'Issoudun, BP6744, 45071 Orleans Cedex2, France, ICMN - UMR 7374 CNRS - Université d'Orléans, 1b rue de la Férollerie, CS 40059, 45071 Orléans cedex 2

16:00 **Laser-induced forward transfer of conductive inks on flexible substrates** **X P_1.10**
P. Sopeña (1), X. Arrese (2), S. González-Torres (1), J.M. Fernández-Pradas (1), A. Cirera (2), P. Serra (1)
(1) Universitat de Barcelona, IN2UB, Applied Physics Department (2) Universitat de Barcelona, MIND-IN2UB, Engineering Department: Electronics Martí i Franquès 1, 08028-Barcelona, Spain

16:00 **Thermal and optical properties changes on metal thin films induced by nanosecond laser beam accumulation** **X P_1.11**
Thi Trang Dai HUYNH and Nadjib SEMMAR
GREMI-UMR 7344, CNRS/Université d'Orléans, 14, rue d'Issoudun, BP 6744, 45067 Orléans cedex2, France

16:00 **Laser induced periodic surface structures on polymer nanocomposites with carbon nanoadditives** **X P_1.12**
R.I. Rodríguez-Beltrán1, M. Hernandez2, T.A. Ezquerra3, S. Paszkiewicz4, A. Szymczyk4, Z. Rosłaniec4, M. Castillejo 2, P. Moreno1, E. Rebollar2
1 Grupo de Aplicaciones del Láser y Fotónica (ALF-USAL), Universidad de Salamanca, Pl. de la Merced s/n, Salamanca, E-37008 Spain, 2 Instituto de Química Física Rocasolano (IQFR-CSIC), Serrano 119, Madrid 28006, Spain, 3 Instituto de Estructura de la Materia (IEM-CSIC), Serrano 121, Madrid 28006, Spain, 4 West Pomeranian University of Technology, Piastow Av. 19, PL-70310 Szczecin, Poland

16:00 **Mass removal mechanisms at pulsed ps-ns-laser ablation of Al in vacuum** **X P_1.13**
A.V.Mazhukin, V.I.Mazhukin, A.V.Shapranov, M.M.Demin
Keldysh Institute of Applied Mathematics, Russian Academy of Sciences, Miusskaya pl. 4, Moscow, 125047 Russia, e-mail: vim@modhef.ru National Research Nuclear University"MEPhI", Kashirskoe sh. 31, Moscow, 115409 Russia

16:00 **Dynamics of plume expansion and shock waves into ambient gaze at ns-laser ablation of metal** **X P_1.14**
V.I.Mazhukin, A.V.Mazhukin, A.V.Shapranov, M.M.Demin
Keldysh Institute of Applied Mathematics, Russian Academy of Sciences, Miusskaya pl. 4, Moscow, 125047 Russia National Research Nuclear University"MEPhI", Kashirskoe sh. 31, Moscow, 115409 Russia

16:00 **Advances in laser-induced forward transfer of sensing micro-devices** **X P_1.15**
Alexandra Palla Papavlu1,2, Mihaela Filipescu1, Maria Dinescu1, Thomas Lippert2
1) Lasers Department, National Institute for Lasers, Plasma, and Radiation Physics, 077125 Magurele, Romania, 2) Research with Neutrons and Muons Division, Paul Scherrer Institute, 5232 Villigen PSI, Switzerland

16:00 **Laser assisted nanoparticles formation inside gold doped borosilicate glass** **X P_1.16**
N.Nedyalkov1, M.E. Koleva1, N.E. Stankova1, R. Nikov1, P.A. Atanasov1, M. Grozeva2, E. Yordanova2, G. Yankov2, D. Karashanova3, Y. Nakajima4, M. Terakawa4
1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko shousse 72, Sofia 1784, Bulgaria, 2Institute of Solid State Physics, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee, 1784, Bulgaria, 3Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, G. Bonchev Street, bl. 109, Sofia 1113, Bulgaria, 4Department of Electronics and Electrical Engineering, Keio University, 3-14-1 Hiyoshi Kohoku-ku, Yokohama-shi, Kanagawa-ken, 223-8522, Japan,

16:00 **Antireflective coatings for high power laser optics produced by RF-PLD** **X P_1.17**
M. Filipescu 1, A. Bercea 1,2, L. C Nistor 3, S.V. Nistor 3, D. Colceag 1, V. Ion 1, M. Moldovan 1, M. Dinescu 1
1 National Institute for Lasers, Plasma and Radiation Physics, 077125 Magurele, Romania 2 University of Craiova, Faculty of Sciences, Craiova, Romania 3 National Institute of Materials Physics, 077125 Magurele, Ilfov, Romania

16:00 **Production of Precursors for Micro-Concentrator Solar Cells using Femtosecond Laser-Induced Forward Transfer** **X P_1.18**
Stefan Andree, Berit Heidmann, Franziska Ringleb, Katharina Eylers, Jörn Bonse, Torsten Boeck, Martina Schmid, Jörg Krüger
Bundesanstalt für Materialforschung und –prüfung (BAM), Unter den Eichen 87, D-12205 Berlin, Germany, Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany, Universität Duisburg Essen, Forsthausweg 2, D-47057 Duisburg, Germany, Leibniz-Institut für Kristallzüchtung, Max-Born-Str. 2, D-12489 Berlin, Germany

16:00 **Tailored biomimetic nano-hibrid coatings obtained by MAPLE for inflammatory response evaluation in vitro** **X P_1.19**
M. Icriverzi1,2,3, L. Rusen3,V.Dinca3, S. Brajnicov3,4, V.Marascu3,5, A.Bonciu3,5, A. Cimpean2, M.Dinescu3, A. Roseanu1
1Institute of Biochemistry of the Romanian Academy, 296 Splaiul Independentei, 060031,Bucharest, Romania 2 University of Bucharest, Faculty of Biology, Bucharest Romania 3 National Institute for Lasers, Plasma, and Radiation Physics, Magurele RO-077125, Romania 4Craiova University, Faculty of Science, Craiova, Romania 5University of Bucharest, faculty of Physics, Bucharest, Romania

16:00 **TEM and AFM Studies of AlN films synthesized by Pulsed Laser Deposition** **X P_1.20**
Zs. Fogarassy1, P. Petrik1, L. Duta2, G. Stan3, I. N. Mihailescu2, M. Anastasescu4, M. Gartner4, K. Antonova5, A. Szekeres5
1 - Research Institute for Technical Physics and Materials Science, Hungarian Academy of Sciences, Konkoly Thege Miklos u. 29-33, H-1121 Budapest, Hungary 2 - National Institute for Lasers, Plasma, and Radiation Physics, 409 Atomistilor Street, 077125 Magurele, Romania 3 - National Institute of Materials Physics, 105 bis Atomistilor Street, 077125 Magurele, Romania 4 - Institute of Physical Chemistry "Ilie Murgulescu", Romanian Academy, 202 Splaiul Independentei, 060021 Bucharest, Romania 5 - Institute of Solid State Physics, Bulgarian Academy of Sciences, Tzarigradsko Chaussee 72, Sofia 1784, Bulgaria

16:00 **Laser surface texturing of PTFE** **X P_1.21**
A. Riveiro (1), A. Chantada (1), R. Soto (1), P. Pou (1), J. del Val (1), R. Comesaña (2), M. Boutinguiza (1), F. Quintero (1), F. Lusquiños (1), J. Pou (1)
(1) Applied Physics Department, University of Vigo EEI, Lagoas-Marcosende, 9. Vigo, 36310, Spain (2) Materials Eng., Applied Mech., and Construction Dpt., Universidade de Vigo, EEI Vigo, Spain

16:00 **Production of 13-93 bioactive glass nanoparticles by laser ablation in open air** **X P_1.22**
J. del Val (1), M. Boutinguiza (1), A. Riveiro (1), R. Comesaña (2), F. Arias-González (1), J. Penide (1), F. Lusquiños (1), J.R. Jones (3), J. Pou (1)
(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) Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, UK

16:00 **Synthesis by laser pyrolysis of Fe based core@ZnO shell nanopoweders for biomedical applications** **X P_1.23**
L. Gavrila-Florescu1, F. Dumitrache1, M. Balas2, C. Fleaca1, C. Locovei3, I.P. Morjan1, M. Scarisoreanu1, A. Ilie1, A. Banici1, G. Prodan4
1. National Institute for Lasers, Plasma and Radiation Physics (NILPRP), Atomistilor 409, R-077125 Magurele, Romania 2. Department of Biochemistry and Molecular Biology, University of Bucharest, 91- 95 Splaiul Independenţei, 050095, Bucharest 5, Romania 3. University of Bucharest, Faculty of Physics, 405 Atomistilor, Magurele, Romania 4.Ovidius" University, Nanotechnology and Alternative Energy Sources Institute, Mamaia 124, Constanta, Romania

16:00 **Femtosecond laser generation of microbumps on stacked Cu/Ag thin films** **X P_1.24**
Aida Naghilou [a], Jasmin S. Schubert [a], Oskar Armbruster [a], Leonid V. Zhigilei [a,b], Wolfgang Kautek [a]
[a] University of Vienna, Department of Physical Chemistry, Vienna, Austria [b] University of Virginia, Department of Materials Science and Engineering, Charlottesville, Virginia, USA

16:00 **The Influence of Irradiation Area on the Formation of Laser-Induced Periodic Surface Structures** **X P_1.25**
O. Armbruster [a], A. Naghilou [a], M. Kitzler [b], W. Kautek [a]
[a] University of Vienna, Department of Physical Chemistry, Vienna, Austria, [b] Vienna University of Technology, Photonics Institute, Vienna, Austria

16:00 **Hot electron electrochemistry induced by femtosecond laser pulses** **X P_1.26**
O. Armbruster, H. Pöhl, G. Trettenhahn, W. Kautek
University of Vienna, Department of Physical Chemistry, Vienna, Austria

16:00 **Physical, chemical and in vitro assessment of biological-derived HA thin films for a new generation of metallic implants** **X P_1.27**
L. Duta1*, G.E. Stan2, A.C. Popescu1, G. Popescu-Pelin1, A. Achim3, M. Enculescu2, I. Zgura2, P.E. Florian4, A. Roseanu4, F.N Oktar5
1National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania 2National Institute of Materials Physics, Magurele, Romania 3Center for Advanced Laser Technologies (CETAL), Magurele, Romania 4Institute of Biochemistry of the Romanian Academy, Bucharest, Romania 5Nanotechnology and Biomaterials Application & Research Centre, Marmara University, Istanbul, Turkey *Corresponding author: liviu.duta@inflpr.ro

16:00 **Microfluidic devices fabricated by laser techniques** **X P_1.28**
M. Filipescu, A. Palla Papavlu, F. Stokker-Cheregi, M. Dinescu
National Institute for Lasers, Plasma, and Radiation Physics, Magurele 077125, Romania

16:00 **PANI-Fe3O4 based coatings deposited by MAPLE for biomedical applications** **X P_1.29**
G. Popescu-Pelin1, R. C. Popescu3, M. Socol2, O. Fufa1, A. M. Holban4, C. Florica2, I. Zgura2, M. Patachia1, G. Socol1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2National Institute of Materials Physics, Magurele, Ilfov, Romania 3Horia Hulubei National Institute of Physics and Nuclear Engineering, Magurele, Ilfov, Romania 4University Bucharest, Faculty of Biology, Microbiology & Immunology Department, Bucharest, Romania

16:00 **Fast mesoporous carbon synthesis by Light Assisted Evaporation Induced Self Assembly** **X P_1.30**
Mihai Sopronyi1-2, Emanuel Axente1, Felix Sima1, Cyril Vaulot3, Luc Delmotte3, Armel Bahouka4, Camelia-Matei Ghimbeu3
1 Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, Atomistilor 409 bis, Magurele, Romania, 2 University of Bucharest, Faculty of Physics, Atomistilor 405, Magurele, Romania, 3 Université de Strasbourg, Université de Haute Alsace, Institut de Science des Matériaux de Mulhouse, CNRS UMR 7361, 15 rue Jean Starcky, 68057 Mulhouse, France, 4 IREPA LASER, Pôle API Parc d'Innovation 67400 Illkirch, France.

16:00 **Super hydrophobic thin films of hybrid fatty acids-layered double hydroxides obtained by laser techniques** **X P_1.31**
A.Matei1, R. Birjega1, A.Vlad1, D. Popescu1, R.Zavoianu2, M.C. Corobea3, M. Dinescu1
1National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., 077125 Bucharest, Magurele, Romania 2University of Bucharest, Faculty of Chemistry, Department of Chemical Technology and Catalysis, 4-12 Regina Elisabeta Bd., Bucharest, Romania 3National R.&S. Institute for Chemistry and Petrochemistry, ICECHIM, 202 Splaiul Independentei Str., CP-35-274, 060021, Bucharest, Romania

16:00 **Tailored biodegradable triblock copolymer coatings obtained by MAPLE for bioresponsive interfaces** **X P_1.32**
S. Brajnicov1,2 , V. Marascu1,3, A. Bonciu1,3, A. Moldovan1, A. Vlad1, V. Dinca1 and M. Dinescu1
1 National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-16, RO-077125, Magurele, Bucharest, Romania 2 University of Craiova, Faculty of Sciences, RO-200585, Craiova, Romania 3 University of Bucharest, Faculty of Physics, RO?077125, Magurele, Romania

16:00 **Iron doped LiCoPO4thin films for lithium-ion microbatteries obtained by ns pulsed laser deposition** **X P_1.33**
A. Smaldone, S. Brutti, A. De Bonis, N. Ciarfaglia, A. Santagata, R. Teghil
A. Smaldone, S. Brutti, A. De Bonis, N. Ciarfaglia, R. Teghil Dipartimento di Scienze, Universita di Basilicata, Via dell'Ateneo Lucano 10, 85100 Potenza, Italy A. Santagata ICNR-ISM), UOS Tito Scalo, C.da S. Loja, Tito Scalo, Potenza, Italy

16:00 **Development of Raman statistical characterization method used in as synthesized phase separated nano-TiO2 by Laser Pyrolysis** **X P_1.34**
Alina Ilie 1,2, Scarisoreanu Monica 1, Florian Dumitrache 1, Ion Mihailescu 1, Ana-Maria Banici 1,3, Elena Dutu 1, 2, Claudiu Fleaca 1, Lavinia Gavrila-Florescu 1, Iuliana Morjan 1
1.National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania, 2.University of Bucharest, Faculty of Physics, Bucharest, Romania, 3. University of Craiova, Faculty of Mathematics and Natural Sciences, Craiova, Romania,

16:00 **Porous carbon thin films by Matrix Assisted Pulsed Laser Evaporation from environmental friendly organic precursors** **X P_1.35**
Emanuel Axente1, Mihai Sopronyi1, Camélia Matei Ghimbeu2*, Felix Sima1*
1National Institute for Lasers, Plasma and Radiation Physics, Atomistilor 409 bis, RO-77125, Magurele, Romania, 2Institut de Science des Matériaux de Mulhouse, CNRS UMR 7361, 15 rue Jean Starcky, 68057 Mulhouse, France.

16:00 **ZnO nanostructures produced by pulsed laser deposition in open air** **X P_1.36**
Ru.G. Nikov, A.Og. Dikovska, N.N. Nedyalkov, P.A. Atanasov
Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, Sofia 1784, Bulgaria

16:00 **Synthesis and morphological characterization of titania NPs generated by fs laser irradiation of TiCl3 aqueous solution** **X P_1.37**
Ana-Maria Banici(Niculescu)1,2, Claudiu Fleaca1, Gabriel Cojocaru1, Ana Cucu3, Catalina Albu1, Romeo Banici1
1National Institute for Lasers, Plasma and Radiation Physics, Lasers Dept, Bucharest-Magurele, 409, Atomistilor Street, 077125, Romania 2University of Craiova, Faculty of Mathematics and Natural Sciences, RO-200585, Craiova, Romania 3 University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Bucharest-Magurele, Romania

16:00 **Effects of short and ultrashort pulsed laser irradiation on the physical and chemical properties of nanocomposite biopolymers** **X P_1.38**
N. E. Stankova*1, P.A. Atanasov1, E. Iordanova2, G. Yankov2, E. Radeva2, M. Grozeva2, M. Zamfirescu3, B.St. Calin3, C. R. Luculescu3, M.D. Dumitru3, K. Grochowska4, G. Śliwiński4, N. Fukata5
1Institute of Electronics, Bulgarian Academy of Sciences, 72 Tzarigradsko shousse blvd., 1784 Sofia, Bulgaria, 2Institute of Solid State Physics, Bulgarian Academy of Sciences, 72 Tsarigradsko shousse blvd., 1784 Sofia, Bulgaria, 3National Institute for Lasers, Plasma, and Radiation Physics (INFLPR), Strada Atomistilor nr. 409 P.O. Box MG-54 RO-77125, Magurele, Romania 4Photophysics Department, The Szewalski Institute, Polish Academy of Sciences, 14 Fiszera St, 80-231 Gdańsk, Poland, 5International Center for Materials for NanoArchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1Namiki, Tsukuba 305-0044, Japan

16:00 **Ultrashort-pulsed thin-film laser ablation of Ge2Sb2Te5 with applications for near-field marking of metallic nanostructures** **X P_1.39**
Søren Hanghøj Møller (1), Peter Lindbjerg Tønning (1), Adnan Nazir, Emil Haldrup Eriksen (1), Joakim Vester-Petersen (2), Brian Julsgaard (1,3), Søren Peder Madsen (2), and Peter Balling (1,3).
(1) Department of Physics and Astronomy, Aarhus University, Ny Munkegade 120, DK-8000 Aarhus C, Denmark, (2) Department of Engineering, Aarhus University, Inge Lehmanns Gade 10, DK-8000 Aarhus C, Denmark, Interdisciplinary Nanoscience Center (iNANO), Aarhus University, Gustav Wieds Vej 14, DK-8000 Aarhus C, Denmark

16:00 **Influence of the laser pulse repetition rate and energy on the morphology of Au and Ag nanostructures fabricated by pulsed laser** **X P_1.40**
Nikolov A., Balchev I., Nedyalkov N., Karashanova D., Kostadinov I.
Nikolov A1., Balchev I.1, Nedyalkov N.1, Karashanova D.2, Kostadinov I.3, 1 Institute of Electronics, Bulgarian Academy of Sciences, 72, Tzarigradsko Chaussee, Sofia 1784, Bulgaria, 2 Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., bld. 109, Sofia 1113, Bulgaria, 3 Institute of Solid State Physics, Bulgarian Academy of Sciences, 72, Tzarigradsko Chaussee, Sofia 1784, Bulgaria,

16:00 **Features of Structure Formation in the Surface Layers of Iron Alloys During Laser Alloying** **X P_1.41**
S.I. Sidorenko, Ie.V. Ivashchenko, N.V. Franchik
Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine

16:00 **MAPLE Composite coatings enriched with gentamicin loaded magnetic nanoparticles for prevention of bone tissue infections** **X P_1.42**
A. Visan1, O.Fufa1, C.Matei1, M. Socol2, G.Popescu-Pelin1 ,R.C.Popescu3, D. Savu3, R. Cristescu1, D.Craciun1, G. Socol1*
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2 National Institute of Materials Physics, Magurele, Ilfov, Romania 3Life and Environmental Physics Department,Horia Hulubei National Institute of Physics and Nuclear Engineering,Magurele,Ilfov,Romania.

16:00 **Colloidal ZnO nanostructures fabricated by nanosecond laser ablation in different liquids** **X P_1.43**
R.G. Nikov, N.N. Nedyalkov, P.A. Atanasov, D.B. Karashanova
Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, Sofia 1784, Bulgaria Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, G. Bonchev Street, bl. 109, Sofia 1113, Bulgaria

16:00 **Pulsed laser deposition of Diamond-like carbon: Plasma dynamics and characterisation** **X P_1.44**
J. Hulík1,2, F. Le Normand1, F. Antoni 1 , W. Uhring1, M. Angus2, J. Miskovicova2, P. Veis2
1: ICube, MaCEPV, 23 rue du Loess, 67037 Strasbourg, France 2: Comenius University, Faculty of Mathematics, Physics and Informatics, Department of Experimental Physics, Mlynská dolina F1, 84248 Bratislava, Slovakia

16:00 **NH3-sensitzed laser pyrolysis synthesis of Sn-Fe-N@Polycarbosilazane nanocomposites as energy storage materials** **X P_1.45**
C.T. Fleaca1, F. Dumitrache1, E. Dutu1, A. Ilie1,4, A.-M. Banici1,5, E. Vasile3, C. Vlaic2, A. Bund2
1 NILPRP, Atomistilor 409, Magurele Bucharest, Romania 2 Institute für Werkstofftechnik, FG Electrokemie und Galvanotechnik, Ilmenau Technische Universitat, Gustav Kirchoff 6 (Arrheniusbau) 98693, Ilmenau, Germany 3 Politehnica University of Bucharest, Faculty of Applied Chemistry and Materials Science, Department of Oxide Materials and Nnaomaterials, Gh. Polizu 1-7, Bucharest Romania 4 University Bucharest, Faculty of Physics, Atomistilor 405, Magurele Bucharest, Romania 5 University of Craiova, Faculty of Mathematics and Natural Sciences, A.I. Cuza 13, Craiova, Romania

16:00 **Laser processing of ophthalmic polydimethylsiloxane (PDMS) by high-repetition-rate femtosecond pulses** **X P_1.46**
D. Sola (1), A. Orera (2), M.J. Clemente (3), R. Cases (4), P. Artal (1)
(1) Laboratorio de Óptica, Centro de Investigación en Óptica y Nanofísica. Universidad de Murcia, Campus Espinardo. 30.100 Murcia, Spain, (2) Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC. Dpto. Física de la Materia Condensada. 50.009 Zaragoza, Spain, (3) Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC. Dpto. Química Orgánica. 50.009 Zaragoza, (4) Departamento de Física de la Materia Condensada, Universidad de Zaragoza. 50.009 Zaragoza, Spain,

16:00 **Growth and properties of calcium cobaltite thin films by pulsed-laser deposition** **X P_1.47**
V. Rogé (1), T.T.D. Huynh (1), A. Stolz (1), N. Semmar(1), C. Cachoncinlle (1), J. Perriere (2,3), E. Millon (1)
1) GREMI, UMR 7344 CNRS-Université Orleans, 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

16:00 **Repassivation investigations on Aluminium by the laser depassivation method - Physical Chemistry of the Passive State** **X P_1.48**
Tristan O. Nagy, Morris Weimerskirch, Ulrich Pacher, Wolfgang Kautek
Department of Physical Chemistry - University of Vienna, Faculty of Physics- University of Vienna, Department of Physical Chemistry - University of Vienna, Department of Physical Chemistry - University of Vienna

16:00 **Pulsed Laser Deposition of LaB6 and HfC thin-films as thermionic emitters** **X P_1.49**
A. Bellucci (1), M. Girolami (1), M. Mastellone (1), S. Orlando (2), A. Mezzi (3), S. Kaciulis (3), R. Polini (1, 4), and D. M. Trucchi (1)
(1) Istituto di Struttura della Materia (ISM) del Consiglio Nazionale delle Ricerche (CNR) Sez. Montelibretti – Via Salaria km 29.300 00015 Monterotondo (RM), (2) Istituto di Struttura della Materia (ISM) del Consiglio Nazionale delle Ricerche (CNR) Sez. Tito Scalo – Contrada Santa Loja, 85050 Tito Scalo (Pz), (3) Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) del Consiglio Nazionale delle Ricerche (CNR) Sez. Montelibretti – Via Salaria km 29.300 00015 Monterotondo (RM), (4) Dipartimento di Scienze Tecnologie Chimiche, Università di Roma «Tor Vergata», Via della Ricerca Scientifica, 1, 00133 Rome, Italy

16:00 **HIGH PRECISION 3D MICRO STRUCTURING OF MOLYBDENUM FOR THE GENERATION OF FRAMED FOILS BY ULTRASHORT PULSE LASER ABLATION** **X P_1.50**
Mathias Müller, Robby Ebert, Horst Exner
Hochschule Mittweida, Technikumplatz 17, D-09648 Mittweida

16:00 **Hydrophobic micro-nano patterning using 355 nm UV-pulsed laser on the polyimide film** **X P_1.51**
Gyeongju Je(1), Hyesu Kim(1), Junhan Park(1), Danhee Yoon(2), Bosung Shin(1,2)
(1)Department of Cogno-Mechatronics Engineering/Pusan National University , (2) CRC of 3D Laser-aided Innovative Manufacturing Technology/Pusan National University

16:00 **Zn doped Tin oxide nanoparticles synthesized by laser pyrolysis: the structural and optical properties** **X P_1.52**
E. Dutu1,2, C.T. Fleaca1, F. Dumitrache1, I. Morjan1, A-M. Banici1, 3, I. Sandu1, A. Ilie1, 2, G. Prodan4, C. Locovei2
1Laser Photochemistry Laboratory, National Institute for Lasers, Plasma and Radiation Physics (NILPRP), Atomistilor Str, no. 409, 077125, Bucharest-Magurele, Romania, 2University of Bucharest - Faculty of Physics, Atomiştilor Str, no. 405, 077125, Bucharest-Magurele, Romania, 3 University of Craiova, Faculty of Mathematics and Natural Sciences, RO-200585, Craiova, Romania, 4Ovidius University of Constanta, Mamaia Avenue no. 124, 900524, Constanta, Romania,

16:00 **Optical properties of Na1/2Bi1/2TiO3-BaTiO3 thin films obtained by pulsed laser deposition** **X P_1.53**
V. Ion, N. D. Scarisoreanu, A. Andrei, M. Dinescu
National Institute for Laser, Plasma and Radiation Physics, Magurele, Bucharest, Romania

16:00 **Combinatorial deposition of C/W/Mg ternary composite coatings by pulsed laser deposition (PLD)** **X P_1.54**
L.N. Dumitrescu1,2, V.Ion1, A.Moldovan1, A Bonciu1,3, D. Colceag1, M. Dinescu1.
1National Institute for Laser, Plasma and Radiation Physics, Magurele, Romania 2University of Craiova, Faculty of Sciences, Craiova, Romania 3University of Bucharest, Faculty of Physics, Bucharest, Romania

16:00 **Improve stability of anode 40NiO-YSZ thin films reference electrode with Gd-doped Ceria interface deposited by PLD on YSZ electr** **X P_1.55**
Rovena Pascu1, Angela Vlad1, Ioana Pintilie2, George Epurescu1
1. National Institute for Laser, Plasma and Radiation Physics, Magurele, Romania 2. National Institute of Materials Physics, Magurele, Romania

16:00 **Sub-micron and nanosized features in laser-induced periodic surface structures** **X P_1.56**
Nataliya Berezovska1, Igor Dmitruk1, Oleg Yeshchenko1, Svyatoslav Vovdenko1, Andriy Dmytruk2, Ivan Blonskyi2
1. Physics Faculty, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine, 2. Photonic Processes Department, Institute of Physics, NASU, Kyiv, Ukraine.

16:00 **Biocompatibility studies of lead free (Ba1–xCax)(ZryTi1–y)O3 thin films obtained by pulsed laser-based techniques** **X P_1.57**
V. Ion (1), M. Dinescu (1), M. Icrivezi(2), A. Andrei (1), A.I. Bercea (1), R. Birjega (1), A. Bonciu(1), V. Dinca(1), A. Roseanu(2), N.D. Scarisoreanu (1)
1) National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor St, RO-077125, Magurele, Romania, 2) Institute of Biochemistry of the Romanian Academy, 296 Splaiul Independentei, RO-060031 Bucharest, Romania

16:00 **Investigation of the layer thickness- and wavelength-dependence of laser stratigraphy on Cu and Ni coatings using LIBS** **X P_1.58**
Evgeniya Paulis, Ulrich Pacher, Morris J.J. Weimerskirch, Tristan O. Nagy, Wolfgang Kautek
Department of Physical Chemistry - University of Vienna, Department of Physical Chemistry - University of Vienna, Faculty of Physics - University of Vienna, Department of Physical Chemistry - University of Vienna, Department of Physical Chemistry - University of Vienna

16:00 **On the performances of laser-induced breakdown spectroscopy for quantitative steel analyses** **X P_1.76**
E. Axente1, O. Fufa1, G. Dorcioman1, G. Socol1, V. Craciun1 and J. Hermann2
1Laser-Surface-Plasma Interactions Laboratory, Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, RO-077125, Măgurele, Ilfov, Romania.
2LP3, CNRS – Aix-Marseille University, 163 Av. de Luminy, 13288 Marseille, France.

16:00 **Phase relations and functional properties of BaTiO3 modified NaBiTiO3 solid solution thin films obtained by laser techniques** **X P_1.59**
N. D. Scarisoreanu (1), F. Craciun (2), A. Andrei (1), V.Ion (1), R. Birjega (1) , M. Dinescu (1)
1) NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania 2) CNR-Istituto dei Sistemi Complessi, Via del Fosso del Cavaliere 100, I-00133, Rome, Italy

16:00 **Laser ablation in liquid of complex oxide materials** **X P_1.60**
N. D. Scarisoreanu (1), A. Rotaru (1), V. Ion (1), V. Teodorescu (2), M. Dinescu (1)
1) NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania. 2) NIMP-National Institute of Materials Physics, 077125 Bucharest-Magurele, Romania

16:00 **Synthesis and characterization of Cu2PO4OH, a near-infrared absorbing material** **X P_1.61**
Elena Pérez-Barrado1,2, Richard J. Darton2, Andrew Spiller1 and Dieter Guhl1
1 Keeling & Walker Ltd, Whieldon Rd, Stoke-on-Trent ST4 4JA, United Kingdom. 2 School of Chemical and Physical Sciences, Keele University, Staffordshire ST5 5BG, United Kingdom.

16:00 **Studies on perovskite film ablation and scribing with ns, ps and fs laser pulses** **X P_1.62**
Lukas Bayer1, Martin Ehrhardt1,2, Pierre Lorenz1, Stefano Pisoni3, Stephan Buecheler3, Ayodhya N. Tiwari3, Klaus Zimmer1
1 Leibniz-Institut für Oberflächenmodifizierung e. V., Permoserstraße 15, 04318 Leipzig, Germany, 2 Advanced Launching Co-innovation Center, Nanjing University of Science and Technology, #200 XiaoLingWei, 210094 Nanjing, Jiangsu, People's Republic of China, 3 Laboratory for Thin Films and Photovoltaics, Empa-Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, 8600 Duebendorf, Switzerland

16:00 **Functionalized organic heterostructures deposited by MAPLE on flexible substrate** **X P_1.63**
M. Socol1, N. Preda1, C. Breazu1, A. Stanculescu1, M. Girtan2, G. Socol3
1National Institute of Material Physics, 405A Atomistilor Street, 077125, Magurele, Romania 2Laboratoire de Photonique d'Angers, Université d'Angers, 2, Bd. Lavoisier, 49045, Angers, France 3National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, 077125, Magurele, Romania

16:00 **Influence of the liquid ionic strength on precursors of titania self-assembled nanostructures generated by LAL** **X P_1.64**
A. Guarnaccio (a), A. Santagata (a), S. Orlando (a), A. De Bonis (b), R. Teghil (b), A. Laurita (b), L. Medici (c)
(a) CNR-ISM, SDS - Unit of Tito Scalo - Zona Industriale, 85050 Tito Scalo (PZ), Italy, (b) Dipartimento di Scienze, Università degli Studi della Basilicata, Viale dell'Ateneo Lucano, 10 - 85100 Potenza, Italy, (c) CNR, IMAA, Area della Ricerca di Potenza -Zona Industriale, 85050 Tito Scalo (PZ), Italy.

16:00 **Towards the optical control in single molecule electrochemical sensors** **X P_1.65**
Marco Riccardi, Artem Bakulin, Aleksandar P. Ivanov, Binoy Paulose Nadappuram and Joshua B. Edel
Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, United Kingdom

16:00 **Organic heterostructures obtained by MAPLE on nanostructured ITO** **X P_1.66**
C. Breazu1,2, G. Socol3, F. Stanculescu2, A. Stanculescu1, D. Dragoman2,4, N. Preda1, M. Socol1
1. National Institute of Material Physics, 405 bis Atomistilor Street, 077125, Magurele, 2. University of Bucharest, Faculty of Physics, 405 Atomistilor Street, 077125, Bucharest, Romania 3. National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, 077125, Magurele, Romania 4. Academy of Romanian Scientists, Splaiul Independentei 54, 050094 Bucharest, Romania

16:00 **A non-differentiable approach for modeling laser ablation plasma dynamics** **X P_1.67**
S.A. Irimiciuc1,2, S. Gurlui2, P. Nica3, C. Focsa1, M. Agop3
1Univ. Lille, CNRS, UMR 8523 - PhLAM - Physique des Lasers, Atomes et Molécules, F-59000 Lille, France 2Faculty of Physics, Atmosphere Optics, Spectroscopy and Lasers Laboratory, "Alexandru Ioan Cuza" University, 700506 Iasi, Romania
3Department of Physics, "Gh. Asachi" Technical University, 700050 Iasi, Romania

16:00 **Versatile two-dimensional transition metal dichalcogenides** **X P_1.68**
Kévin Affannoukoué, Stela Canulescu, Jørgen Schou
DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark

16:00 **Thin coatings based on nanostructured eucalypt functionalized mangnetite nanoparticles entrapped in polylactic acid with biologi** **X P_1.69**
Alexandru Mihai Grumezescu1,*, Valentina Grumezescu1,2, Alina Maria Holban1,3, Anton Ficai1, Gabriel Socol2, Roxana Trusca1, Carmen Mariana Chifiriuc3
1Department of Science and Engineering of Oxide 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

16:00 **MAPLE fabricated PLGA-Fe3O4-cefepim coatings for prevention of infections at the bone-implant interface** **X P_1.70**
Valentina Grumezescu1,2,*, Ecaterina Andronescu1, Anton Ficai1, Alina Maria Holban3,4, Alexandru Mihai Grumezescu3, Gabriel Socol2, Irina Negut2, Roxana Trusca1, Carmen Mariana Chifiriuc3,4
1Department of Science and Engineering of Oxide 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 4 Research Institute of the University of Bucharest-ICUB, Bd. M. Kogălniceanu 36-46, 050107, Bucharest, Romania

16:00 **Fe3O4 nanoarchitectures functionalized with eugenol modulate virulence, biofilm formation and Quorum Sensing molecular signaling** **X P_1.71**
Alina Maria Holban1,2,3, Alexandru Grumezescu2, Mariana Carmen Chifiriuc1,2, Valentina Grumezescu4, Lia Mara Ditu1,2, Carmen Curutiu1,2, Ani Cotar2, Ecaterina Sarbu,2, Ecaterina Andronescu3, Veronica Lazar1,2
1Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1–3 Portocalilor Lane, Sector 5, 77206 Bucharest, Romania 2Research Institute of the University of Bucharest, Bd. M. Kogălniceanu 36-46, 050107, Bucharest, Romania
3Department of Science and Engineering of Oxide Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1–7 Polizu Street, 011061 Bucharest, Romania 4Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania

16:00 **Magnetite nanocoatings for the active release of lysosim at bone-implant interface** **X P_1.72**
Alexandru Mihai Grumezescu1, Valentina Grumezescu1,2,*, Ecaterina Andronescu1, Anton Ficai1, Alina Maria Holban1,3, Gabriel Socol2, Mariana Carmen Chifiriuc4
1Department of Science and Engineering of Oxide 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 3Department of Microbiology and Immunology, Faculty of Biology, University of Bucharest, 1-3 Portocalelor Lane, Bucharest, Romania 4Research Institute of the University of Bucharest, Bd. M. Kogălniceanu 36-46, 050107, Bucharest, Romania

16:00 **Electromagnetic Waves Generation in Femtosecond Laser Irradiation of Metalls** **X P_1.73**
A.Marcu, A.Groza, M.Ganciu, B.Mihalcea, A. Achim, R. Ungureanu, G. Cojocaru, M.Serbanescu, C. Diplasu, G. Giulbega
National Institute for Laser, Plasma and Radiation Physics (INFLPR), Atomistilor 409, Magurele 077125, Romania.

16:00 **CHEMICAL-MAPPING IMPROVEMENTS WHEN USING DOUBLE-PULSE LASER-INDUCED BREAKDOWN SPECTROSCOPY** **X P_1.74**
R. Cerrato, A. Casal, M.P. Mateo, G. Nicolas
Universidad de A Coruña, Dpto. Ingeniería Industrial II, Laser Applications Laboratory, C/ Mendizabal s/n, 15403 Ferrol, Spain, Tel.: +34 881013274, fax: +34 981337410, gines@udc.es

16:00 **Modification of W surfaces by exposure to hollow cathode plasmas** **X P_1.75**
C. Stancu, F. Stokker-Cheregi, A. Andrei, M. Dinescu, G. Dinescu
National Institute for Lasers, Plasma and Radiation Physics, 077125 Magurele, Romania

Wednesday 24 May 2017

Joint session with Symposium T:
Oxide thin films and nanostructures grown by pulsed laser deposition :
J. Shou and V. Cracium

09:00 **Pulsed Laser Deposition of Amorphous Ultrasmall Nanoparticles as Metastable &#8220,Building Blocks&#8221, for Crystalline Films and Nanostructures** **X 8.1**
David B. Geohegan, Masoud Mahjouri-Samani, Mengkun Tian*, Mina Yoon , Gyula Eres, Alex A. Puretzky, Kai Wang, Christopher M. Rouleau, Kai Xiao, Miaofang Chi, Gerd Duscher*
1) Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA 2) *Dept. of Materials Science and Engineering, University of Tennessee, Knoxville, TN, USA

09:30 **Textured nanocrystalline EuO thin films grown at RT by reduction from a Eu< sub>2< /sub>O< sub>3< /sub> target** **X 8.2**
A. Mariscal(1), A. Quesada(2), A. Tarazaga Martín-Luengo(3), A. Bonanni(3), J. F. Fernández(2), R. Serna(1).
(1) Laser Processing Group, Instituto de Óptica, CSIC, C/Serrano 121, 28006 Madrid, Spain, < br> (2) Ceramics for Smart Systems Group, Instituto de Cerámica y Vidrio, C/ Kelsen 5, 28049 Madrid, Spain, < br> (3) Nitride Compound Semiconductors Research group, JKU Institute of Semiconductor and Solid State Physics, Altenbergerstr. 69, 4040 Linz, Austria.

09:45 **Epitaxial growth of rare earth doped cobalt ferrite thin films by pulsed laser deposition** **X 8.3**
Elodie Martin, Francois Roulland, Geneviève Pourroy, Nathalie Viart, Christophe Lefèvre
Institut de Physique et Chimie des matériaux de Strasbourg

10:00 **Coffee break**

10:30 **KNN perovskite thin films grown by PLD for tunable microwave devices: influence of the deposition parameters** **X 8.4**
B. Aspe1,2, F. Cissé1,2, X. Castel2, V. Demange1, S. Députier1, V. Bouquet1, S. Ollivier1, R. Sauleau2 , M. Guilloux-Viry1
1 ISCR, UMR-6226/Université de Rennes 1, Campus de Beaulieu, 35042 RENNES, FRANCE, 2 IETR, UMR-6164/IUT de Saint-Brieuc/Université de Rennes 1, 18 rue Henri Wallon, 22004 SAINT-BRIEUC & Campus de Beaulieu, 35042 RENNES, FRANCE

10:45 **Critical current and pinning potential in nanostructured YBa2Cu3O7 superconducting films grown by PLD** **X 8.5**
A.Crisan, I.Ivan, L. Miu
National Institute for Materials Physics Bucharest, 405A Atomistilor Str., 077125 Magurele, Romania

11:15 **Recent advances in large area Pulsed Laser Deposition, epitaxial growth of complex oxides on silicon** **X 8.6**
R.Groenen, C.A.J. Damen, G. Koster, G. Rijnders
Twente Solid State Technology, MESA+ Institute for Nanotechnology, University of Twente, The Netherlands, P.O. Box 256, 7500 AG Enschede, The Netherlands

11:30 **Deposition of epitaxial PMN-PT on silicon wafers for Piezoelectronic Transduction Memory Devices** **X 8.7**
M. Dekkers*1, M. Nguyen1, N. Hildenbrand1, S. Abel2, F. Eltes2, J. Fompeyrine2, P. Wittendorp3
1 Solmates BV, Drienerlolaan 5 (building 46), 7522 NB, Enschede, The Netherlands
2 IBM Research GmbH, Zurich Research Laboratory, Säumerstrasse 4, CH-8803 Rüschlikon, Switzerland 3 SINTEF Digital, MiNaLab, Oslo, Norway

12:00 **Lunch**

Laser deposition of materials : Eric Millon

13:30 **Dielectric Al< sub>2< /sub>O< sub>3< /sub> Encapsulation of WSe< sub>2< /sub> Monolayers by Pulsed Laser Deposition** **X 9.1**
Javier Martín-Sánchez (1*), Antonio Mariscal (2), Marta Da Luca (3), Aitana Tarazaga Martín-Luengo (1), Alberta Bonanni(1), Ilaria Zardo (3), Rosalía Serna (2*),Rinaldo Trotta (1*), and Armando Rastelli (1)
(1) Institute of Semiconductor and Solid State Physics, Johannes Kepler University, Altenbergerstrasse 69, A-4040, Linz, Austria., (2) Laser Processing Group, Instituto de Óptica, CSIC, C/Serrano 121, 28006 Madrid, Spain., (3) Department of Physics, University of Basel, Klingelbergstrasse 82, 4056, Basel. Switzerland, (*) Corresponding authors.

14:00 **Pulsed laser deposition of sulfur-chalcogenides &#8211, the strongly non-stoichiometric material transfer** **X 9.2**
Andrea Cazzaniga, Rebecca B. Ettlinger, Stela Canulescu, Jørgen Schou
DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denamrk

14:15 **Lateral variation of properties in PLD grown films** **X 9.3**
D. Craciun1, G. Socol1, O. Fufa1, D. Cristea2, D. Pantelica3, P. Ionescu3, R. Trusca4, E. Lambers5, A. C. Galca6, and V. Craciun1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania, 2Materials Science Department, Transilvania University, Brasov, Romania, 3Horia Hulubei National Institute for Physics and Nuclear Engineering, Magurele, Romania, 4Polytechnic University of Bucharest, Bucharest, Romania, 5MAIC, University of Florida, Gainesville, USA, 6National Institute for Materials Physics, Magurele, Romania

14:30 **Size controlled stoichiometric silicon-germanium nanoparticles obtained by pulsed laser deposition.** **X 9.4**
F. Stock, F. Antoni, F. Le Normand, P. Pfeiffer
ICube, D-ESSP, 23 rue du Loess, 67037 STRASBOURG FRANCE

14:45 **Laser Deposition of Magnetic SmCo nanoparticles** **X 9.5**
L. Allocca°, U. Gambardella*, A. Morone
Consiglio Nazionale delle Ricerche – Istituto di Struttura della Materia U.O. di Tito Scalo, Zona Industriale di Tito Scalo, I85050 ° Istituto Motori, Viale Marconi 8, Napoli I80125
*Istituto Nazionale di Fisica Nucleare, Sez. di Napoli, Via Cinthia I 80125

15:00 **The fabrication of organic-inorganic thin films based on layered double hydroxides materials using laser techniques** **X 9.6**
A. Vlad1#, R. Birjega1, I. Tirca1,2, A. Matei1, A. Rotaru1, R. Zavoianu3, C. C. Mardare4, A. W. Hassel4, M. Dinescu1
1 National Institute for Lasers, Plasma and Radiation Physics,Atomistilor 409, Bucharest, Romania, 2University of Craiova, Faculty of Sciences, RO-200585, Craiova, Romania 3 University of Bucharest, Faculty of Chemistry, Department of Chemical Technology and Catalysis, 4-12 Regina Elisabeta Bd., Bucharest, 030018, Romania, 4 Christian Doppler Laboratory for Combinatorial Oxide Chemistry at the Institute for Chemical Technology of Inorganic Materials (ICTAS), Johannes Kepler University Linz, Altenberger Str. 69, 4040 Linz, Austria # Corresponding author: angela.vlad@gmail.com, Tel.: +40 21 457 44 14, fax: +40 21 457 42 43

15:15 **Coffee break**

16:15 **Plenary Session**

Thursday 25 May 2017

Emerging trends in laser processing for photovoltaics : Dermot Brabazon

08:30 **Laser patterning of thin films for applications in photovoltaic** — X 10.1
Klaus Zimmer1, Lukas Bayer1, Martin Ehrhardt1,2, Pierre Lorenz1, Alexander Braun3, Stefano Pisoni4, Stephan Buecheler4, Ayodhya N. Tiwari4
1 Leibniz-Institut für Oberflächenmodifizierung e. V., Permoserstraße 15, 04318 Leipzig, Germany, 2 Advanced Launching Co-innovation Center, Nanjing University of Science and Technology, #200 XiaoLingWei, 210094 Nanjing, Jiangsu, People's Republic of China, 3 BOT consulting GbR, Dölitzer Str. 18, 04277 Leipzig (former with Solarion AG), 4 Laboratory for Thin Films and Photovoltaics, Empa-Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, 8600 Duebendorf, Switzerland

09:00 **Excimer Laser Micromachining of Sapphire for Solar Cell Applications** — X 10.2
S. C. Sklare*, Kazi Islam, Brian Riggs, Mattew Escarra and Douglas Chrisey** *Contact Author **Presenting Author
Tulane University Department of Physics and Engineering Physics

09:15 **Photoluminescence Enhancement of ZnO via Coupling with Surface Plasmons on Al Thin Films** — X 10.3
S. Dellis, N. Kalfagiannis, S. Kassavetis, C. Bazioti, G. P. Dimitrakopulos, D. C. Koutsogeorgis, P. Patsalas
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece

09:30 **Optical Fibre Shaping by Chemical Etching for Photonic NanoJet Material Laser Processing** — X 10.4
Grégoire R. Chabrol, Stéphane Roques, Yoshitate Takakura, Patrice Twardowski, Pierre Pfeiffer, Sylvain Lecler
IPP, ICube UMR CNRS, ECAM Strasbourg-Europe, C3-lab, ICube UMR University of Strasbourg CNRS, TRIO, ICube UMR University of Strasbourg CNRS, IPP, ICube UMR University of Strasbourg CNRS, IPP, ICube UMR University of Strasbourg CNRS, IPP, ICube UMR University of Strasbourg CNRS

09:45 **Printed organic smart devices characterized by ultra-short laser pulses.** — X 10.5
Francesco Pastorelli
Organic Energy Materials, Department of Energy Conversion and Storage, Technical University of Denmark, Frederiksborgvej 399, 4000, Roskilde, Denmark

10:00 **Coffee break**

Laser induced periodic surface structures : Klaus Zimmer

10:30 **Laser induced structures in functional organic materials: from polymers to fullerenes** — X 11.1
J. Cui1, A. Rodríguez-Rodríguez1, M. Hernández2, M.C. García-Gutiérrez1, A. Nogales1, M. Castillejo2, T. A. Ezquerra1, E. Rebollar2
1 Instituto de Estructura de la Materia (IEM-CSIC), Serrano 121, 28006 Madrid, Spain, 2 Instituto de Química Física Rocasolano (IQFR-CSIC), Serrano 119, 28006 Madrid, Spain.

11:00 **Modification of surface properties of solids by femtosecond LIPSS writing: Comparative study on Silicon and Stainless Steel.** — X 11.2
Olga Varlamova (1), Kevin Hoefner (1), Debasish Sarker (2) and Jurgen Reif (1)
(1) Experimentalphysik, BTU Cottbus-Senftenberg, (2) Experimentelle Thermofluiddynamik (FWDF), Helmholtz-Zentrum Dresden-Rossendorf e.V.

11:15 **Direct laser interference patterning of ophthalmic polydimethylsiloxane (PDMS) polymers** — X 11.3
D. Sola (1), C. Lavieja (2), A. Orera (3), M.J. Clemente (4), P. Artal (1)
(1) Laboratorio de Óptica, Centro de Investigación en Óptica y Nanofísica. Universidad de Murcia, Campus Espinardo. 30.100 Murcia, Spain, (2) Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC. Dpto. Ciencia y Tecnología de Materiales y Fluidos. 50.018 Zaragoza, Spain, (3) Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC. Dpto. Física de la Materia Condensada. 50.009 Zaragoza, Spain, (4) Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC. Dpto. Química Orgánica. 50.009 Zaragoza, Spain,

11:30 **Generation of nano-voids inside polylactide using femtosecond laser radiation** — X 11.4
Tina Viertel, Markus Olbrich, Robby Ebert, Alexander Horn, Horst Exner
Hochschule Mittweida Technikumplatz 17 09648 Mittweida

11:45 **Bacterial pathogen detection using laser-structured paper-based diagnostic sensors** — X 11.5
I.N. Katis, P.J.W. He, S. Sherwin, C.W. Keevil, R. W. Eason, C.L Sones
Optoelectronics Research Centre, University of Southampton, Optoelectronics Research Centre, University of Southampton, Environmental Healthcare Unit, Biological Sciences, University of Southampton, Environmental Healthcare Unit, Biological Sciences, University of Southampton, Optoelectronics Research Centre, University of Southampton, Optoelectronics Research Centre, University of Southampton

12:00 **Lunch**

Ultrafast Phenomena and Phase transformations, Emerging trends in photoexcitations : Esther Rebollar

13:30 **3D Additive Manufactured 316L components microstructural features and changes induced by working life cycles** — X 12.1
Antonio Santagata, Maria Lucia Pace, Ambra Guarnaccio, Patrizia Dolce, Donato Mollica, Giovanni Pompeo Parisi
CNR-ISM, MATFUN - Tito Scalo Unit, Zona Industriale, C.da S. Loja - 85050 Tito Scalo (PZ) - ITALY

13:45 **2-photon stereolithography for rapid prototyping of chemical microsensors based on MIPs** — X 12.2
Laura Piedad Chia Gomez, Arnaud Spangenberg, Xuan-Anh Ton, Yannick Fuchs, Frank Bokeloh, Jean-Pierre Malval, Bernadette Tse Sum Bui, Damien Thuau, Cédric Ayela, Karsten Haupt, Olivier Soppera
Laura Piedad Chia Gomez, Arnaud Spangenberg, Jean-Pierre Malval, Olivier Soppera, Institut de Science des Matériaux de Mulhouse (IS2M), CNRS - UMR 7361, Université de Haute Alsace, 15 rue Jean Starcky, 68057 Mulhouse, France, Xuan-Anh Ton, Yannick Fuchs, Frank Bokeloh, Bernadette Tse Sum Bui, Karsten Haupt, Sorbonne Univ., Univ. de Technol. de Compiègne, CNRS Lab. for Enzyme and Cell Engineering, Rue Roger Couttolenc, CS 60319, 60203 Compiègne, France, Damien Thuau, Cédric Ayela, Laboratoire de L'Intégration du Matériau au Système, Université de Bordeaux, 351 Cours de la Libération, 33405 Talence cedex, France

14:00 **Direct micro peaks machining by photonic jet.** — X 12.3
Robin Pierron, Pierre Pfeiffer, Sylvain Lecler
ICube, University of Strasbourg, CNRS UMR 7357, 300 bd Sébastian Brant, 67412 Illkirch, France , ICube, University of Strasbourg, CNRS UMR 7357, 300 bd Sébastian Brant, 67412 Illkirch, France , ICube, University of Strasbourg, CNRS UMR 7357, 300 bd Sébastian Brant, 67412 Illkirch, France

14:15 **Studies on Microstructure and Corrosion Resistance of Laser Shock Peened Medium carbon (0.4% C) Steel using Femtosecond Laser** — X 12.4
Jyotsna Dutta Majumdar1 , Evgeny Gurevich2*, Renu Kumari1 and Andreas Ostendorf2**
1Dept. of Metal. & Maters. Eng., I. I. T. Kharagpur, W. B. ? 721302 2Ruhr-Universität Bochum, Ls. Laseranwendungstechnik, Universitätsstr. 150, 44801 Bochum

14:30 **SERS analyses of pesticides, insecticides and fungicides trough Au and Ag nanostructures produced by laser techniques** — X 12.5
P.A. Atanasov*1, N.N. Nedyalkov1, Ru. Nikov1, N. Fukata2, W. Jevasuwan2, T. Subramani2
1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko chaussee 72, Sofia 1784, Bulgaria 2International Center for Materials for NanoArchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1Namiki, Tsukuba 305-0044, Japan

14:45 **Magnetic and biocompatible tests of novel iron nitride based nanoparticles synthesized by ammonia sensitized laser pyrolysis** — X 12.6
F. Dumitrache, M. Balas, C. Fleaca, I. Morjan, A. Dinischiotu, M.S. Stan, I. Sandu, A. Ilie, C. Locovei, I.P. Morjan, E. Vasile, O. Marinica
1 NILPRP, Atomistilor 409, Magurele Bucharest, Romania: F. Dumitrache, C. Fleaca, I. Morjan, I. Sandu, A. Ilie, I.P. Morjan, 2 University of Bucharest, Department of Biochemistry and Molecular Biology, Splaiul Independentei 91-95, Bucharest, Romania: M. Balas, A. Dinischiotu, M.S. Stan, 3 University Bucharest, Faculty of Physics, Atomistilor 405, Magurele Bucharest, Romania: A. Ilie, C. Locovei, 4 Politehnica University of Bucharest, Faculty of Applied Chemistry and Materials Science, Department of Oxide Materials and Nanomaterials, Gh. Polizu 1-7, Bucharest, Romania: E. Vasile, 5. University of Timisoara – Research Center for Engineering of Systems with Complex Fluids, Mihai Viteazul 1, Timisoara, Romania: O. Marinica.

15:00 **Microscopic Imaging and EBSD on Additive Manufactured Parts** **X 12.7**

Dr. Lisa Weissmayer, Tim Schubert, Dr. Timo Bernthaler, Prof. Dr. Gerhard Schneider
(1) Dipl. Ing. Stefanie Freitag (2)
(1) Aalen University, Materials Research Institute (2) Carl ZEISS Microscopy GmbH

E-MRS

2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

SYMPOSIUM Y

Paper electronics: from materials to applications

Symposium Organizers :

Antonio José Felix de CARVALHO, Universidade de São Paulo, Brazil

Ari ALASTALO, VTT Technical Research Centre of Finland, Finland

David GUERIN, Centre Technique du Papier, Grenoble, France

Rodrigo MARTINS, FCT – UNL, Caparica, Portugal

UNINOVA CEMOP Centre of Excellence in Microelectronics, Optoelectronics and Processes

BET-EU MATERIALS SYNERGY INTEGRATION FOR A BETTER EUROPE

eit RawMaterials

Tuesday 23 May 2017

Substrates & Composites I : Patrick Huber

09:00 **Paper-based platforms for printed electronics and diagnostics** **Y I.1**
Roger Bollstroem
OMYA International AG

09:30 **Solution-processed green piezoelectric paper** **Y I.2**
Etienne Lemaire, Danick Briand
Ecole Polytechnique Fédérale de Lausanne EPFL-LMTS Maladière 71b P.O. Box 526 2000 Neuchâtel Switzerland

09:45 **Thermomechanical and spectroscopic characteristics of micro/nanoceramics "cellulose + oxide" composites** **Y I.3**
M. Nedielko(1), S. Hamamda(2), O. Alekseev(3), V. Chornii(3), M. Lazarenko(3), K. Kovalov(3), S.G. Nedilko(3), S. Tkachov(3), S. Revo(3), V. Scherbatskyi(3)
(1)O. Paton Electric Welding Institute of NASU, Bozhenko str. 11, 03680 Kyiv, Ukraine, (2)University Frères Mentouri, B.P. 325 Route Ain El Bey, 25017-Constantine, Algeria, (3)Taras Shevchenko National University of Kyiv, Volodymyrska str. 64/13, 01601 Kyiv, Ukraine.

10:00 **Coffee Break**

Energy & Electrochemical Devices : Masaya Nogi

10:30 **Multi-color electrochromic devices on paper** **Y II.1**
T. Venot, A. Danine and A. Rougier
CNRS, University of Bordeaux, ICMCB, 87 avenue du Dr. Albert Schweitzer, 33608 Pessac, France.

11:00 **A simple paper based microfluidic electrochemical biosensor for point of care cholesterol diagnostics** **Y II.2**
Gurpreet Kaur, Monika Tomar, Vinay Gupta
Department of Physics and Astrophysics, University of Delhi, Delhi, India, Physics Department, Miranda House, University of Delhi, Delhi, India, Department of Physics and Astrophysics, University of Delhi, Delhi, India

11:15 **Paper-based electrochromic devices incorporating inkjet-printed PEDOT:PSS electrodes** **Y II.3**
Augustus W. Lang, Anna M. Österholm, Michel De Keersmaecker, D. Eric Shen, Robert J. Moon, John R. Reynolds
School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332., Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30332. , School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332. , School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332. , School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332. , School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332., Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30332. , School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332., Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30332. , School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332.

11:30 **Polypyrrole - Graphene Nanocomposite Supercapacitors on Paper** **Y II.4**
Recep Yuksel, Husnu Emrah Unalan
Department of Micro and Nanotechnology, Middle East Technical University, Ankara 06800, Turkey, Department of Metallurgical and Materials Engineering, Middle East Technical University, Ankara 06800, Turkey

11:45 **Nano fibrillated cellulose as transparent electrode in an organic solar cell studied by atomic force microscopy** **Y II.5**
R. Schennach1, F. Brumbauer1, M. Kräuter1, W. Bachelor2, K. Shanmugam2, C. Czibula3, C. Teichert3, B. Friedel4
1 Institute of Solid State Physics, Graz University of Technology, Austria, 2 Department of Chemical Engineering, Monash University, Victoria, Australia, 3 Institute of Physics, Univeristy of Leoben, Leoben, Austria, 4 Energy Research Center, Vorarlberg University of Applied Sciences, Dornbirn, Austria

12:00 **Lunch**

Electronics : Aline Rougier

14:00 **Nanocellulose applications and developments for electronic devices** **Y III.1**
Masaya Nogi
Osaka University

14:30 **Biodegradable carbon-dioxide-based polymer for environment-friendly organic thin film transistors** **Y III.2**
Cut Rullyani1, Chao-Feng Sung2, Hong-Cheu Lin1* and Chih-Wei Chu3,4*
1 Department of Materials Science and Engineering, National Chiao Tung University Hsinchu, Taiwan, 2 Department of Photonics and Display Institute, National Chiao Tung University, Hsinchu, Taiwan, 3 Research Center for Applied Science Academia Sinica, Taipei, Taiwan, 4 College of Engineering, Chang Gung University, Tao-Yuan, Taiwan.

14:45 **Flexible Hybrid Circuit Fully Inkjet-Printed on Paper Substrate** **Y III.3**
J. Arrese, G. Vescio, E. Xuriguera, B. Medina-Rodriguez, A. Cornet, and A. Cirera
MIND–IN2UB, Department of Engineering: Electronics, Universitat de Barcelona

15:00 **High-throughput shadow mask printing of passive electrical components on paper by supersonic cluster beam deposition** **Y III.4**
Andrea Bellacicca, Paolo Milani
Andrea Bellacicca, Paolo Milani Interdisciplinary Centre for Nanostructured Materials and Interfaces (CIMaINa), Physics Department, University of Milan, Via Celoria 16, 20133, Milan, Italy

15:15 **Reusable cellulose-based sticker gate dielectric in paper electrolyte-gated transistors** **Y III.5**
Inês Cunha, Raquel Barras, Paul Grey, Diana Gaspar, Elvira Fortunato, Rodrigo Martins and Luís Pereira
CENIMAT/i3N, Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa and CEMOP-UNINOVA Campus da Caparica, 2829-516 Caparica (Portugal)

15:30 **Coffee Break**

Substrates & Composites II : Roger Bollstroem

16:00 **Dielectric losses of paper in the THz domain: literature review and needs for future work** **Y IV.1**
Huber P.*, Martinez P.*, Guers C.#, F. Garet#, P.Borel*
*Centre Technique du Papier, CS 90251, 38044 Grenoble Cedex 9, France # IMEP-LAHC, UMR CNRS 5130, Université de Savoie, 73376 Le Bourget du Lac Cedex, France

16:30 **Photoconductive Zinc Oxide-Composite Paper by Pilot Paper Machine Manufacturing** **Y IV.2**
Daniel Tordera1, Mats Sandberg1,2, Hjalmar Granberg3, Anurak Sawatdee2, Dina Dedic3, Magnus Berggren1 and Magnus P. Jonsson1
1 Laboratory of Organic Electronics, Linköping University, SE-601 74 Norrköping, Sweden 2 Acreo Swedish ICT, Box 787, SE-601 17 Norrköping, Sweden 3 Innventia AB, Box 5604, SE-114 28 Stockholm, Sweden

16:45 **Paper/ionic conductive polymer integrated platforms for the manufacturing of novel electro-responsive hybrid actuators** **Y IV.3**
Tommaso Santaniello, Ilaria Denti, Chloé Minnai, Yunsong Yan, Paolo Milani
Tommaso Santaniello, Ilaria Denti, Chloé Minnai, Yunsong Yan, Paolo Milani
Interdisciplinary Centre for Nanostructured Materials and Interfaces (CIMaINa), Physics Department, University of Milan, Via Celoria 16, 20133, Milan, Italy

17:00 **Understanding the composite system of NFC-PEDOT conducting paper** **Y IV.4**
Dagmawi Belaineh1, Sapiens Malti2, Andrea Grimoldi1, Xavier Crispin1, Magnus Berggren1, Isak Engquist1
1. Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, Norrköping, Sweden 2. Department of Fibre and Polymer Technology, KTH—Royal Institute of Technology, Stockholm, Sweden

Poster Session : Luís Pereira

17:30 **Nanosilver and nanocellulose interactions: stability and applications** **Y PI.1**
Caio H. N. Barros, Bruna F. Morais, Danijela Stanisic, Mayra Mariño, Ljubica Tasic
Laboratório de Química Biológica, Instituto de Química, Universidade Estadual de Campinas - UNICAMP, Campinas - SP, Brazil

17:30 **Improvement of power generating ability of «thermoelectric power generating paper» using carbon-nanotube-composite paper** **Y PI.2**
Kazuki Kawata, Takahide Oya
Graduate School of Engineering, Yokohama National University

17:30 **Laser-induced forward transfer: a digital printing technique for paper electronics** **Y PI.3**
P. Sopeña (1), X. Arrese (2), S. González-Torres (1), J.M. Fernández-Pradas (1), A. Cirera (2), P. Serra (1)
(1) Universitat de Barcelona, IN2UB, Applied Physics Department (2) Universitat de Barcelona, MIND-IN2UB, Engineering Department: Electronics Martí i Franquès 1, 08028-Barcelona, Spain

17:30 **Development of "paper antenna" using carbon-nanotube-composite paper** **Y PI.4**
Yuki Ikezoe, Takahide Oya
Yokohama National University

17:30 **Study of paper dye-sensitized solar cell using carbon nanotube-composite papers and aiming to improve its conversion efficiency by applying grid electrodes** **Y PI.5**
Yuya Ogata,Takahide Oya
Yokohama National University

17:30 **Inkjet-printed paper battery** **Y PI.6**
G. Sandu(1), A. Vlad(2), and S. Melinte(1)
(1)Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium, (2) Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium.

17:30 **Implantation of Anisotropic Microstructures for Improving Electrical Contacts between Compressed Flexible-Chips** **Y PI.7**
Yawen Su
Assistant Researcher Fellow of National Nano Device Laboratories / National Applied Research Laboratories No.26, Zhanye 1st Rd., Science Park, Hsinchu City, Taiwan 30078

19:30 **End of poster session**

E-MRS 2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM Z

Metamaterials: from waves to matter

Symposium Organizers :

Andrea ALU, University of Texas, USA

Didier FELBACQ, University of Montpellier, France

Pavel BELOV, State University of Information Technologies, Mechanics and Optics, St Petersburg, Russia

Philippe BEN-ABDALLAH, Institut d'Optique, Palaiseau, France

Wednesday 24 May 2017

Non photonic metamaterials : Philippe Ben Abdallah

13:00 **Temperonic Crystals: coherence effects of temperature fields in Quantum Metamaterials** — **Z I.1**
M. Gandolfi (1,2,3), G. Mazza (4,5), M. Capone (6), G. Ferrini(1,2), C. Giannetti (1,2), F. Banfi (1,2)
1 Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Brescia I-25121, Italy 2 I-LAMP (Interdisciplinary Laboratories for Advanced Materials Physics), Università Cattolica del Sacro Cuore, Brescia I-25121, Italy 3 Laboratory of Soft Matter and Biophysics, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D, B-3001 Heverlee, Leuven, Belgium 4 Centre de Physique Theorique, Ecole Polytechnique, CNRS, Universite Paris-Saclay, 91128 Palaiseau, France 5 College de France, 11 place Marcelin Berthelot, 75005, Paris, France 6 CNR-IOM Democritos National Simulation Center and Scuola Internazionale Superiore di Studi Avanzati (SISSA), Via Bonomea 265, 34136 Trieste, Italy

13:15 **Mechanical Response of Ultralight Nickel Kagomé Structure to Compression** — **Z I.2**
Pankaj Rajak, Rajiv K. Kalia, Aiichiro Nakano, and Priya Vashishta
Collaboratory for Advanced Computing and Simulations, Department of Physics & Astronomy, Department of Computer Science, Department of Chemical Engineering & Materials Science, University of Southern California, Los Angeles, CA 90089-0242, USA

13:30 **Metamaterial with Changing Shape between Conventional and Auxetic Structures Actuated by Heat** — **Z I.3**
Haedong Park1, Hyungho Kwon1, Yongsan An2, Woong-Ryeol Yu2, Myoung-Woon Moon1, and Kahyun Hur1
1Computational Science Center, Korea Institute of Science and Technology, 02792 Seoul, Korea, 2Department of Materials Science and Engineering and Research Institute of Advanced Materials (RIAM), Seoul National University, 08826 Seoul, Korea

13:45 **Topological wave transport in acoustic and electromagnetic metamaterials** — **Z I.4**
Romain FLEURY
Laboratory of Wave Engineering, EPFL, Switzerland

Theoretical methods and modeling : Didier Felbacq

14:15 **Simulating physics with quantum metamaterials** — **Z II.1**
Alexander Zagoskin
University of Loughborough

14:45 **From planar to comformable optics with metasurfaces** — **Z II.2**
Patrice Genevet
CHREA, France

15:15 **Rigorous modal analysis of optical resonators** — **Z II.3**
Wei Yan and Philippe Lalanne
Laboratoire Photonique Numérique et Nanosciences, Université Bordeaux, IOGS, CNRS, France

15:30 **Numerical computation of modes in metamaterials with highly dispersive permittivities.** — **Z II.4**
G. Demésy, A. Nicolet
Institut Fresnel (UMR 7249), Institut Fresnel (UMR 7249),

15:45 **Field Patterns- a new sort of wave** — **Z II.5**
Graeme W. Milton and Ornella Mattei
Department of Mathematics, The University of Utah

16:00 **Coffee break**

16:15 **Plenary Session**

Thursday 25 May 2017

Fabrication and characterization : Agnès Maurel

09:00 **Recent experimental results on 3D microstructured metamaterials** — **Z III.1**
Martin Wegener
Institute of Applied Physics and Institute of Nanotechnology Karlsruhe Institute of technology (KIT) 76128 Karlsruhe Germany

09:30 **THz absorbers with highly doped semiconductors based in plasmonic nano-resonators** — **Z III.2**
F. Gonzalez-Posada, F. Omeis, R. Smaali, L. Cerutti, E. Centeno, T. Taliercio
F. G-P, L. C. and T.T are with the Univ. Montpellier - CNRS, IES UMR 5214 F-34000, Montpellier, France F.O., R.S. and E.C are with Institute Pascal ? UMR6602, Univ. Blaise Pascal - CNRS, BP 10448 ? 63000 Clermont-Ferrand, France

09:45 **Metamaterials induced magnetic light and forbidden photochemistry** — **Z III.3**
Isabelle Rodriguez1, Raúl Perez-Ruiz1, Roberto Fenollosa1, Alejandro Manjavacas3, M. Consuelo Jiménez2, Guillermo Gonzalez-Rubio5, Judith Langer5, Andrés Cantarero4, Luis M. Liz-Marzán5, Miguel A. Miranda1,2 and Francisco Meseguer1
1Instituto de Tecnología Química (CSIC-UPV), Universidad Politécnica de Valencia, Av. Los Naranjos s/n, 46022 VALENCIA, Spain 2Departamento de Química, Universitat Politècnica de Valencia, Camino de Vera s/n, 46022 Valencia, Spain 3Department of Physics and Astronomy, University of New Mexico, Albuquerque, New Mexico 87131, USA 4Molecular Science Institute, University of Valencia, PO Box 22085, 46071 Valencia, Spain 5Bionanoplasmonics Laboratory, CICbiomaGUNE, Paseo de Miramón 182, 20014 Donostia-San Sebastián, Spain

10:00 **Barium Titanate Meta-Atoms for Nonlinear Photonics** — **Z III.4**
Flavia Timpu*, Claude Renaut*, Morgan Trassin**, Manfred Fiebig**, Rachel Grange*
*Optical Nanomaterial Group, Institute for Quantum Electronics, Department of Physics, ETH Zürich, Auguste-Piccard-Hof 1, 8093 Zürich, Switzerland **Multifunctional Ferroic Materials, Department of Materials, ETH Zürich, Vladimir-Prelog-Weg 4, 8093 Zürich, Switzerland

10:15 **Self-assembled optical metamaterials** — **Z III.5**
Xuan Wang, Alexandre Baron, Ashod Aradian, Philippe Barois, Virginie Ponsinet
CNRS, University of Bordeaux, CRPP UPR8641, F-33600 Pessac, France

10:30 **Coffee break**

Slabs and Metasurfaces : Didier Felbacq

11:00 **Anderson localization and Levy glasses** — **Z IV.1**
F. Utel, L. Pattelli, K. Vynck, D.S. Wiersma
Univ. of Florence Italy, LP2N Institut d'Optique d'Aquitaine France

11:30 **Facile plasmonic metasurfaces: manipulating light phase-front, high-resolution gray-scale printing and vivid coloring** — **Z IV.2**
H. Eghlidi, C. U. Hail, P. Richner, D. Poulikakos
Laboratory of Thermodynamics in Emerging Technologies, Institute of Energy Technology, Department of Mechanical and Process Engineering, ETH Zürich, CH-8092 Zürich, Switzerland

11:45 **Integrating quantum-dots and Mie resonators into a 2D metamaterial for sunlight downconversion** — **Z IV.3**
Antonio Capretti, Arnon Lesage and Tom Gregorkiewicz
University of Amsterdam

12:00 **Observation of fluorescence enhancement at a Bound State in the Continuum of a photonic crystal membrane** — **Z IV.4**
Silvia Romano (1), Gianluigi Zito (2), Stefano Managò (2), Erika Penzo (3), Simone Sassolini (3), Scott Dhuey (3), Stefano Cabrini (3), Anna Chiara De Luca (2), Vito Mocella (1)
(1) Institute for Microelectronics and Microsystems, National Research Council, CNR-IMM UoS Napoli, Italy (2) Institute of Protein Biochemistry, National Research Council, CNR-IBP, Napoli, Italy (3) Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, USA

12:15 **Spin to Angular Momentum Conversion of Light at a Bound State in the Radiation Continuum of a Photonic Crystal Slab** — **Z IV.5**
Gianluigi Zito (1), Silvia Romano (2), Giuseppe Calafiore (3,4), Simone Sassolini (3), Scott Dhuey (3), Stefano Cabrini (3), Anna Chiara De Luca (1), Vito Mocella (2)
(1) Consiglio Nazionale delle Ricerche, IBP, Via P. Castellino 111, 80131, Napoli, Italy, (2) Consiglio Nazionale delle Ricerche, IMM, Via P. Castellino 111, 80131, Napoli, Italy, (3) Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA, (4) aBeam Technologies Inc., 22290 Foothill Blvd, St. 2 Hayward, CA, 94541, USA,

12:30 **Homogenization of arrays of resonant elements** **Z IV.6**
Agnès Maurel, Jean-Jacques Marigo, Kim Pham, Jean-Francois Mercier
Institut Langevin, ESPCI, 1 rue Jussieu, Paris, France

12:45 **Lunch**

Novel effects in metamaterials : Alexander Zagoskin

14:30 **Topological phenomena in plasmonic metamaterials** **Z V.1**
C. A. Downing and G. Weick
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67000 Strasbourg, France

14:45 **Negative spontaneous emission by a moving two-level atom** **Z V.2**
Sylvain Lannebère, Mário G. Silveirinha
Department of Electrical Engineering, University of Coimbra and Instituto de Telecomunicações, 3030-290 Coimbra, Portugal, Department of Electrical Engineering, University of Coimbra and Instituto de Telecomunicações, 3030-290 Coimbra, Portugal University of Lisbon – Instituto Superior Técnico, Department of Electrical Engineering, 1049-001 Lisboa, Portugal

15:15 **Damping mechanisms of collective plasmons in metasufaces composed of metallic nanoparticles** **Z V.3**
François Fernique, Guillaume Weick
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France

15:30 **Radiative frequency shifts in nanoplasmonic dimers** **Z V.4**
Charles A. Downing, Eros Mariani, Guillaume Weick
School of Physics and Astronomy Exeter, IPCMS Strasbourg

15:45 **Self-organization and partial coherence in superconducting metamaterials** **Z V.5**
G. P. Tsironis
Department of Physics, University of Crete, Greece

16:15 **All-Dielectric Three-Dimensional Photonic Topological Insulators** **Z V.6**
A.Slobozhanyuk, S. H. Mousavi, X. Ni, D. Smirnova, Y. S. Kivshar, and A. B. Khanikaev
Department of Electrical Engineering, The City College of New York, NY 10031, USA
Nonlinear Physics Centre, Australian National University, Canberra ACT 0200, Australia
Department of Nanophotonics and Metamaterials, ITMO University, St. Petersburg 197101, Russia

16:45 **Coffee break**

Poster session : -

17:00 **Production of microsphere ribbons for natural lithography** **Z VI.1**
Ion Sandu1, Ana-Maria Banici(Niculescu)1,2, Iuliana Urzica1 , Gabriel Cojocaru1, Iulia Anghel1, Marius Dumitru1, Maria Badiceanu3
1National Institute for Lasers, Plasma and Radiation Physics, Lasers Dept, Bucharest-Magurele, 409, Atomistilor Street, 077125, Romania, 2University of Craiova, Faculty of Mathematics and Natural Sciences, RO-200585, Craiova, Romania, 3University of Bucharest, Faculty of Physics,

17:00 **Nanoplasmonic Au film containing ultrahigh-density nanohole array fabricated via a non-lithographic method** **Z VI.2**
Soonmin Yim, Yeon Sik Jung
Korea Advanced Institute of Science and Technology (KAIST)

17:00 **Towards self-assembled chiral plasmonic metasurfaces** **Z VI.3**
Matthias Pauly, Hebing Hu, Sribharani Sekar, Vincent Lemaire, and Gero Decher
Université de Strasbourg, CNRS, Institut Charles Sadron, F-67000 Strasbourg, France

17:00 **Unsteady Numerical simulation of turbulent forced convection in a rectangular pipe with waved porous baffles.** **Z VI.4**
Fakiri Fethallah, Rahmoun Khadidja
Department of Physics, Faculty of Science, Research Unit Materials and Renewable Energies U.R.M.E.R, University Abou Bekr Belkaid, BP 119, 13000 Tlemcen, Algeria

17:00 **Nanoporous Gold Nanoparticles with large Large Tunability of Plasmonic Resonances** **Z VI.5**
Dong Wang and Peter Schaaf
Institute of Materials Engineering and Institute of Micro- and Nanotechnologies MacroNano®, Technische Universität Ilmenau, 98693 Ilmenau, Germany

17:00 **Surface nano-texturing of bulk stainless steel for plasmonic coloration** **Z VI.6**
Minseok Seo, Jeeyoung Lee, Yoonseok Oh, Harim Oh, Jaeyong Kim, Myeongkyu Lee
Yonsei unversity

INDEX

presenting authors only

E-MRS 2017 Spring Meeting

from May 22 to 26

Strasbourg Convention Centre - France

A

AAZOU Safae, C/P.13.22, C/P.13.24, C/P.13.29, E/PI.24, E/PI.26
ABAKEVICIENE Brigita, Q/PT.12, V/P.14.57, W/P13.0
ABAKUMOV Artem, B.18.2
ABASS Aimi, E.VIII.1
ABATE Antonio, D.5.4
ABDALLA Hassan, M.II.5
ABDELKADER Dhafer, Q/PM.16
ABDERRAHMEN Hamdi, F/PI.35
ABDESLAM Saad, W/P11.0
ABENANTE Luigi, P/P.9.19
ABERE Michael, A.3.3
ABGARYAN Karine, U/P.3.14
ABIDI Irfan Haider, Q/PM.25, V/P.14.41
ABOUELHASSAN Sayd, N/P.15.13
ABOU-RAS Daniel, S.4.1
ABRAMS Kerry, S.9.5
ACAR Varol Gürkan, R/P1.3
ACHARD Valentin, E/PII.25
ACSENTE Tomy, Q/PW.16
ADAMOPOULOS George, T.4.4, T/PI.19, T/PI.20, T/PI.21
ADAMS David, A/P.8
ADE Harald, C.7.1
ADI Akylbek, G/P.TAa.18
ADVAND Marziyeh, N.1.5
AERNOUTS Tom, E.XIV.1
AFANAS'EV Valery, S.15.1
AFANDI Mohammad Malik, O/P.7.8
AGARWAL Khushboo, H.3.4, H/P.4.20
AGOSTINI Marco, B.3.1
AGUILO-AGUAYO Noemí, B.8.1
AHMAD Mujeeb, H/P.4.12
AHMAD Tahir, Q/PW.43
AIDOUD Amina, T.12.4
AIRAGHI LECCARDI Marta, I/P-4.3, I/P-6.3
AIT KERROUM Mohamed Alae, V/P.8.64
AIWU Wang, O/P.7.16
AJURIA Jon, B.13.2
AKDAG Adem, E/PI.22
AKHTAR Fatima, V/P.14.6
AKIYAMA Yoshikatsu, K.I.3, K/PI.10
AL ARAIMI Mohammed, V.8.3
ALAM Giri Wahyu, E.V.3
ALAM Md. Saiful, O.8.1
ALAM Shahidul, M/IV-P.17
ALDALUR Itziar, B/P.17.33
ALDONA Jelinska, F.IV.6
ALEXANDER Giovannitti, I.I-32.4
ALFREDSSON Maria, B.3.3
AL-GHOUL Mazen, F/PI.3
ALI Zitouni, N/P.15.2
ALISHAHI Mostafa, Q.8.10
ALKAN Baris, V/P.8.28
ALKAN Gözde, F.II.3
AL-KATTAN Ahmed, K.V.11, K/FPII.10
ALKURDI Ali, U/P.3.20
ALLEN Jessica, B/P.17.56
ALLUMOLU Daya Mani, F.VII.2, G.MMa.4
ALNJIMAN Fahad, D.5.2
ALOUANI Mebarek, M.V.2
ALTAZIN Stéphane, C.4.6
ALVAREZ F. Xavier, U.5.2, U/P.3.22
ALWADAI Norah, N.7.4
AMARIA Ould Abbes , E/PI.10
AMIAUD Anne-Charlotte, Q.7.6
AMINI Elham, P/P.9.29
AMIT Iddo, N.13.6
AMMAR Houas, F/PI.11, F/PI.12
AN Byeong Wan, J.5.6
AN Hong Joo, K/FPII.12
ANDRÄ Michael, T.11.2
ANDRE Pereira, H.5.4
ANDREE Stefan, X/P_1.18
ANDREEV Vladimir, S/5-P.4
ANDREI Andreea, T/PII.36
ANDREI Cristina-Cassiana, I/P-12.3
ANDRICH Paolo, N.17.7
ANDRZEJEWSKI Janusz, N/P.15.50
ANGEL Steven, V/P.8.42
ANGI Arzu, P.2.3
ANNA Windmüller, G/P.TAa.26
ANSARI HAMEDANI Ali, G.TMa.3
ANTHONY Rebecca, P.11.2
ANTHOPOULOS Thomas, L.1.1
ANTIDORMI Aleandro, U/P.3.11
ANUFRIEV Roman, U/P.3.1
AOKI Pedro, K/FPII.13
APARICIO Pablo, G.MM.2
APOSTOL Nicoleta G., N/P.8.25
APRAKSIN Rostislav, B/P.17.57
ARAB Madjid, F.II.5, V/P.8.53
ARAB POUR YAZDI Mohammad, N/P.8.32
ARAMBERRI Hugo, U.2.6
ARMAND Michel, B.2.5
ARMBRUSTER Oskar, X/P_1.25
ARNOLD Craig, X.1.1
ARNOULD Amandine, S.9.3
ARRAS Rémi, T.6.4
ARRESE Xavier, Y.III.3
ARTEMENKO Anna, L/P.1.12
ASCHAUER Elias, Q.1.3
ASPE Barthélemy, T.9.4, X.8.4
ASPERMAIR Patrik, I.I-27.4
ATANASOV Petar, X.12.5
ATTIAS Andre-Jean, V.9.1
ATTOTA Ravi Kiran, S.11.2
ATTOUI Mariam, V/P.8.9
ATXABAL Ainhoa, M.I.3
AUKSTUOLIS Andrius, C/P.5.16
AUVERGNIOT Jeremie, B.16.6
AVETISSOV Igor, L/P.1.4, N/P.8.7, N/P.15.16, R/P1.4, X/P_1.1, X/P_1.2
AVIREDDY Hemesh, B.13.4, G.TMa.6, B/P.9.56, G/P.TAa.24
AVITAL Yotam Yosef, F.XI.4
AWINO OMONDI Celline, D/P.8.12
AXENTE Emanuel, X/P_1.35
AYAWANNA Jiratchaya, F/PI.6
AZAR Amin, P.11.6, P/P.9.34
AZDAD Zakaria, N/P.15.40
AZIZI Hossein, U/P.3.24, W/P16.0
AZOVSKYI Volodymyr, C/P.13.31
AZRAK Edy, N.1.1
AZUELOS Paul, P.13.2, P/P.9.46

B

BA Housseinou, V/P.8.71
BABONNEAU David, R.1.1
BABU Binson, B/P.9.19
BABUSENAN Anu, C/P.5.15
BACHELLIER Nicolas, M/IV-P.18
BAGLOV Aleksey, F/PI.39
BAHARIQUSHCHI Rahim, R.6.6
BAHLAWANE Naoufal, R.1.2
BAHN So Yeong, K/PV.1
BAIJOT Vincent, A.4.2
BAKULIN Artem, C.3.3, L.1.4
BALAZ Peter, E/PII.13
BALDISSERA Gustavo, O.9.5
BALDUCCI Andrea, B.1.1
BALKE Benjamin, H.8.2
BALLERINI Laura, K.IV.7
BALOCH Ahmer, D/P.15.28
BALZER Frank, K.II.17, K/FPII.1
BANERJEE Debashree, H.6.5
BANERJI Natalie, C.12.4
BANFI Francesco, U/P.3.8
BANI HASHEMI Amir, B.4.1
BANICI (NICULESCU) Ana Maria, X/P_1.37, Z/P.VI.1
BANIK Meneka, Q/PT.39
BANU Nasrin, Q/PT.5
BAO Zhena, I.I-33.5
BARAN Derya, C.2.3, L.1.3
BARANOV Artem, E.X.3
BARATOVA Aliya, T/PI.27
BARBIER Antoine, T.14.2
BARRAGAN-YANI Daniel, E.VII.2
BARROIS Pauline, V.3.5, F/PI.40
BARTOLI Florian, Q/PT.25
BASTOLA Narayan, F.III.2
BASTOS Joao, D.12.4
BAUERHENNE Bernd, X.6.4
BAUM Fábio, D.7.4
BAUR Guillaume, S/5-P.19
BAXENDALE Mark, M.II.4
BAYRAKLI Özge, D/P.15.33
BAYTEKIN Bilge, A.10.3, R.6.2, A/P.23, R/P1.5
BAYTEKIN H. Tarik, R/P1.6
BEARD Matthew, E.IV.1, P.15.1
BEAUJUGE Pierre, C.6.4
BECHELANY Mikhael, Q.10.4
BECHU Solène, V.5.5
BEDEAUX Dick, U.2.1
BEDOYA Natalia, M.II.3, U.1.4
BEHAN James, Q/PM.47, V/P.14.29
BEHROUDJ Arezo, P.7.5
BEJAUD Romuald, W.4.4
BELAINEH Dagmawi, Y.IV.4
BELHADI Jamal, T.14.4, T/PII.34
BELLANGER Pierre, E/PI.8, E/PI.9
BELMONTE Thierry, Q.4.2
BEN DOUDOU Bessem, R/P1.7
BENAISSA Mohammed, N/P.15.7
BENASSAYAG Gérard, R/P1.2
BENCKISER Eva, T.11.1
BENENTI Giuliano, U.4.1
BENETTI Giulio, S.3.2
BENHAMIDA Soufiane, T/PI.52
BERA Ranadip, R.7.5
BERASATEGUI Gutierrez, Q.7.9
BEREZOVSKA Nataliya, X/P_1.56
BERGFELDT Thomas, S/10-P.14
BERNABE María , O.9.2
BERNECHEA Maria, D.17.4
BERRY Joseph, D.9.1
BERTONI Andrea, N/P.15.26

in bold : invited speaker - /P : poster

BETTINI Luca, B/P.9.27
BEYAZAY Tugce, V.2.3
BHAT Deepak, L/P.1.9
BHATTACHARYYA Jayeeta, C/P.5.11
BIADALA Louis, N.13.1
BIAN Haidong, G/P.TAa.23
BIEBERLE-HÜTTER Anja, F.IV.4
BIJOU Diane, T/PII.33
BILC Daniel Ioan, H.1.5
BILDIRIR Hakan, C/P.13.8
BILOKUR Maryna, Q.7.5
BINAS Vasilios, V/P.14.44
BINAS Vassilis, F/PII.3, F/PII.4, Q/PW.3, V/P.8.12
BINIEK Laure, C.9.2, L.1.4, M.VIII.3
BINTINGER Johannes, I/P-8.3
BIRSKA Ilze, N/P.8.43
BISSCHOP Suzanne, N.14.2
BISWAS Pranab, T/PII.9
BITEEN Julie, R.5.1
BLASHCHUK Valentine, K.FI.15, K/FPI.10
BLÁZQUEZ Oriol, R.7.3, R/P1.8
BOBBERT Peter, M.VI.1
BOBO Jean-François, M.V.3
BOCCARD Mathieu, E.VI.3
BOEHMLER Miriam, S.6.3
BOERNER Markus, S.13.3
BOESEL Luciano, J.1.5, J.5.2
BOGAR Marco, L.1.8, V/P.14.58
BOGDANOVICIENE Irma, K/PV.7
BOGDANOWICZ Janusz, S.6.4
BOHLOUL Saeed, P.11.3
BÖHM Daniel, V/P.14.23
BOLLSTROEM Roger, Y.I.1
BOLOGNESI Margherita, C.8.2
BOMATI-MIGUEL Oscar, V.7.7
BONAFOS Caroline, R/P1.19
BONFIGLIO Annalisa, I.I-14.2, J.8.1
BONINELLI Simona, R/P1.32
BONNET Pierre, V/P.14.37
BONNOT Karine, S/5-P.9
BONSE Jörn, K.I.22
BOOKER Edward, E.II.5
BORA Pritom Jyoti, R.8.6
BORCHERT Holger, E.XIII.4
BORGES Joel, Q/PW.27
BORISYUK Petr, Q/PT.20
BORKOVSKA Lyudmyla, O/P.7.24, T/PI.43, T/PI.47, R/P1.9
BORODIN Vladimir, P.12.5
BORTOLOTTI Carlo Augusto, I.I-20.2
BORYSIUK Viktor, V/P.14.54
BOUABDELLAH Bouadjemi, N.2.5
BOUARABA Fazia, O/P.7.23
BOUAZIZ Jordan, T/PII.12
BOUCHAMA Idris, E/PII.18
BOUCHET Renaud, B.11.1
BOUHJAR Feriel, B/P.9.60
BOUJIOUI Fadoi, B/P.9.65
BOURAS Karima, E.XIII.1
BOURGUIBA Fayçal, B/P.9.58
BOUSOULAS Panagiotis, R.7.2
BOUTINGUIZA Mohamed, Q.9.5
BOVERI Giulio, Q.9.4
BOWEN Martin, C.10.3, M.IX.4, T.11.3, M/IV-P.10, M/IV-P.12, T/PII.13
BRABAZON Dermot, X.5.1
BRAEMS Isabelle, W.3.3
BRAHIM Marfoua, H/P.4.4
BRAHMI Yamina, P/P.9.14
BRAIC Mariana, Q/PM.33
BRANDL Christian, W.2.1
BRASSAT Katharina, K.FI.12, K/FPI.8
BRAUN Artur, S.13.1
BREITENSTEIN Otwin, E.XI.4
BRESSER Dominic, B.5.3
BRIAND Danick, J.6.4, Y.I.2
BRIGHI Matteo, B.14.4
BRINKMANN Martin, L.1.1
BRISCOE Joe, T.16.3, E/PII.55
BROCHON Cyril, L.1.4
BROVELLI Sergio, P.10.3
BRUCE Peter, B.3.18
BRUEVICH Vladimir, L.1.4
BRUSA Roberto Sennen, T.2.1
BU Yanru, F/PII.33
BUCHTER Arne, S.17.5
BUCKERIDGE John, O.8.4
BUDDHA Deka Boruah, N.7.7, B/P.17.23
BUGA Mihaela, B/P.9.53
BULIR Jiri, R.8.5
BUNTOV Evgenii, V/P.8.41
BURTON Lee, D.6.1
BUSCEMA Marzia, K/FPI.9
BUTT Muhammad Taqi Zahid, W.10.5
BÜTTNER Pascal, D/P.15.16
BUYUKCELEBI Sumeyra, D/P.15.10
BYRNE Ciara, F.XV.2
BYRNE J. Anthony, F.XII.2
BYUN Segi, F.XIV.2

C

CABALLERO-CALERO Olga, H.8.1, H.5.3
CACCAMO Sebastiano, P.6.4
CADAVID Doris, H.10.6
CADDEO Claudia, U.4.5
CAI Bin, V/P.8.5
CAI Chung-Hao, D/P.8.9
CAIRONI Mario, C.9.3, M.VIII.4
CALAVALLE Francesco, J/P.2.6
CALIO Laura, D/P.15.22
CALVET Laurie, P.8.7, T.6.3
CAMACHO Sabrina, Q/PW.33
CAMPOY-QUILES Mariano, L.1.7, M.XI.1
CANDOLFI Christophe, H.3.1
CANOCH Carmeli, I.I-43.1
CANTARELLA Maria, F.II.4
CAPEK Jiri, T.3.3
CAPRETTI Antonio, E.XIII.2, K.PII.6, Z.IV.3, V/P.14.32
CARA Eleonora, S.7.4
CARNEVALI Virginia, W.8.5
CARRADA Marzia, R/P1.10
CARRETERO Adrian, Q.10.8
CARROLI Marco, N.9.5
CARTON Anne, V.11.3
CARULLI Francesco, L.1.2, C/P.13.17
CARVAJAL Eliel, D/P.8.34, N/P.8.44
CARVALHO Diogo Vieira, B.10.5
CASTELLI Ivano Eligio, B.16.3
CASTILLO Adriana, B.20.1
CASTRUCCI Paola, P.3.4, R.3.3
CASULA Giulia, L/P.1.18
CAVUSOGLU Halit, A.3.7
CB Ram Kumar, L.1.9
CEMIN Felipe, Q.1.8
CENSABELLA Maria, R/P1.11
CERVENKA Jiri, P.8.4
CESCA Tiziana, R.2.2
CHABROL Grégoire, X.10.4
CHACKO Binoy, E/PII.38
CHAIGNEAU Marc, S.18.2
CHAIMAE Azahaf, E/PII.1
CHAKER Ziyad, V.1.2, T/PII.35
CHAKRABARTI Subhananda, N/P.15.15
CHALLINGER Susanna, S/5-P.15
CHALOPIN Yann, U.2.7
CHAMPAGNE Aurélie, D.15.5
CHAN Serene, A/P.4
CHAN Yi Lok, N/P.15.32
CHANDRA Amreesh, B/P.17.15
CHANDRASEKARAN Naresh, C/P.13.25
CHANDRASEKARAN Soundarrajan, F.V.4
CHANDRASEKARAN Vigneshwaran, N.12.3
CHANG Chiung-Fen, V/P.14.48
CHANG Hao-Yeh, T/PII.22
CHANG Hochan, V.13.2
CHANG Victor, Q.7.12
CHANGSU Woo, W/P1.0
CHAO Liang-Wei, F/PII.10
CHAO Zhao, P.5.2
CHARVÁTOVÁ CAMPBELL Anna, S/5-P.7
CHATTERJEE Arindom, H.11.5
CHATTERJEE Manisha, V/P.8.16
CHATTERJEE Soumi, G/P.TAa.5
CHAUDHARY Deepti, F.XIII.2
CHAUDRET Bruno, V.3.1
CHAUSSENDE Didier, O.3.1
CHAVEZ-ANGEL Emigdio, U/P.3.16
CHEETHAM Nathan, L.1.3
CHELOUCHE Abdellatif, R/P1.12
CHEN Chia-Chin, B.15.1
CHEN Chia-Wei, E/PI.21
CHEN Chih-Ping, C/P.5.2
CHEN Heng-Yin, K/FPI.4
CHEN Hui-Wen, K.V.14
CHEN Jin, A.10.2
CHEN Jin-Ming, B/P.17.3
CHEN Junze, F.IV.1
CHEN Li-Chi, H/P.4.7
CHEN Peilin, K.VI.1
CHEN Qing, D/P.8.24
CHEN Rongzhen, D/P.8.37
CHEN Shuai, V/P.14.4
CHEN Shula, N.14.7
CHEN Tao-Hsing, S/5-P.1
CHEN Xi, B/P.9.39
CHEN Yi-Ping, K.VI.11
CHEN Zhi-Hui, R/P1.13
CHENG Guo-An, F/PI.20
CHENG Luhua, B/P.17.6
CHENG Lungteng, E/PI.19, E/PII.43
CHENG Xin-Bing, B.4.7
CHENG Yuanhang, D/P.8.15
CHERKASHIN Nikolay, R.6.3
CHERKOUK Charaf, G/P.TAa.28

INDEX

CHESKIS Dima, Q/PW.21
CHHABRA Deepak, W/P14.0
CHIANG Yen-Chang, Q/PT.27
CHIBA Hiroshi, T.4.2
CHIERCHIA Rosa, E/PI.41, E/PII.47
CHIOU Jau-Yu, Q/PM.46, Q/PT.40
CHLOUBA Tomá□, P.15.4
CHO Ara, D/P.15.12, E/PII.31
CHO Jun-Sik, E/PII.30
CHOI Bumho, Q/PT.8
CHOI Byungwoo, J.5.3
CHOI Daeguen, N/P.15.37
CHOI Inchul, W.1.2
CHOI Jongseob, W/P17.0
CHOI Jun-Gyu, Q/PM.24
CHOI Pyungho, T/PII.8
CHOI Seong Soo, R/P1.15
CHOI Seung Hee, R/P1.14
CHOI Sukyung, E/PI.3
CHOI Taejin, Q.2.3
CHOI Woo Seok, T.5.1
CHOI Woon-Seop, N/P.8.14
CHONG Yong Bing, K.FII.4
CHORNII Vitalii, T/PI.33
CHOWDHURY Sisir, Q/PT.31
CHRISEY Doug, T.7.2, X.4.2
CHRISEY Douglas, X.10.2
CHROMINSKI Witold, W.2.5
CHU Chun Lin, N/P.15.34
CHUANLANG Zhan, C.6.3
CHUKOVA Oksana, E/PII.53
CHULAPAKORN Thawatchart, R/P1.17
CHUNG Jihoon, A/P.19, Q/PT.45
CHUNG Koo-Hyun, Q/PT.14
CHUNG Kwun-Bum, O/P.7.7
CINCHETTI Mirko, M.I.4
CIOBANU Gabriela, Q/PT.4
CIUREA Magdalena Lidia, R.8.2
CLAMAGIRAND Jose Manuel , H.9.3
CLANCY Adam, V/P.8.11
CLAVEAU Alexis, L/P.1.21
CLAVEAU Rémy, S/5-P.18
CLAYTON Andrew, D.13.3
CLOUTET Eric, L.1.7, L/P.1.13
COCLITE Anna Maria, I.I-31.4
COELER Matthias, B/P.9.34
COFFINIER Yannick, V.4.2
COLACE Lorenzo, N.17.3, N/P.15.41
COLAVITA Paula, K/FPI.15
COLLINS Reuben, P.11.1
COMANNS Philipp, K.I.18
CONDORELLI Guglielmo Guido, Q.11.11
CONESA José C., F.V.3
CONSTANTIN Costel, M/IV-P.11
COPIE Olivier, T.6.2
CORDILL Megan, W.7.4
CORNELIA Nichita, K/PV.3, K/PV.4
CORNELIA Streeck, S.8.3
CORNELIUS Thomas, W.1.3
CORRERO Maria Rita, K/PI.11
CORTES Maria Ana, F/PII.31
COSTA Costa, B/P.9.41, B/P.17.19
COSTANZO Francesca, U.5.6
COTIN Geoffrey, V.7.3, K/PV.6
COTTINEAU Thomas, F.XIV.1
COUGNON Florian, Q.11.10
COULET Marie-Vanessa, A.1.1
COUSTAN Laura, B.2.1
CRACIUN Valentin, Q.5.6, X.9.3, T/PI.50, T/PI.51
CRAMER Tobias, W.10.3
CREVANT Charlène, E/PII.54
CRISAN Adrian, T.9.5, X.8.5
CRISPIN Xavier, M.II.1
CRISTEA Dana, N.17.2
CRISTINA Chirila, T.12.5, T/PII.26
CROIZIER Guillaume, Q.7.3
CROVETTO Andrea, D.2.2, T.4.6
CUEVAS Fermin, B/P.17.18
CUMMINGS Aron, K.IV.2
CURTIN William, W.5.1
CURTO Vincenzo, I.I-2.1
CUZMINSCHI Marina, V/P.14.52
CZECH Nikolai, V/P.8.55
CZUBA Urszula, Q.11.6

D

DA COMO Enrico, L.1.6
DAENEKE Torben, F.VIII.4, N.6.6, T.10.3
DAG Remzi, V/P.8.51
DAGAR Janardan, C/P.13.18
DAHER Ali, S/5-P.3
DAHLMAN Clayton, R.2.1, T.1.3
DALBAUER Valentin, Q/PW.9
DALDOUL Imen, O/P.7.15
DALSTEIN Olivier, Q.9.2
DAMIEN Dijo, B.10.1, Q/PW.13
D'AMORA Marta, K.IV.12
DANEK Martin, Q/PT.30
D'ANGELO Daniele, V/P.8.20
DANIEL Rostislav, Q.5.1
DANIELE Stephane, H.11.7, V.11.4
DAOUST Patrick, O.8.5
DARISTOTLE John, V.13.4
DAS Amit Kumar, B/P.17.30
DAS Tamoghna, R.5.5
DATCU Angela, F/PI.23, F/PI.24
DAVIER Brice, U/P.3.21
DAVIES Francis, N.3.3
DAVIS Nathaniel, N.2.4
DAVYDOK Anton, W.7.3, W.10.6
DAYEN Jean-Francois, V.2.1
DE ANGELIS Filippo, C.8.1
DE BONIS Angela, X.3.3
DE BUYSSER Klaartje, H.7.5
DE GROOT Kees, H.3.3
DE GUZMAN Keana, J/P.2.5
DE JONG Elinore, R.3.2
DE KEUKELEERE Katrien, V.3.2
DE MORAIS Paulo, V.1.1
DE MULATIER Séverine, J.8.5
DE SANTIAGO Francisco, P/P.9.13
DE WEERD Chris, E.VIII.3, N.2.3, E/PI.56
DE ZOTTI Marta, K.II.16, K/PII.8
DEBERNARDI Alberto, P/P.9.25
DEDIU Valentin, M.I.1
DEDONCKER Robin, Q.4.3
DEDOVA Tatjana, F/PI.34
DEGARDIN Annick, T/PII.15
DEGOUSEE Thibault, M/IV-P.5
DEIBEL Carsten, L.1.8
DEKKERS Matthijn, T.9.8, X.4.4, X.8.7
DEL AGUA Isabel, J.5.4
DEL VAL GARCIA Jesus, X/P_1.22
DELAVARI Hamid, K.V.12
DELERUE Christophe, R.4.2
DELLIS Spilios, T.4.5, X.10.3, N/P.8.35
DEMCHENKO Lesya, W/P6.0
DEMIRCIOGLU Zeynep, E/PII.37
DENNLER Gilles, D.7.1
DESCAZEAUX Médéric, E.XI.5
DESCHAUME Olivier, K/FPII.4, K/FPII.5
DETTORI Riccardo, U/P.3.6, U/P.3.7
DEWAN Moumita, B/P.17.58
DEY Sayan, T/PII.44
DHINGRA Sunil, W/P15.0
DHYANI Veerendra, N/P.15.36
DI PASCOLI Stefano, I/P-13.3
DI PIETRO Riccardo, L.1.3, L/P.1.7
DI STASIO Francesco, N.14.6
DIALAMEH Masoud, S/10-P.20
DIDELOT Aurelien, D.3.1
DIEBOLD Morgane, L/P.1.10
DIEDENHOFEN Silke, N.4.2
DIETRICH Christian, B.2.3
DIKAYA Olga, Q/PW.45
DIKOVSKA Anna, T/PI.29
DILONARDO Elena, V/P.8.52
DIMOPOULOS Theodoros, E.IX.5, O.4.3
DINDA Diptiman, F/PI.26
DINESCU Maria, X/P_1.32
DINESCU Maria , X/P_1.54
DING Jie, B/P.17.22
DINU Mihaela, Q.8.11, Q/PT.13
DION Genevieve, J.1.6
DISLAKI Evangelia, Q.6.3
DITTRICH Thomas, F.VIII.5
DJABERI DASHTESTANI Ashkan, P/P.9.3
DJAMEL Allal, S.16.1
DJEFFAL Faycal, E/PI.47, N/P.15.10, R/P1.20, V/P.8.60
DJELAD Halima, V/P.8.21
DJELTI Fayssal, V/P.8.54, V/P.14.50
DJENIZIAN Thierry, J.4.1
DOBRETSOV Egor, B/P.17.32
DOGRU Cigdem, E/PII.35
DÖHLER Dirk, D/P.8.29
DOLCI Mathias, R.9.3, V.4.1
DOLGOBORODOV Aleksandr, A.2.2, A/P.15
DOLLFUS Philippe, N.3.1
DOLPHIJN Guillaume, B/P.17.1
DOMINKO Robert, B.4.4
DONADIO Davide, U.5.1
DONAEV Sardor, N/P.15.12, N/P.15.19, P/P.9.53, P/P.9.54, Q/PM.5, T/PI.4
DONALD LOUIS Mouafo Notemgnou, R.7.8
DONATA Iandolo, K.I.7, K.II.1, K.II.4, K.FI.2, K.II.20, K.FII.2, I/P-7.3, K/FPII.1
DÖNERÇARK Ergi, P/P.9.20
DÖRLING Bernhard, L.1.2
DOUMON Nutifafa Yao, L.1.2
DOWNING Charles, Z.V.1
DRAPAK Stepan, R/P1.21, R/P1.22
DREIZIN Edward, A.2.1
DRIJKONINGEN Sien, Q.8.12
DU PLESSIS Monuko, N.10.4
DUAN Jinglai, V/P.8.24
DUBCEK Pavo, Q/PW.37

in bold : invited speaker - /P : poster

DUFAY Thibault, Q.9.3
DUFFY Ray, P.6.3
DUMITRACHE Florian, X.12.6
DUNDAR Ibrahim , F/PI.32
DUNN Bruce, B.13.3
DUONG-VIET Cuong, V/P.8.70
DURBAN Matthew, A.11.2
DURBIN Steven, D.5.1
DURIS Maxime, Q/PM.30
DURRANT James, C.4.3
DUTA Anca, F.I.1, F/PI.22
DUTA Liviu Marian, X/P_1.27
DUTTA MAJUMDAR Jyotsna, K.PII.9, X.12.4
DUTTA Rajesh, G.TA.4
DUTTA Soumya, I.I-13.1
DUTU Elena, X/P_1.52
DUVAIL Jean-Luc, N.12.1
DVURECHENSKII Anatoly, P.14.7, P/P.9.37

E

EBENHOCH Carola, D.3.4
EBINA Yasuo, T/PI.13
EFREMUSHKIN Lihi, R.9.2
EGHLIDI Hadi, Z.IV.2
EGOROV Vladimir, S/10-P.3
EGUIA Sandra, Q/PT.11
EHRE Florian, E.IV.2
EICHERT Diane, S.12.5, S/10-P.9
EL AOUAMI Asmae, N/P.15.42
EL BEAINOU Raya, Q/PW.10
EL GAWHARY Omar, S.17.1
EL MASAOUDI Hind, F/PI.4
EL OMARI Zakaria, W.3.2
ELENA Sokolova, B/P.17.61
ELFAKIR Amina, E/PII.26
EL-KHARBACHI Abdelouahab, B.14.2
EL-MELLOUHI Fedwa, D/P.15.13
EL-RASSY Houssam, V/P.14.55
EL-YADRI Mohamed, N.1.3
ENESCA Alexandru, E/PII.17, Q/PM.21
ENGBERG Sara, D.6.2
EOM Taewoo, Q/PT.23
EPICIER Thierry, Q.4.1
EPURESCU George, X/P_1.55
ERFURT Darja, T.15.3
ERGASHOV Yoqub, P/P.9.52
ERNOULD Bruno, B/P.9.52, B/P.17.45
ESPINDOLA-RODRIGUEZ Moises, E.XIV.5
ESPOSITO Pierre-Henry, A/P.16
ESSOUDA EP BEN ZAIED Yethreb, T/PII.30
ESSYED Ahmed, V/P.8.63
ESTEVE Alain, A.4.2, A/P.18
ESWARA Santhana, S.3.4, P/P.9.16
ETMAN Ahmed, B.7.2
EVANGELISTI Camilla, B/P.9.49
EVANGELOS Skoulas, K.FI.11
EVARISTO Manuel, Q.8.9
EVEN Jacky, D.15.2

F

FABIANO Simone, L.1.9
FAKIRI Fethallah, M/IV-P.2, Z/P.VI.4
FAMENGO Alessia, M/IV-P.23
FAMULOK Romain, Q.4.5
FANG Chih-Yi, V/P.14.19
FANG Junfeng, C.11.1
FANG Te-Hua, L/P.1.1
FANTONI Alessandro, R/P1.23, R/P1.24
FARAMUS Angélique, P.13.3
FARHAT Mahmoud, C/P.5.1
FARIA Gregorio, I.I-38.5
FARIA Roberto Mendonça, C/P.13.19
FARID Nazar, Q/PW.22
FATHI TOVINI Mohammad, G.MM.4, V/P.8.58
FATHPOUR Sasan, N.10.1
FAVRE Wilfried, D.11.2
FAZZI Daniele, L.1.1
FEDALA Abdelkrim, Q/PM.52
FEKAS Ilias, V/P.8.57
FELEKIDIS Nikolaos, C.2.2
FELIX Olivier, Q.10.6
FELIX Roberto, D.15.4
FENG Hao, A.1.2
FENNIRI Hicham, K.II.2
FERJAOUI Zied, V/P.8.23
FERMIN David, D.11.4, T.3.4
FERNANDEZ GARRILLO Pablo Arturo, C.4.2
FERNIQUE François, Z.V.3
FERRARESE LUPI Federico, S.12.4
FERRARIO Alberto, H/P.4.22
FERY Andreas, V.11.1
FILICE Simona, F.II.2
FILIPESCU Mihaela, X/P_1.17, X/P_1.28
FINA Ignasi, T.13.5
FINGERLE Mathias, B.7.5
FIORENZA Roberto, F.IV.2, F.X.4
FIORETTI Angela, D.14.1
FIRTH Peter, Q.3.4
FISCHER Peter, T/PI.56
FISICARO Giuseppe, B/P.17.50
FLEACA Claudiu, X/P_1.45
FLEISCHER Karsten, T.6.5, T.16.5
FLEISCHMANN Claudia, S/10-P.7
FLEMBAN Tahani, N.17.5
FLEURENCE Nolwenn, S.14.3
FLEURIAL Jean-Pierre, H.10.1
FLEURY Romain, Z.I.4
FLEURY Xavier, B.11.3, G.MA.5
FLORES Eduardo, F.VII.4, F/PII.29
FLORES Loreleyn, O.3.3
FLORINI Nikoletta, W/P12.0
FLOX Cristina, G.WM.1
FLURY Manuel, X/P_1.5, X/P_1.7
FNEICH Hussein, R.3.6, R/P1.25
FONTAINE Olivier, B.1.2
FORTUNATO Elvira, N.7.1
FRABONI Beatrice, I.I-34.5, L.1.2
FRANCOIS Le Normand, V/P.8.50, V/P.14.51
FRANKBERG Erkka, W.6.3
FREDJ Donia, C.11.5, O/P.7.19
FREIRE JR Fernando Lazaro, Q/PW.7
FREITAG Stefanie, X.12.7, B/P.17.39
FREUNBERGER Stefan, B.6.2
FREUNDLICH Alex, E.X.1
FRIEDEL Bettina, J.4.2
FRIEND Richard, C.9.1, M.VIII.1
FRITZ Benjamin, E/PII.45
FROST Jarvist Moore, D.1.2, E.II.2
FRUTOS TORRES Emilio, Q.10.5
FU Fan, E.XIV.3
FUJII Minoru, P.10.2
FUJIMOTO Kenjiro, T/PI.41
FURGEAUD Clarisse, Q.1.5, Q/PT.32
FUTSCHER Moritz, E.XIV.2

G

GALANTI Agostino, V.13.6
GALLARD Manon, Q/PW.24
GALSTYAN Vardan, T.7.5
GANDOLFI Marco, U.1.5, Z.I.1
GANDRUD Knut Bjarne, B/P.17.47
GANGOPADHYAY Shubhra , A.10.1
GANOSE Alex, D.1.4, D.10.4
GAO Ang, K/PI.5
GAO Fang, K.IV.1, L.1.5
GAO Feng,
GAO Min, H.9.1
GARCIA-ESPARZA Angel , F.X.5
GARCIA-POMAR Juan Luis, E.XII.4
GARDELIS Spiros, N.4.3
GARG Manjari, O.8.3
GAROI Petronela, T/PI.42
GARRELIE Florence, X.4.1
GARUD Siddhartha, E/PI.36
GASIOROWSKI Jacek, C/P.13.16
GASPARINI Nicola, C.1.4
GATTO Emanuela, K.II.13, K.PII.3, K/PII.2
GAUVIN Florent, F/PI.7
GAVIN Ailbhe, D.4.4, B/P.17.11
GAVIOLI Luca, Q.10.7, R.9.4, X.5.5
GAVRILA-FLORESCU Lavinia , X/P_1.23
GAVRILUTA Anatolie, E.XII.7
GAWLIK Andrzej, P.5.3, S/10-P.21
GAWLINSKA Katarzyna, E/PI.49
GEITENBEEK Robin, V.10.3
GENEVET Patrice, Z.II.2
GENG Zhi, K.III.6
GENIN Emilie, V.9.8
GEOHEGAN David B., T.9.1, X.8.1
GEORGIADOU Dimitra, N.9.3
GERICKE Eike, S/10-P.18
GERKE Sebastian, E.XI.3, Q.4.6
GHAEMI Ali, W.9.4
GHERENDI Florin, T/PI.49, T/PI.57
GHIDELLI Matteo, Q.11.13
GHILOUFI Imed, F/PI.31, F/PI.37
GHORAI Arup, B/P.17.62
GHORBANI Elaheh, E.VII.7
GIANGREGORIO Maria Michela, S.11.4
GIANINA-FLORENTINA Popescu-Pelin, X/P_1.29
GIAUME Domitille, B.16.5, E.IV.4
GIBA Alaa Eldin, O.6.1
GIM Suji, W/P4.0
GIORDANI Silvia, K.IV.10, K/PIV.6
GIORGIO Michele, L/P.1.10
GIOVANELLA Umberto, L.1.5
GIRTAN Mihaela, C/P.13.1, D/P.8.16, D/P.8.17, L/P.1.23, T/PI.10
GITY Farzan, N/P.15.33
GKANTZOUNIS Georgios, U/P.3.13
GLENSK Albert, U.5.7
GLUNZ Stefan, P.4.1
GLUSHKO Oleksandr, W.2.2
GLUSHKOVA Anastasia, L/P.1.4

INDEX

GNILITSKYI Iaroslav, X.2.2
GODET Julien, W.1.4, W/P5.0
GODLEWSKI Marek, Q.11.5, R.9.6
GOGOTSI Natalie, N.6.3
GOGOTSI Yury, B.12.4, J.4.6
GOKER Seza, C/P.13.41
GOLA Adrien, W.5.3
GOLDONI Guido, N.13.3
GOLOBIC Alexandra, A.1.4
GOMÉS Séverine, S.14.2
GOMEZ Clara M, H.9.6
GOMEZ Enrique, L.1.1
GOMEZ Leyre, E.II.3
GONCHAR Kirill, P/P.9.7
GONZALEZ Zoraida, B/P.17.34
GONZALEZ-CASTAÑO Miriam, F.IX.6, G.WMa.3
GONZALEZ-FLORES Victoria Elena, D.13.4
GONZALEZ-POSADA Fernando, Q.7.8, Z.III.2
GONZALEZ-TRUJILLO Miguel Angel, N/P.8.40
GONZALO Elena, B.19.2
GONZALO Jose, X.3.4
GORAI Prashun, H.7.2
GOUILLART Emmanuelle, Q.1.4
GOURBILLEAU Fabrice, R.10.1
GOZHYK Iryna, R.1.6
GRACE Iain, M/IV-P.19
GRANGE Rachel, Z.III.4
GRANT-JACOB James Andrew, Q.1.9, Q/PW.15
GRAPES Michael, A.4.3, A.5.3
GRECO Enrico, F/PI.41, F/PII.25
GREEN William, P.17.1
GREGORIO Garcia, H/P.4.13
GREGORKIEWICZ Tom, R.3.4
GREHL Thomas, S.9.1
GREUNZ Theresia, S.8.4
GRIES Thomas, Q/PW.14
GRIGORESCU Cristiana E. A., I.I-40.5
GRIMAUD Alexis, B.18.5
GRIMOLDI Andrea , B/P.17.44
GRISOLIA Jeremie, R.5.2
GROENEN Rik, T.9.7, X.8.6
GROMYKO Inga, F/PII.32, T/PI.55
GRÖNER Lukas, Q.4.8
GRUBER Manuel, L/P.1.12
GRUMEZESCU Valentina, X/P_1.69, X/P_1.70, X/P_1.71, X/P_1.72
GRUNIN Alexey, Q/PT.49
GRUNLAN Melissa, K.II.6, K.II.9
GRUVERMAN Alexei, T.12.3
GSCHWIND Fabienne, B.18.1
GSTALTER Marion, X.5.6
GUAN Cao, V.3.3
GUARNACCIO Ambra, C/P.13.23, X/P_1.64
GUBANOV Viktor, V/P.14.68
GUDOVSKIKH Alexander, E/PI.16
GUEN Eloïse, S.14.1
GUERRINI Niccolo, B.18.3
GUEYE Magatte Niang, M/IV-P.1
GUHA Prasanta Kumar, V.13.7
GUHL Conrad, B.19.5
GUILLAUME Clement, T.16.6
GUILLET Nicolas, G.TA.1
GUILLO LOHAN Benoit, E/PI.14
GUIZANI Ikram, E/PI.28, E/PI.29, E/PI.30, N/P.8.37, N/P.15.47, W/P8.0, W/P9.0
GULDI Dirk, K.IV.5
GÜLLÜ Hasan Hüseyin, D/P.15.24, E/PI.31, E/PI.32
GULZAR Umair, B/P.9.36
GUNDUZ Emre, A.3.4
GUO Xiangli, A/P.7
GUO Xin, G.MA.4
GUO Yu-Ling, E/PI.46
GUOMIN Wang, K.PIII.8, K.PIII.6
GUPTA Anu, Q/PW.23
GUPTA Reema, T/PII.43
GUREL Hikmet Hakan, I/P-5.3, K/PIV.4
GUREVICH Evgeny, X.6.2
GURIEVA Galina, E.VII.5, E/PI.18
GUTIERREZ Julio, Q.1.6, K/FPII.8
GUTSCH Sebastian, P.6.2
GWAK Jihye, D/P.15.31
GWOZDZ Katarzyna, E/PI.55

H

HA Viet-Anh, D.4.2
HA Ye-Seol, W/P7.0
HAASTRUP Mark, N/P.15.39
HÄCKER Joachim, B/P.9.35
HADDAD Clara, L/P.1.25
HADERMANN Joke, G.TA.2
HADJ TAIEB Amine, J/P.2.4
HADJERSI Toufik, F.II.6
HADRI Adil, E/PII.48, N/P.15.23, T/PI.25
HAJJI Mohammed, H/P.4.1
HAJKOVA Zdenka, D/P.15.34
HAJNDL Ognjen, B.20.4
HALAOUI Lara, E/PII.46
HALDAR Prasenjit, B/P.9.31
HALLEY David, R.7.10
HAM Juyoung, B/P.9.64
HAMEDI Mahiar Max, J.6.6
HAMIDI-SAKR Amer, M.XI.2
HAMILTON Jeremy, F.XIII.3
HAMMER René, Q.3.2
HAN Il Ki, N/P.8.6
HAN Jeon G., Q/PW.6
HAN Jin, V/P.8.8
HAN Joong-Hee, B/P.17.46
HAN Mijeong, G/P.TAa.13
HAN Yao, W.6.2
HANAN Absike, D/P.8.20
HÄNNINEN Tuomas, Q.7.11
HANNOUR Abdelkrim, V/P.8.2
HANSEN Poul Erik, S.17.3
HAO Ruiying, E.VI.1
HAO Sun, N/P.8.22
HAOBIN Zhang, A.7.3
HAQUE Saif, E.II.4
HARDY An, Q.7.4
HASANLI Nizami, O/P.7.4
HASCHKE Sandra, B/P.17.10
HASSOUN Jusef, B.3.4
HATIP Meryem, K.FII.10, K.PV.12
HATTE Quentin, Q/PM.7
HATZIKRANIOTIS Euripides, H/P.4.18
HAUPT Karsten, K.I.8
HAUTIER Geoffroy, T.4.3
HAVELUND Rasmus, S.16.2
HAVRYLIUK Oleksandr, U.2.5
HAYAT SOYTAS Serap, G.MA.2
HAYDOUS Fatima, F.X.6
HEENEY Martin, L.1.1
HEIDMANN Berit, E.III.6
HEINZ Sven, H/P.4.5
HEITMANN Johannes, P.14.1
HEITZ Johannes, K.I.19
HELMERSSON Ulf, Q.6.1
HEORHII Vorobets, K.II.11, K.PII.7
HERMANN Jörg, X/P_1.76
HERNANDEZ Sergi, R/P1.26
HERNANDEZ Simelys, F.XI.1
HERNANDEZ-SOSA Gerardo, I.I-6.1, L.1.6
HERRBACH Julie, L.1.3
HERTWIG Andreas, S.11.3, S.18.1
HERYNKOVA Katerina, P/P.9.36
HESS Peter, S.2.3
HEYDARIAZAD Mohammadreza, B/P.17.28
HIRAMOTO Masahiro, L.1.5
HIRATA Ikue, L/P.1.11
HIROI Homare, E.VII.1
HO Chun Yuen, D.16.5
HO Peter, L.1.8
HODGSON Peter, N.16.2
HOFMANN Stephan, P.7.1
HOLFELDER Ina, S.12.3
HOLMAN Zachary, P.4.4
HOLOVSKY Jakub, E/PII.51
HOLYNSKA Malgorzata, Q/PW.49
HONEY Shehla, V.10.9
HONG Chung Su, B/P.9.59
HONG Won G., G/P.TAa.27
HONG-MIN Shim, A/P.22
HÖNICKE Philipp, S.4.3, S/10-P.4
HONORATO Camila, Q.5.5, K/FPII.3
HOPKINS Margaret, O.2.2
HOPPER Tom, L/P.1.6
HORIKE Satoshi, B.14.1
HOSSAIN Md Anower, D/P.8.10
HOßBACH Christoph, B/P.17.35
HOSU Ioana Silvia, V/P.14.65
HOU Jianhui, C.1.3
HOU Xianhua, G/P.TAa.3
HOYE Robert, D.17.1
HSIAO Yu-Sheng, K.VI.5
HSU Klaus Yung-Jane, P.14.5
HU Benlin, L.1.10
HU Che-Ming, K.VI.4
HUA Tan, B/P.17.16
HUAFEI Guo, D/P.8.8
HUANG Chia-Ching, P/P.9.38
HUANG Chien-Chao, P/P.9.12, P/P.9.26
HUANG Jiaqiang, G.MAa.1
HUANG Peng Yang, T/PI.3
HUANG Rui, P/P.9.40
HUANG Ting-Kai, N/P.15.17
HUANG Wei-Chih, D.2.3
HUANG Wen-Chang, O/P.7.27
HUANG Ying, K/PIII.2
HUANG Yu Sheng, F/PII.17
HUANG Zhi Xiang, B/P.9.55
HUBER Patrick, Y.IV.1
HUBMANN Andreas, L/P.1.8
HUFNAGEL Alexander, F.VII.5
HUIMIN Wang, T.10.4
HULIK Jacub, X/P_1.44

in bold : invited speaker - /P : poster

HUMAYOUN Usama Bin, R/P1.27
HUMLICEK Josef, O.1.3
HUSANU Marius, T.2.4
HUYNH Thi Trang Dai, X/P_1.11
HWANG Dae-Kue, D/P.15.35
HWANG Jang-Yeon, B.19.4
HWANG Jeonguk, B/P.9.62
HWANG Sang Bin , T/PI.5
HWANG Seok-Ho, L/P.1.29
HWU Yeukuang, K.VI.2
HYEON-JUN Lee, N.7.2
HYETT Geoffrey, F.XV.6
HYVL Matej, P.7.4

I

IBÁÑEZ Maria, H.6.2
IBRAIKULOV Olzhas, C/P.13.14
IERIDES Ioannis, D/P.15.25
IFTIMIE Sorina, C/P.13.30, E/PI.43
IFTIQUAR Sk Md, E.XIV.4, Q.7.2
IKARI Tetsuo, E.IX.6
IKEDA Susumu, L/P.1.27
IKEZOE Yuki, Y/PI.4
ILIE Alina Georgiana, X/P_1.34
ILLERA Sergio, R.10.6, U.4.3
ILMEM RAFIKA Kriba, B/P.9.40, M/IV-P.13, M/IV-P.14
IMAI Masato, N/P.8.16, T/PI.14
IMHOFF Luc, T/PI.12
INACIO Pedro , I.I-15.2
INOUE Asuka, P.2.5
INOUE Ippei, K/PV.11
INSUNG S. CHOI Insung, K.I.5
INTAWIN Pratthana , T/PII.27
ION Valentin, X/P_1.53, X/P_1.57
IONETE Eusebiu Ilarian, V/P.14.22
IRIMICIUC Stefan-Andrei, X.4.5, X/P_1.67
IRRERA Alessia, N.10.2, P.7.3
ISAC Luminita, Q/PW.18
ISIK Mehmet, O/P.7.3
ISKANDAR Abdo, U/P.3.3
ISLAM Rakibul, M.VII.3, L/P.1.12
ISMACH Ariel, N.11.4
ISMAILOV Usein, J.5.7, J/P.2.1
ISTANBULLU Bilal, Q/PM.15
ITOH Toshihiro, J.5.1
ITOH Yuhki, P.14.4
IVANISHCHEV Aleksandr, B/P.17.49
IVANOV Dmitry, X.6.3
IVEY Douglas G., B/P.17.59
IYASARA Adindu, H.11.2

J

J.DANIEL Prades, U/P.3.23
JABRI Slaheddine, N.7.6
JACAS BIENDICHO Jordi, G.WM.4, B/P.17.20
JACKSON Adam, T/PI.40
JACOB Stephane, H.7.6
JADHAV Vijaykumar, B/P.9.2
JAKUPOVIC Dilara, K.FI.5, K/FPI.3
JANG Boyun, E/PI.4, P/P.9.22
JANG Jiuk, J.1.2
JANG Min Hyeok, E/PII.28
JANISCH Rebecca, W.4.1
JANOLIN Pierre-Eymeric, T.13.1
JANSSEN René, L.1.5
JAOUL Cedric, Q/PM.53
JARAMILLO Juliana, U.2.3
JARIWALA Deep, D.10.1
JAVDOSNAK Daniel, Q/PM.14
JAYAWARDENA Imalka, V/P.14.67
JEDSUKONTORN Trin, F.III.6
JENA Sanjoy, C/P.13.4
JENG Shie-Chang, N/P.8.5
JEON Eun-Chae, K/PI.8
JEON Sohee, N/P.8.26
JEONG Beomjin, D/P.8.13
JEONG EUN Park, E/PI.13
JEONG Giuk, D.13.2
JEONG Hyeon-Ho, Q.8.8
JEONG Keunsoo, V/P.14.47
JEONG Youngwoo, Q/PM.9
JEONG Yu Ra, Q/PT.34
JESUS ENRIQUE Velazquez Perez, N.10.3
JEYNES Chris, S.13.5
JI Hyunjin, M/IV-P.3
JI Qingbin, O/P.7.26
JI Sangyoon, V.2.2
JIA MING Ang, G.WMa.5
JIANG Jane, S.3.1
JIANG Yingda, V/P.8.6
JIN Bongsoo, B/P.9.45
JIN KYOUNG Park, N/P.8.33
JIN Ye-Jin, V/P.14.17
JINJIANG Xu, A/P.9
JO Byung Hoon, K/FPII.16
JOHNSEN Rune E., G.TA.3
JONES Julian, K.I.9
JOO Sungjae, H/P.4.8
JOUANE Ahmed, C/P.5.13
JOYCE Caoimhe, K.V.7
JUILLARD Sacha, C/P.13.26
MICOVA Julia, R/P1.28
JUN Hoyoung, Q/PM.10
JUNG Ha-Kyun, G/P.TAa.7
JUNG Heesuk, D/P.15.29
JUNG Hyun Min, R/P1.29
JUNG Jiyoon, B/P.9.21
JUNG Kyu-Nam, B/P.9.24
JUNG Minkyung, N/P.15.29
JUNG Young-Kwang, V/P.14.11
JUNTUNEN Taneli, H.10.5

K

KABASHIN Andrei, X.3.1
KAESTNER Bernd, S/5-P.13
KAFIZAS Andreas, F.IV.7
KAHLAOUI Sarah, D/P.8.19
KALAS Benjamin, S.12.2
KALFAGIANNIS Nikolaos, R.1.5
KALLMAYER Christine, J.8.4
KALLUPALATHINKAL CHANDRAN Bevita, R.8.4
KALPAKLI Yasemen, F/PI.21
KAMALIYA Bhaveshkumar, V/P.8.76
KANG Bong Kyun, V/P.8.40
KANG Kyeong Tae, T/PI.11
KANG Na-Ri, W.6.1
KANG Seong Jun, N/P.8.18
KANG Sungmyung , K/FPII.21
KANG Woo Seok, Q/PM.6
KANJER Armand, Q.8.4
KAR Anurag, V.10.5
KARAAGAC Hakan, N/P.15.21, P/P.9.17, Q/PM.13
KARABANOV Sergey, F/PI.15, T/PII.5, T/PII.6
KARAKULINA Olesia, B.16.1
KARAN Sumanta Kumar, R/P1.30
KARASEOV Platon, P.12.4
KARATAS Ayse, R/P1.31
KARIMI Shabnam, Q/PT.10
KARTTUNEN Antti, J.4.5
KARUNAKARAN Logesh, L/P.1.15
KASIRI Ghoncheh, B/P.9.30
KATERSKI Atanas, D/P.15.21
KATIS Ioannis, X.11.5
KATO Koichi, K.VI.6
KATSOGRIDAKIS Charalampos, I.I-9.1
KATSUYAMA Naoya, C/P.13.3
KAUR Gurpreet, Y.II.2
KAUTEK Wolfgang, W.9.3, X.2.6, X.3.2, Q/PW.28, X/P_1.24, X/P_1.26
KAVAN Ladislav, F.IX.2, N/P.15.14
KAWATA Kazuki, Y/PI.2
KAYA Pinar, H.11.3
KAYSER Sven, S.3.3
KAYSER Yves, S.4.5, S/10-P.6
KAZAN Michel, U/P.3.4
KAZHEVA Olga, L/P.1.20
KEHAGIAS Thomas, N.3.5
KEHNE Philipp, G.MM.1
KELLER Valérie, F.VII.1
KEMERINK Martijn, M.VII.1
KEN Olga, P/P.9.49
KENYON Anthony, R.7.1
KERRAMI Zineb, H.2.6
KHAN Ibrahim, F.XIV.5
KHANIKAEV Alexander B., Z.V.6
KHAREL Sharad, K.FII.6
KHEAWHOM Soorathep, B.4.2
KHEMIRI Naoufel, D/P.15.6, D/P.15.7, D/P.15.8
KHODABAKHSH Mohammadreza, V/P.14.27
KHOMENKOVA Larysa, R.1.7, S/5-P.20
KHOO Pei Loon, E.IX.3
KHOUBEIB Chakir, W/P10.0
KHUSHALANI Deepa, F.III.7, E/PI.1
KIENBERGER Ferry, S.17.4
KIENER Daniel, W.1.1
KIKUCHI Mitsuru, C/P.5.18
KILDEMO Morten, S.11.1
KIM Chang-Gyoun, V/P.8.26
KIM Dongyoung, B/P.9.20
KIM Doohun, Q/PM.23
KIM Eui Hyuk, N/P.8.9
KIM Eun Kyu, E/PII.11, E/PII.20
KIM Heesuk, V/P.8.43
KIM Hoijoon, R/P2.18
KIM Hongki, V/P.8.75
KIM Hyunchul, Q/PT.9
KIM Hyung Jin, I/P-10.3
KIM Hyunjung, N/P.8.24
KIM Jae Hyun, G/P.TAa.6
KIM Jang-Joo, N.5.1
KIM Jeong Hwan, N/P.8.4
KIM Jeongheon, B/P.9.16
KIM Ji Hwan, L.1.7
KIM Ji Tae, V/P.8.27
KIM Jin Sun, V/P.8.38
KIM Jin Yong, P.12.2
KIM Jin Young, V/P.8.65

INDEX

KIM Jong-Woo, T.13.4
KIM Joohee, J.7.3
KIM Jooheon, H/P.4.15
KIM Ju Seong, D.16.3
KIM Ju Young, B/P.9.23
KIM Juae, C/P.5.5
KIM Jung-Hwa, L/P..0
KIM Junsoo, I.I-36.5, L/P.1.16
KIM Kang-Pil, D/P.15.27
KIM Kihwan, E/PI.38
KIM Kwon-Hyeon, L.1.3
KIM Minseob, V/P.14.53
KIM Moohyun, N/P.8.27
KIM Myung Hwa, V/P.14.73
KIM Na Rae, V/P.14.3
KIM Sangwon, P/P.9.24
KIM Sangwoo, A/P.17
KIM Seonmin, V/P.14.42
KIM Si-Hoon, W.6.4
KIM Soo Young, Q/PM.8
KIM Sung-Sil, A/P.14
KIM Tae Hee, M.V.5, Q/PW.35
KIM Yeon Hoo, V/P.8.7
KIM Yeon Soo, N.16.5
KIM Yongtae, L/P.1.3, N/P.15.11
KIM Young Been, D/P.15.14
KIM Youngsun, V/P.14.49
KINSEY Alex, A.3.5
KIPPELEN Bernard, N.9.1
KIRBIYIK Cisem, E/PI.5
KIRCHARTZ Thomas, C.7.4
KIREMITLER Nuri Burak, Q/PT.47
KIRNER Sabrina, K.I.20, X.2.5
KITAMURA Hayato, V/P.14.7
KLAPETEK Petr, S/10-P.10
KLAUK Hagen, L.1.8
KLEIN Andreas, T.15.1, T/PI.22
KM Han-Ki, C/P.5.6, D/P.8.6, Q/PM.2
KNOCH Joachim, P.16.1
KOBAYASHI Takeshi, G.TM.1
KOBAYASHI Yuka, M.X.2
KOBLISCHKA Michael, T/PII.46
KOÇ Mehmet, D/P.8.38
KOEHLER Anna, C.9.4, M.VIII.5
KOEHLER Fabian, P.16.3
KOENIG Dirk, P.12.3, P.16.2, R.6.7, P/P.9.31
KOH Carolyn, E.V.1
KÖHLER Malte, E.VI.4
KOKI Kaita, H/P.4.6
KOLBE Michael, S.13.6, S.15.3, S/10-P.5
KOLIOGIORGOS Athanasios, E/PI.2
KOLLMANNSBERGER Sebastian, F/PII.12
KOMISARCHIK Genady, H/P.4.2
KONCAR Vladan, J.1.1
KONETI Siddardha, Q/PM.49
KONEVA Uliana, N/P.15.61
KONG Dezhi, G.MMa.1
KOO Kee Kahb, A/P.1
KÖPPEL Grit, E.VIII.2
KOSTIUK Dmytro, V/P.8.15
KOT Dawid, S.15.2
KOT Malgorzata, D/P.8.26
KOTOVA Maria, L/P..0
KOVALSKA Evgeniya, A/P.20
KOVALYUK Zakhar, N/P.15.51
KOZIC Darjan, W.5.4
KOZLOV Oleg, C.6.2
KRAEVAYA Olga, K/PIV.5
KRAHNE Roman, N.13.4
KRASNOSHCHOKA Anastasiia, O.2.3
KRC Janez, E.XIV.7
KREISLER Alain, T/PII.37
KRIKUN Georgii, M/IV-P.8
KRUEGER Joerg, X/P_1.4
KRYSIAK Olga, F.XI.6
KTIFA Skander, Q/PW.4
KUDERA Stefan, N.6.4
KUDO Kazuki, L/P.1.8
KUDRYASHOV Dmitry, Q/PT.18
KUMAR Avesh, N/P.15.6
KUMAR Navneet, S/5-P.10
KUMAR Prabhat, N/P.8.2
KUMAR Sumit, O/P.7.2
KUMAR Suresh, N/P.15.59, V/P.8.73
KUMAR Vikas, E.II.6
KUNDYS Bohdan, E/PI.39
KUO Chiung, K.VI.12
KUO Tai Chen, N/P.15.8
KUO Wen-Shuo, V/P.8.1
KURELCHUK Ulyana, H/P.4.16
KURRA Narendra, B.8.4
KUSOVA Katerina, P.2.2
KUZMIN Alexei, F/PII.13
KVASHNIN Dmitry, V/P.14.24
KWAG Sung Hoon, V.5.2
KWON Ahram, Q/PW.38
KWON Eunsang, V/P.8.46
KWON Heera, T/PI.15
KWON Ji Eon, B.10.2
KWON Jung-Dae, Q/PM.3
KWON Oh Hyeong, K/PIV.2
KWON Sehun, Q/PT.2
KWON Seokbin, N/P.15.52
KYEONG MIN Cho, F.IX.5

L

LA FERRARA Vera, C/P.13.10
LABBE Christophe, R.3.8
LACAZE Emmanuelle, R.6.1
LACHEBI Ines, Q/PW.40
LAGRANGE Thomas, A.3.1
LAHINER Guillaume, A/P.12
LAI Hsaio Ping, L/P.1.24
LAI Samson, B/P.17.27
LAIK Barbara, B.7.3, B/P.9.28
LALANNE Philippe, Z.II.3
LAMBERT Colin, M.X.4
LAMIA Radjehi, O.9.3
LAMJED Debbichi, E/PI.51
LAMPIN Evelyne, U.4.4
LAMRI Salim, Q.8.3
LANCEROS MENDEZ Senentxu, K/PI.6
LANCOK Jan, R.2.3
LANG Augustus, Y.II.3
LANNEBERE Sylvain, Z.V.2
LARANJEIRA Marta, K.V.9
LARDHI Sheikha, E/PI.33, F/PII.26
LASSALLE Benedikt, S.12.1
LATOUR Benoit, U/P.3.18
LAUBE Jan, P/P.9.32
LAURIA Alessandro, R.3.7, T.2.5
LAVENAS Magali, R.9.5
LAVISSE Luc, X.5.4
LE CORRE Vincent, C/P.5.7
LE FEBVRIER Arnaud, H.7.4
LE Ha-Linh Thi, Q/PT.3
LE Haonan, D.14.3
LE Hoai Nga, F.XV.3
LE LAY Guy, P.3.1
LE TRAN Hoang-Long, O.5.4
LEBORGNE Chantal, V/P.14.30
LECLER Sylvain, X.2.4
LEE Ching-Sung, O/P.7.9
LEE Chulwoo, N.12.4
LEE Dongchan, N/P.8.45
LEE Dongsoo, B/P.9.14
LEE Eon Ju, Q/PW.11
LEE Eunji, V.9.5
LEE Haerang, L/P.1.19
LEE Heejin, D/P.8.25
LEE Jaehong, J.7.2
LEE Jinwoo , V.5.1
LEE Jong-Won, T/PII.3
LEE Jung Hye, Q/PM.40
LEE Kwang-Sup, N.6.1, V.10.1
LEE Lana, O/P.7.17
LEE Min Ho, E/PII.29
LEE Min Ji, E/PI.34
LEE Po-Ming, T/PI.7
LEE Sang Kyu, C/P.5.17
LEE Sang-Jin, Q.5.4
LEE Sang-Soo, R/P2.4
LEE Seungbok, B/P.9.54
LEE Seung-Mo, K.FI.3
LEE Sol A, F.XI.5
LEE Sori, Q/PT.22
LEE Tzu-Yuan, F/PII.6
LEE Woo-Jung, E/PII.33
LEE Yoonjae, B/P.9.17, B/P.17.9
LEE Young Hun, B/P.17.43
LEE Young Kuk, E/PII.6
LEE Yu, V.12.5
LEFEVRE Christophe, T/PII.10
LEFEVRE Robin, H.9.2
LEI Jesse, K.III.18
LEI Jiang, K.III.1
LEIDENS Leonardo, Q/PT.44
LEINEN Dietmar, Q.7.10
LEMAIRE Vincent, V.13.5
LENTIJO MOZO Sergio, V/P.8.79
LEO Karl, C.6.1
LEON PEREZ Edgar, R.7.7
LEONARDI Francesca, L.1.7, I/P-9.3
LEONE Federica, K.FPI.6
LEONG-HOI Audrey, S.11.5
LEONI Stefano, G.TM.3, H.1.3
LEPADATU Ana-Maria, R/P1.18
LESAGE Arnon, O.6.2, P.10.4
LESNYAK Vladimir, N.11.1
LETTIERI Stefania, K.IV.13
LEUNG Winnie, D/P.15.20
LÉVÊQUE Patrick, C/P.13.36
LEVTCHENKO Alexandra, E.IV.5
LEWANDOWSKA Anna E, S.7.3
LEWIS Ryan, N.11.3
LHERITIER Pierre, L/P.1.11
LHUILLIER Emmanuel, N.12.2, R.4.5
LI Hongfei, B/P.17.36
LI Dapan, E/PII.16
LI Dongsheng, R/P2.30
LI Kaikai, B.16.7
LI Qingfeng, X.1.3

in bold : invited speaker - /P : poster

LI Shichun, A.7.2
LI Tao, B/P.9.22
LI Wan, N/P.15.43
LI Xuan, T/PII.40
LIANG Yanliang, G.TMa.1
LIAO Ching-Han, L/P..0
LIAO Jia-Liang, V/P.14.38
LICITRA Christophe, S/5-P.21
LIEDEL Clemens, B/P.9.50, B/P.17.37
LIM Hong Chul, B/P.17.25
LIM Soo Yeon, G.MMa.2
LIMBURN Gregory, D/P.8.30
LIN Ching-Wei, K.FI.1, K.IV.8
LIN Congmei, K.III.9
LIN Ping Hong , K/FPII.19
LIN Wei-Ming, G/P.TAa.8
LINDROTH Daniel, U.1.3, U/P.3.19
LINNROS Jan, R.3.1
LINSEIS Vincent, M.VII.5, T/PII.4
LISCIO Fabiola, M/IV-P.20
LIST Mathias, C.12.3
LITTLE Brian, A.6.2
LIU Chaoping, O.5.1
LIU Daobin, B.6.3
LIU Fanmao, T/PII.41
LIU Feilong, C.4.5
LIU Han-Yin, Q.2.2
LIU Kang, R.2.4
LIU Lifeng, D.16.1, V.3.6
LIU Xiaobin, F/PI.9
LIU Xuelian, B/P.9.10
LIU Ye, V/P.14.1
LIU Yong, P.4.2
LIU Yu, P/P.9.44
LIU Yueli, F/PI.19
LIU Yunong, D.3.3, E/PII.10
LIVIU CRISTIAN Tanase, T/PII.17, V/P.14.31
LLORDES Anna, B.20.2
LLOYD Julian, V.9.2
LODOLA Francesco, I.I-12.1
LOH Yue Yan Amelia, K.FII.11
LOHAUS Christian, F.VIII.6
LOKAR Ziga, E.XII.2
LOMOV Andrey, Q.2.5
LONG Brenda, P/P.9.15
LONG Sebastian, H.7.3
LOPEZ SANCHEZ Jesus, T.9.6, T/PII.32
LOPEZ-VIDRIER Julian, P.2.6, P/P.9.30
LORENZ Chris, U.5.4
LORENZ Pierre, T/PI.30
LOURO , O.6.3
LOUWSMA Jeroen, Q/PT.6
LOVVIK Ole, H.3.5
LU Sih Ting, R/P2.1
LU Zhonghua, A/P.10
LUCARINI Fiorella, F.V.2
LUCCHINI Mattia, V.4.4
LUCID Aoife, B.14.6, B/P.17.52
LUFRANO Francesco, B.11.5
LÜHRS Lukas, W.9.1
LUKE Lee, I.I-23.4
LUMBEECK Gunnar, W.3.5
LUNCA POPA Petru, D.4.3
LUNCHEV Andrey, L.1.9
LUND Anja, J.4.3
LUO Ningqi, K/PIII.3
LUO Shyh-Chyang , K.III.4
LUO Wen, V/P.14.28
LUSCOMBE Christine, L.1.1
LV Junjun, Q.7.7
LYONS Stephen, K/FPII.18
LYU Fucong, G/P.TAa.2

M

M Prashanth Kumar, C/P.13.35
MA Chunqing, D/P.8.18
MA Mingming, K.III.12
MA Qinglang, T/PI.6
MA Qingming, V/P.8.32
MA Tao, A.3.2
MADUREIRA SILVA Julio Cesar, C/P.13.20
MAEDA Tsuyoshi, E.III.7
MAES Jorick, N/P.8.29
MAES Wouter, L.1.6
MAHENDRAN Srinivasan, W.2.4
MAITRA Anirban, B/P.17.14
MAJOR Jon, D.7.3
MAJOR Lukasz, Q.10.3, Q/PT.7
MAJOR Roman, K.FI.6, K/FPI.5
MAJUMDAR Dipanwita , N/P.15.48
MAJUMDAR Dr. Sayani, M.III.4
MAJUMDAR Isheta, E.III.4
MAJUMDER Sutripto, N/P.8.19
MAKASHEVA Kremena, R.9.7
MAKHOTKIN Igor, S.4.4, S/10-P.13
MAKOGON Yrii, H/P.4.14, Q/PM.34
MALEK Atyaoui, E/PII.3
MALERBA Claudia, D/P.15.32
MALPARTIDA CARDENAS Kenny Shannen, I.I-26.4
MALYI Oleksandr, V.11.5
MALZER Wolfgang, S/10-P.2
MAMMERI Fayna, V.7.2
MANAI Leila, R.10.5
MANDA Gina, K.IV.11
MANDEL Karl, V.4.5, V/P.8.18
MANDHOUR L., M/IV-P.22
MANDIC Vilko, Q/PM.50
MANINI Paola, I.I-3.1
MANNANOV Artur, L/P..0
MANOOCHERI Farshid, S.18.4
MANZOOR Muhammad Umar, W.10.4
MARC Courte, D.14.4, L/P.1.4
MARCAUD Guillaume, P/P.9.48
MARCHETTI Francesca, T/PI.54
MARCHIORI Bastien, I.I-39.5
MARCU Aurelian, V.13.8, X/P_1.73
MARCULESCU Catalin, I/P-2.3
MARDARE Andrei Ionut, T/PII.39
MARESOVA Eva, J.6.5
MARIA ELENA Fragalà, F.I.3
MARIE-SAINTE Uriel, V.7.4
MARINARO Mario, B.15.6
MARINO Emanuele, N.11.5, V.9.4
MARISCAL Antonio, N.4.5, T.9.2, X.8.2
MARK Geza I., K.II.10
MAROUENE Khalifa, E/PII.7, Q/PW.1
MARTEL David, E.IX.8
MARTI Antonio, E.XIV.6
MARTIN Elodie, T.9.3, X.8.3
MARTIN Joshua, H.9.4
MARTIN Manfred, T.7.1
MARTINEZ Aaron, D.5.3
MARTINEZ GUTIERREZ Diego, U/P.3.15
MARTINEZ MARTINEZ Diego, Q.8.6, Q/PM.51, Q/PW.41
MARTINEZ POZZONI Umberto, W.8.3
MARTINEZ-FERRERO Eugenia, N.14.4
MARTINEZ-TONG Daniel, S.2.4
MARTINI Luca, E/PI.23
MARTINS Pedro, F/PI.42, F/PI.43
MARTIN-SANCHEZ Javier, X.9.1
MARTYNOVA Natalia, R/P2.8
MARZOUK Asma, G.MA.1
MARZOUK Samir, C/P.13.37
MASCARENHAS SANTOS Edson, Q/PM.39
MASCARETTI Luca, F.VI.3
MASSAOUTI Maria, X.1.2
MASTAIL Cedric, Q.1.7
MAS-TORRENT Marta, M.XI.3
MASTOURI Wejdene, W.6.6
MATEI Alina, T/PII.24
MATEI Andreea, X/P_1.31
MATHEVET Fabrice, L.1.7, N.9.2
MATRAS-POSTOLEK Katarzyna, F/PI.18
MATSIDIK Rukiya, L.1.8
MATSUSHIMA Toshinori, N.2.1
MATTANA Giorgio , I.I-11.1
MAULOUET Tony, X.7.2
MAUREL Agnes, Z.IV.6
MAYER Matthew, F.XI.2
MAZEL Yann, S.9.2
MAZHUKIN Alexander, X/P_1.13
MAZHUKIN Vladimir, X/P_1.14
MCCULLOCH Iain, C.1.1
MCGLYNN Jessica, B/P.9.29
MCNELLIS Erik R., M.VI.3
MEABE Leire, B.11.2
MEAZZINI Ilaria, L/P.1.5, V/P.8.39
MEDEIROS Paulo V C, V.6.2
MEDVIDS Arturs, E/PI.50
MEENA Deshraj, V/P.14.61
MEES Maarten, B.7.6
MEHES Gábor, K.II.18
MEHTA Manan, F/PII.7
MEIR Rinat, K.V.8
MELDRUM Al, P.13.1
MELIS Claudio, U/P.3.9, U/P.3.10
MELKONYAN Davit, P.8.3
MENCARAGLIA Denis, E/PII.50
MENCHINI Francesca, E/PI.15
MENDES Manuel João, E.XII.3
MENESGUEN Yves , S/10-P.12
MENG Zhao, N/P.8.15
MENON Samvit, O.5.5
MERABIA Samy, U.2.4
MERDZHANOVA Tsvetelina, B/P.17.12
MERLE Benoit, W.7.2
MERTIN Stefan, Q.4.9
MERY Stephane, N.5.5
MESQUITA Alexandre, N/P.8.38
MESSAI Youcef, F/PI.29
MESSINA Grazia Maria Lucia, K.I.6
MESTRES Narcis, T.8.4
MEWS Mathias, E.XI.6
MEYERHEIM Holger, T.16.1
MEYNS Michaela, G.TMa.5
MICHAEL Sachs, D.16.2
MICHALOWSKI Peter, B/P.17.41

INDEX

MICHEL Anny, Q.3.3, Q/PM.42
MICHLICEK Miroslav, Q/PW.29
MIESZALA Maxime, W.4.3
MILTON Graeme, Z.II.5
MING-KIU Tsang, R/P2.10
MINHO Kim, A/P.21
MINSEOK Seo, Z/P.VI.6
MIRABELLA Salvo, V.3.7, T/PI.23, T/PI.24, V/P.8.45
MIRESMAEILI Reza, Q/PM.22
MIRICIOIU Marius, V/P.8.44
MIRITELLO Maria, R/P2.19
MIRKHALAF Mohammad, K.FII.3
MITSUBAYASHI Kohji, I.I-24.4
MITSUGI Fumiaki, S/5-P.22
MITU Bogdana, Q/PM.18, Q/PT.35, T/PII.42
MOADHEN Adel, R/P2.24
MODANESE Chiara, S.7.5, S.15.4
MODREANU Mircea, S.7.1
MOHAMED Fatema, V/P.8.72
MOHAMMAD TOUFIQ Arbab, N.1.2
MOHAMMADI Ehsan, P/P.9.27, P/P.9.28
MOHAMMED Elmahmoudy, I.I-19.2
MOHAMUD Hibaaq, S/5-P.12
MOHAN Minu, C/P.13.7
MOHD KHAIRUL Ahmad, T/PI.46
MOIA Davide, G.TMa.2, D.17.3G
MOLEPO Mahlaga, N/P.15.49
MOLET Pau, N/P.15.53
MØLLER Søren, X/P_1.39
MOMPIOU Frederic, W.3.1
MONEA Bogdan Florian, V/P.8.48
MONGSTAD Trygve, D.10.3
MONICA Scarisoreanu, F/PII.28
MONTERO AMENEDO Jose, O.5.3, Q.4.12
MONTILLA Francisco, I.I-10.1, V/P.14.34
MOON Joongho, K/PV.5
MOON Taehwan, T/PII.2
MORALES Jorge, B/P.17.38
MORALES-LARA Francisco, K/PIV.7
MORATA Alex, H.10.3
MORCRETTE Mathieu, B.15.4
MOREAU Julien, R.9.1
MORE-CHEVALIER Joris, Q/PW.31
MORENO-ARMENTA Maria, V/P.14.36
MORJAN Iuliana, T/PI.28
MOROKOV Egor, W.10.1
MORONE Antonio, X.9.5
MOROZOV Ivan, E/PI.35
MOSCHOGIANNAKI Marilena, F/PI.27
MOTAY Marvin, F.XII.5, Q.11.12
MOTTI Silvia, D.17.5, N.4.4
MOUSAVI Sayed Hadi, Q/PW.32, T/PI.39, T/PII.29
MOUSAVIHASHEMISARASKANROUD Seyedabolfazl, G.WMa.2
MU Xiaoke, B.16.4, S/10-P.1
MUCCINI Michele, I.I-18.2
MUDAKAVI Rajeev, K.I.14
MUKANOVA Aliya, B/P.9.43, B/P.17.26
MUKHERJEE Subhrajit, N/P.8.48
MÜLLER Bert, K.I.10
MULLER Céline, K.V.2
MÜLLER Christian, C.2.4, K.IV.6
MULLER Martin, E/PI.37
MÜLLER Mathias, X/P_1.50
MUNDE Manveer, T.8.1
MUNJAL Sandeep, R/P2.26
MUNOZ HERNANDO Maria, K/PI.14
MÜNZER Adrian, B/P.9.37, B/P.9.38
MURCIA Sebastian, F.XII.1, T.3.5
MUSUMECI Chiara, K.FII.7
MUTSCHLER Angela, K.PV.8
MUTTER Daniel, B.20.3
MYEONGSEOK Jang, V/P.14.10
MYINT MOH Aye, L/P.1.1
MYLES Adam, K/PII.10

N

NACER EDDINE Boubiche, Q.4.4
NADI Ayoub, V/P.14.69
NÄGELEIN Andreas, S.2.5
NAGY Davidne, D.16.4, F.VIII.2
NAGY Tristan Oliver, X/P_1.48
NAKAGAWA Yoshihiko, D/P.8.27
NALDONI Alberto, V/P.8.56
NAM Chunghee, V/P.8.22
NANAN Suwat, F/PI.1
NANDAN Brajesh, G.TA.5
NANDHAKUMAR Iris, H.3.8
NASI DE BARROS Caio Henrique, Y/PI.1
NASR Maryline, F.I.2, T.3.2, F/PI.13
NASSER Hisham, E/PI.42
NATALI Marco, N.5.4
NAUDIN Guillaume, Q.6.2
NAVARRETE Elena, B/P.17.48
NAVARRO-URRIOS Daniel, R.8.7
NAZAROV Alexei, N.16.3
NECHACHE Riad, E.II.1
NEDILKO Sergii, Y.I.3, R/P1.16
NEDYALKOV Nikolay, X/P_1.8, X/P_1.16
NEHER Dieter, C.3.1
NELL Bernhard, M.VII.4
NENG Yu, K/PII.5
NEUBUAER Avner, N.9.4
NEY Andreas, T.6.1
NG Ngai Hang, V/P.8.30
NGUYEN Dac Trung, E.IX.2
NGUYEN Quoc Hung, V.9.9
NGUYEN Thien Phap, D.15.3, F.XV.5
NGUYEN Thuc-Quyen, L.1.5
NGUYEN Tk Thanh, V.7.1
NGUYEN Xuan Chung, R.4.4
NGUYEN-DANG Tung, J/P.2.2
NI Xia, R/P2.6
NIBEL Olga, B.11.4
NICOLAOU Christiana, E/PII.40
NICOLAS Gines, X/P_1.74
NICOLET André, Z.II.4
NICOLLET Andrea, A/P.2
NIE Fude, A.7.1
NIELSEN Christian, I.I-4.1
NIERENGARTEN Jean-François, K.IV.4, V.6.4
NIKOLKA Mark, L.1.2
NIKOLOV Anastas, X/P_1.40
NIKOV Rosen, X/P_1.43
NIKOV Rumen, X/P_1.36
NILSEN Madeleine, V.9.3
NIQUET Yann Michel, P.12.1
NISTOR Magdalena, T/PI.48
NITA Cristina, B.5.5, B/P.17.53
N'KONOU Kekeli, R.10.4
NKOU BOUALA Galy Ingrid, Q.11.3, Q/PW.26
NOGI Masaya, Y.III.1
NOH Yong-Young, L.1.1
NOLAN Michael, F.VIII.1, T.7.4, T/PI.16
NOLAS George, H.5.1
NOLL Dennis, V/P.14.9
NOLOT Emmanuel, S.1.2
NOVAK Jozef, F/PII.24
NOVAK Petr, T/PI.38
NOVOTNY Michal, Q/PW.42
NÜESCH Frank Alain, C.8.4
NUGRAHA Ahmad, H/P.4.11
NUGRAHA Taufik Adi, O.3.5
NUGROHO Ferry, R.5.4
NUNES Daniela, F.II.1
NUNOMURA Shota, P/P.9.21
NUYTTEN Thomas, S/5-P.24
NYBORG Martin, D/P.8.31

O

O CONNOR Gerard, X.2.1
OCCHIPINTI Luigi, J.3.2
O'DONNELL Conor, N.3.4
OGI Jun, I.I-41.5
OH Jimin, B/P.9.3
OH Sangchul, E/PI.20
OH Yoonseok, R/P2.13
OHNO Yutaka, E.X.2, S.4.2
OHTA Michihiro, H.6.1
OHTANI Bunsho, F.XIII.1
OKAMOTO Yuji, D/P.8.14
OKUZAKI Hidenori, I.I-35.5
OLEKSANDR Ivanyuta, K.III.13, K.FII.8, C/P.5.20, D/P.8.21, I/P-3.3, K/FPII.20, K/PII.12, K/PIII.9, K/PIII.4, K/PIV.1
OLESHKO Vladimir, B.3.5
OLIVA Florian, E.VII.6, D/P.15.30
OLIVA PUIGDOMENECH Arnau, V.10.8, Q/PW.17
OLIVEIRA Filipe J., Q/PW.34
OLIVEIRA Laura, U.5.3, V/P.8.59
OLMEZ Tolga Tarkan, K.V.13
OLSEN Vegard, O.5.2
ONDIC Lukas, P/P.9.43
ÖNER Mualla, K.KV.17, K.PV.2, K.PV.10
ONG Gary, B.14.3, V.9.7
OP DE BEECK Jonathan, B.15.3
ORLANDI Michele, F.XI.3
ORLANDO Stefano, H/P.4.19, X/P_1.49
ORLOVA Ksenia, O/P.7.14
ORMAZA SAEZMIERA Maider, M.I.2
OROZCO Vanessa, R.7.9
ORTEGA Silvia, H.8.5
ORTMANN Frank, M.VI.5
ORY Daniel, E/PI.7
OSAKA Itaru, O.4.1
OSHITA Yoshio, G/P.TAa.17
OSSICINI Stefano, R.4.1, P.14.3, P/P.9.35
OSTAPOVETS Andriy, W.4.2
OUDOT Evan, N.7.3
OUSSAMA Zeggai, N/P.8.21
OVERDEEP Kyle, A.2.3
ÖZCAN Can, E.IX.1

in bold : invited speaker - /P : poster

P

PADHYE Richa, A.4.3
PADMANABAN Dilli Babu, D.11.3
PAEZ PEREZ Miguel, K/FPII.7
PAILES-FRIEDMAN Rebeccah, J.3.1
PAILHES Stephane, H.8.4
PALACIOS Pablo, E/PII.12
PALADE Catalin, N.17.4
PALINKAS András, S.3.5
PALLA-PAPAVLU Alexandra, X/P_1.15
PALMERO Alberto, Q.11.1
PAN Aline, E/PII.8
PAN Qichao, K.III.16
PANIZON Emanuele, U.4.2
PANJAN Peter, Q.8.1
PAPPA Fotini, Q/PT.48, Q/PW.47
PARIA Sarbaranjan, R.7.6
PARK Eunseon, R/P2.14
PARK Gumjae, B/P.9.42
PARK Haedong, Z.I.3
PARK Heun, V/P.8.13
PARK Jae-Cheol, E/PII.27
PARK Jimin, K/PI.1
PARK Keemin, B/P.9.15
PARK Kyoungwan, N/P.15.20
PARK Min-Sik, B/P.9.5
PARK Sehyeon, N/P.8.17
PARK Seo Yun, V/P.14.21
PARK Soonho, O/P.7.1
PARK Sulki, B/P.9.61
PARK Sungkyun, Q/PM.28
PARK Sunjoong, L/P.1.10
PARUI Subir, M/IV-P.16
PASCHOU Despoina, K.FII.9
PASTORELLI Francesco, L.1.6, R.10.3, X.10.5, M/IV-P.21
PASZUK Agnieszka, E/PII.49
PATIL Nikhil, V/P.8.61
PATIL Supriya, D/P.8.5
PATRA Paramita, Q/PM.17
PATSCHEIDER Jörg, Q.10.1
PAUL Biplab, H.11.6
PAUL Blom, L.1.1
PAULIS Evgeniya, X/P_1.58
PAULY Christoph, A.3.6
PAULY Matthias, R.1.3, Z/P.VI.3
PAVLOVIC Marko, K.V.15
PAZ Yaron, F.XV.1
PEARCE Drew, F.V.5
PECHARAPA Wisanu, R/P2.22
PEDROSA Paulo, Q.10.10
PEI Mingyuan, J/P.2.3
PEI Zengxia, V/P.14.20
PEKSU Elif, Q/PM.12
PELATI Daniel , Q.1.10
PELLEGRINO Giovanna, F/PI.16
PELLETTA Marco, Q.2.4
PEMBLE Martyn, T.3.1
PENG Huisheng, B.8.3
PENG Meng, V/P.8.37
PENG Mingzeng, N/P.15.28
PENG Nianhua, P/P.9.50
PENG Xiang, G/P.TAa.14, V/P.8.36
PEREIRA Clara, B.12.1
PEREIRA Luís, Y.III.5
PEREIRA Rui N, P.15.3
PEREZ Ana, L.1.7
PEREZ BARRADO Elena, X/P_1.61
PEREZ TABORDA Jaime Andres, H.3.7
PERIYANNAN Shanmugapriya, F.III.3
PERNIU Dana, F/PI.25
PERNOT Frederic, S.18.3
PERRET Emilie, I.I-28.4
PERRIERE Jacques, T/PI.31, T/PI.32, T/PI.35
PERSSON Nils-Krister, J.6.1
PERTICARARI Sofia, B.10.4
PETERS Kristina, T.15.2, V.10.2
PETRIDIS Konstantinos, C.11.2
PETRIK Peter, R/P2.17, X/P_1.20
PETRONYUK Yulia, W.10.2
PETROV Ivan, Q.1.1
PEVERE Federico, P.1.3
PHAM Son Tung, P.14.6
PHAM Songtoan, M.V.4
PHAM-HUU Cuong, V.6.1, V/P.14.63
PHAN Duy-Dung, F.XV.4
PHILIPPART Catherine, K/PI.4
PIAO Yuanzhe, V.7.5
PICHON Benoit, V.9.6
PICKEN Stephen, K.IV.3
PIERRAT Sebastien, W.9.5, S/5-P.5
PIERRON Robin, X.12.3
PIERSON Jf, Q.9.1, T.4.1, Q/PT.28
PIETRUSZKA Rafal, E/PI.12, Q/PM.26
PILLAI Suresh, F.III.1
PINATTI Ivo, N/P.8.20
PINCHETTI Valerio, N.13.5, N/P.8.36, V/P.14.59
PINGAULT Timothée, E.V.2
PIRES Ana, H.6.3
PLACZEK-POPKO Ewa, E/PI.54
PLANKEN Paul, S.2.1
PLIATSIKAS Nikolaos, V.11.2, Q/PT.36
PNG Rui-Qi (Rachael), C.4.4
POIZOT Philippe, B.10.3
POKAM Sylvia, E.VI.2
POKRANT Simone, F.XII.3
POLLAKOWSKI Beatrix, S/10-P.19
PONOMARENKO Sergey, C/P.13.13, L/P.1.22, V/P.14.64
PONROUCH Alexandre, B.4.5
PONSINET Virginie, R.6.4, Z.III.5
POPOV Maxim, W.8.2
POPOV Zakhar, N.3.2
POPOVIC Miroslav, W.8.1
POPOVYCH Dmytro, N/P.8.30
POSTOLNYI B.O., Q/PM.54, Q/PW.48
POTIN Valerie, T/PI.18
POUCHAIRET Jean-Laurent, A/P.11
PRELLIER Wilfrid, Q/PT.1
PREZIOSI Daniele, T.7.3
PREZIOSO Mirko, T.8.2
PRIMC Darinka, F.XIII.5
PROBST Anne-Catherine, Q.4.10
PROCHAZKA Michal, Q/PW.12
PROCTOR Christopher, I.I-42.5
PROSA Mario, C/P.13.6
PRUD'HOMME Nathalie, D/P.15.26
PRUNA Raquel, R.9.8, T/PI.44
PRZYBILLA Thomas, W.9.2
PU Xue, V/P.8.25
PUIGDOLLERS Joaquim, L/P.1.17, P/P.9.18
PUSHKAREV Vladimir, P.15.2
PUSPITOSARI Nastiti, E.XI.2
PYSCHIK Marcelina, S.13.4

Q

QI Tianjiao, Q.5.2
QI Yaping, N/P.15.4
QIAN Aniu, B.12.6
QIAN Mengdi, T.12.2
QIAN Si-Hao, K.III.5, K/FPII.17
QIAN Wen, A.5.3
QIAO Zhiqiang, A.2.4
QUAN Zhang, V/P.14.16
QUATTROPANI Alessandro, E/PI.17
QURASHI Ahsanulhaq, F/PII.11

R

R Vani, B/P.9.32
RACHID Ouertani, P/P.9.56
RAFOLS I BELLES Carles, F.XIV.3
RAFOLS-RIBE Joan, M.II.2, L/P..0
RAGHVENDRA Bohara, K.V.5
RAHIMI CHATRI Azadeh, C.11.3
RAISYS Steponas, C/P.5.9
RAJABPOUR Ali, U/P.3.5
RAJAK Pankaj, A.5.1, Z.I.2
RAKOVICH Aliaksandra, V.6.5
RAMASAMY Parthiban, N/P.8.12
RAMEZANI Mehdi, N/P.8.28
RAMIANDRISOA Liana, S.14.4
RAMIREZ Arturo, P/P.9.39
RAMIREZ Obed, D/P.8.36
RANA Lokesh, Q/PT.42
RAND Barry, C.4.1
RANELLA Anthi, K/PI.13
RANINGA Ravi, O/P.7.12
RATH Purna Chandra, G.MM.5
RAWAT Pankaj, H.3.2
RAZUMNAYA Anna, T/PII.19
RAZUMOVSKIY Vsevolod, W.3.4
REBOHLE Lars, P.7.6
REBOLLAR Esther, X.11.1, X/P_1.12
REEVES Kyle, F.VIII.3
REEVES Robert, A.11.3
REHAN Shanza, E/PI.45
REIS Joao, I.I-21.2
REMES Zdenek, N.1.4
REMHOF Arndt, B.14.7
RENEVIER Hubert, T.16.4
RESENDE Joao, N.7.5
RESENDE Pedro, M.VII.2
REVAUX Amelie, L.1.7
REZAEI-MAZINANI Shahab, I.I-5.1, J.8.2
REZEK Jiri, Q.4.7
RICCARDI Marco, X/P_1.65
RICE Beth, L.1.2
RICHARD Jackman, K.II.5
RICHARD Julien, B.4.3
RICHARD-PLOUET Mireille, R.1.8, T/PII.11
RIDGE Claron, A.5.2
RIEDL Thomas, N.16.1, N/P.15.54, P/P.9.1, V/P.14.62, V/P.14.72
RIGNANESE Gian-Marco, D.2.4
RINNERT Hervé, P.11.5
RIOULT Maxime, F.IV.5
RIVEIRO RODRIGUEZ Antonio, X/P_1.21
RIZZA Giancarlo, R.1.4
ROBBA Alice, B.3.2

INDEX

ROBERT Rosa, B.15.2
ROBERT Wendt, S/10-P.22
ROBIDILLO Christopher Jay, K.FI.17
RÖDLMEIER Tobias, L.1.5
RODRIGUEZ Isabelle, Z.III.3
RODRIGUEZ-MARTINEZ Xabier, C/P.13.5
RODRÍGUEZ-VIEJO Javier, U.1.1
ROESGAARD Søren, N.11.2
ROGE Vincent, X/P_1.47
ROGERS John, J.7.1
ROIK Nadiia, V/P.14.60
ROILO David, Q/PM.27
ROJAS Teresa Cristina, Q/PT.38
ROLLAND Julien, B.4.6
ROMANO Silvia, Z.IV.4
ROS FIGUERAS Carles, F.IX.3
ROSA Sabrina, V/P.14.39
ROSENMAN Gil, K.II.7, K/FPI.1
ROSENWAKS Yossi, P.7.2
ROSU Dana, S.17.2
ROUGIER Aline, Y.II.1
ROUSTER Paul, K.FII.5
ROY Dhananjoy, N/P.15.55
ROYO VALLS Miquel, U.2.2
RUBLOFF Gary, B.7.4
RUDKO Galyna, R/P2.21
RUDNO-RUDZINSKI Wojciech, N.14.5
RUGGI Albert, F/PII.18
RUITING Zheng, Q.5.3, P/P.9.9
RUIZ CARRETERO Amparo, L.1.3
RUIZ MORENO Ana, W/P3.0
RUIZ-CLAVIJO GARCIA-SERRANO Alejandra, H.5.5
RULL Marta, H/P.4.21
RULLYANI Cut, Y.III.2
RURALI Riccardo, N.10.6, P.8.6
RUSCELLO Marta, L/P.1.3
RUSEN Laurentiu, K.PI.15, K/PI.7, X/P_1.19
RUSU Madalin Ion, T/PI.34, T/PII.38
RYABCHIKOV Yury, P/P.9.42
RYAN Jason, J.1.4
RYDZEK Gaulthier, V/P.8.29
RYU Jongho, N/P.8.8
RYU Sung Hun, G/P.TAa.1
RYU Yu Kyoung, N.6.5

S

SA Pedro, T.14.5
SAAD Rahmane, Q/PM.1
SAAFI Imen, Q/PM.44, Q/PW.36
SADAKIYO Masaaki, B/P.17.55
SADIGHI Zoya, G.MAa.3
SADOWSKI Marcel, G.TM.2
SADYKOV Vladislav, V/P.8.33
SAEED Maryam, Q/PM.35
SAEED Yasir, H.2.5
SAHAY Pradosh, B/P.9.1
SAI Hitoshi, E.XI.1
SAJTI Dr. Laszlo, R/P2.25
SALIMA Bouadjela, T/PI.53
SALLEO Alberto, C.2.1, L.1.4
SALMANKURT Bahadir, V/P.8.66, V/P.8.67
SALONEN Jarno, K.V.16
SALTOUN Lilach, N.17.1
SAMESHIMA Toshiyuki, O/P.7.10, P/P.9.51
SAMI Syed Kamran, B/P.17.24
SAMIR Bentata, N.2.6
SAMORI Paolo, K.II.3
SAMUEL Foster, H.1.1
SANCHEZ Jaime, B.13.1
SANCHEZ MARTINEZ Miguel Angel, U/P.3.17
SANCHEZ-LOPEZ Juan Carlos, Q.4.11
SANCHEZ-SANCHEZ Ana, I.I-22.2
SANDANAYAKA Sangarange Don Atula, N.5.3
SANDBERG Mats, F.III.4
SANDU Georgiana, B/P.9.48, B/P.17.29, P/P.9.2, Y/PI.6
SANG HYEON Kim, N/P.15.27
SANGUINO Pedro, V/P.8.69
SANKEERTHANA Bellamkonda, F.X.3, F/PII.5
SANNIKOV Alexander, W.5.2
SANTAGATA Antonio, V.12.3, X.12.1
SANTANIELLO Tommaso, V.10.4, Y.III.4, Y.IV.3, V/P.14.33
SANTIAGO GONZALEZ Beatriz, V.10.7
SANTO Ana Maria Do Espirito , T/PII.45
SANTO Ana Maria Do Espirito, K/PIV.3
SANTOS Helder, K.V.3
SANTOS-PENA Jesus, B.19.1
SANTRA Sumita, V/P.8.74
SANVITO Stefano, M.III.5
SAPUTERA Wibawa Hendra, F.XIII.4
SARAC OZTUNA Eylul, V.2.4
SARAH Dine, A/P.3
SARAKINOS Kostas, Q.1.2
SARAU George, N.14.3, S.9.4
SARBU Corneliu, Q.5.7
SARIGUNEY Ahmet Burak, V/P.8.62
SARIKURT Sevil, U/P.3.12
SARKAR Arijit, O/P.7.6
SASAKI Takayoshi, T.10.1
SASSELLA Adele, L/P.1.2
SATAPATHI Soumitra, C/P.5.10, F/PII.8
SAUCEDO Edgardo, D.13.1, D/P.8.33, D/P.15.18
SAVALL Catherine, Q.8.2
SAVKINA Rada, Q/PM.11, T/PII.25
SAVORY Christopher, D.1.3, D.8.3
SAVVA Ioanna, K/FPII.6
SAWANGPHRUK Montree, B.8.5
SCALISE Emilio, P.3.3, D/P.8.28
SCARANGELLA Adriana, R.9.9
SCARISOREANU Nicu, X/P_1.59, X/P_1.60
SCHAEFER Jan, Q/PM.43
SCHAMING Itodys, F.XIV.4, E/PI.40
SCHAMM-CHARDON Sylvie, T.8.5
SCHEFFLER Leopold, N.10.5
SCHENNACH Robert, Y.II.5
SCHICK Christoph, A.4.1, S/5-P.2
SCHIEK Manuela, K.II.12, K/FPII.2
SCHLICHT Stefanie, B/P.17.8
SCHLIßKE Stefan, L/P..0
SCHLUR Laurent, V.4.3
SCHMAGER Raphael, E.IV.3
SCHMALTZ Thomas, L.1.3
SCHMEIßER Dieter , T.2.2
SCHMID Martina, E.XII.1
SCHMIDBAUER Martin, T.5.2
SCHMITZ Jurriaan, Q.3.1
SCHOENAERS Ben , S.2.2
SCHOENAUER SEBAG Mathilde, E.XIII.3
SCHOU Jørgen, X.9.2, D/P.15.19, X/P_1.68
SCHROEDER Bob, L.1.2
SCHROEDER Thomas, S.8.1, K.IV.9
SCHUH Philipp, O.3.2
SCHWARZ Reinhard, N/P.8.46, T.14.3
SCHWARZKOPF Jutta, T/PII.21
SCHWEBKE Silvan, R/P2.20
SCHWEICHER Guillaume, L.1.6, M.VI.4
SCHWINGENSCHLOGL Udo, P.3.2, H.10.8, N.3.6
SCIORTINO Flavien, V.7.6
SCIUTO Emanuele Luigi, P.17.3, Q.11.2
SCRAGG Jonathan, E/PII.22
SEEWALD Tobias, D.17.2
SEGALMAN Rachel, M.X.1
SEIDL Wolfgang, Q/PW.8
SEIJAS BELLIDO Juan Antonio, U/P.3.2
SEIM Christian, S/10-P.17
SEITANIDOU Maria, I/P-1.3
SEKKATI Mouaad, E/PII.23
SENDEN Tim, O.2.4
SENDOVA-VASSILEVA Marushka, C/P.13.12
SENOKOS Evgeny, B/P.17.40
SENSOY M.Gokhan, V/P.14.46
SEO Ambrose, T.10.2
SEO Giwan, T/PI.17, T/PI.26
SEO Jangwon, E/PI.6
SEPULVEDA MARQUEZ Alfonso, B/P.17.51
SERBAN Elena Cristina, G/P.TAa.29
SERNA Rosalia, R.8.3, V/P.14.71
SERPA Carlos, K.II.14, K.PII.11, E/PI.44
SERRANO RUBIO Aida, Q.11.8, S/10-P.11
SERRANO William, J.6.3
SETHI Riti, N/P.15.22
SEUNG-CHEOL Lee, G/P.TAa.12, M/IV-P.4
SEYF ALLAH Khelifi, N/P.8.1
SHAALAN Nagih, D.14.2
SHAH Saqlain A, K.V.10
SHAIJUMON Manikoth, B.19.3
SHAKYA Jyoti, F/PI.2
SHARMA Anshul, J.6.2
SHARMA Intu, N.16.4
SHARMA Lalit, G.MM.3
SHARMA Shweta, N/P.15.57
SHARMA Sonia, T/PI.9
SHCHERBACHEV Kirill, P/P.9.55
SHEKHAR Himanshu, C.3.2
SHELEG Gil, L/P.1.7
SHEN Nan, G/P.TAa.30
SHEN Tianyi, R.2.5
SHIEH Dar-Bin, K.VI.3
SHIH Yu-Chuan, N/P.8.39
SHILPA Shilpa, B/P.9.46
SHIM Sangdeok, C/P.13.2
SHIMIZU Kousaku, O.9.4
SHIN Bosung, X/P_1.51
SHIN Dong Ok, B/P.9.33
SHIN Donghyeok, B.5.1

in bold : invited speaker - /P : poster

SHIN Mingue, O.6.5
SHIN Won Suk, C/P.5.14
SHINOHARA Yoshikazu, H.7.1
SHIRAISHI Masashi, M.III.2, T.10.5
SHIRI Daryoush, U.4.6, P.17.2
SHIRINSKAYA Anna, I.I-8.1
SHIU Jau-Ye, K.VI.10
SHRIVASTAVA Navadeep, O/P.7.25, V/P.14.12
SHUAI Zhigang, C.10.4, M.IX.5
SHUBA Mikhail, R/P2.7
SHUKLA Vineeta, Q/PW.30
SHUO Chen, K.III.7
SHVETS Igor V., D.4.1
SHVETS Petr, T/PI.8
SI Wenping, F.VI.5
SIBARI Anass, G.TM.4
SICOLO Sabrina, B.16.2
SIDORENKO Sergey, E/PII.42, E/PII.44, Q/PM.20, Q/PM.37, Q/PT.26, Q/PW.19, Q/PW.20, X/P_1.41
SIDORENKO Serhiy, Q/PW.25
SIEBENTRITT Suzanne, D.2.1
SIEGEL Jan, K.I.21
SIEUW Louis, B/P.9.9
SIKORSKI Pawel, K.I.13
SILVA Ravi, S.1.1
SIMAO ALBANO Luiz Gustavo, L.1.3
SIMOEN Eddy, P.11.4
SIMON Clark, B/P.17.42
SIMON Daniel, I.I-1.1
SIMONOVA Anastasiia, O.6.4, O/P.7.5
SINGH Asheesh, G/P.TAa.19
SINGH Avneet, Q/PT.43
SINGH Chetan Raj, C/P.5.21
SINGH Dhruv, V/P.8.78
SINGH Dr Aadesh Pratap, F.VI.1
SINGH Megha, N/P.8.3
SINGH Simrjit, F/PII.30
SINGHA Achintya, N.6.2
SINGHAL Dhruv, H.6.4
SINOVA Jairo, M.III.1
SIONTAS Stylianos, R.10.2, R/P2.23
SIRRINGHAUS Henning, M.V.1
SITI RAHMAH Aid, N/P.15.38
SIVULA Kevin, F.IX.1
SIYI Chen, E/PII.24
SKARE Marte, B/P.9.44
SMIRNOV Vladimir, F.VI.4
SMITH Dylan, A.6.3
SMOWTON Peter, N.14.1
SOCOL Marcela, X/P_1.63, X/P_1.66
SODIQ Ahmed , G.WM.5
SOLA Daniel, X.11.3, X/P_1.46
SOLTANPOOR Wiria, D/P.8.39, E/PI.52
SON Hae Jung, C/P.5.12
SON In Hyuk, G.MAa.2
SON You-Hwan, B.15.5
SONG Chiho, B.12.5
SONG Weixin, B/P.9.13
SONG Younggul, L.1.5
SONIN Petro, S/5-P.25
SOO YEONG Hong, V/P.8.17
SOOYEON Cho, V/P.8.19
SOPEÑA Pol, X/P_1.10, Y/PI.3
SOPIHA Kostiantyn, V/P.14.45
SOPRONYI Mihai, X/P_1.30
SORIN Fabien, J.5.5
SORRENTINO Roberto, N.2.2
SOSNIN Dmitrii, Q/PM.48
SOTIRIOU Georgios, K.II.19, V/P.14.8
SOULTATI Anastasia, C/P.5.8
SOUSA Marcelo, V/P.14.56
SOVINSKA Svitlana, N.17.6, N/P.15.1
SOW Mohamed Chérif, R/P2.3, X/P_1.3
SOYLEMEZ Emrecan, Q/PW.2
SPANGENBERG Arnaud, X.12.2
SPIECKER Erdmann, W.7.1
SPIES Annika, C/P.13.9
SPINDLBERGER Lukas, P.14.2
SPIRIDON Stefan-Ionut, V/P.14.14
SQUILLACI Marco , L.1.5, R.9.10
SRIVASTAVA Ankita, N/P.15.58, N/P.15.62
STAMATE Eugen, T.16.2
STAMATIN Ioan, F/PII.27, I/P-11.3, I/P-14.3, I/P-15.3, Q/PM.19, Q/PT.41
STANESCU Dana, F/PII.21, T/PII.23
STANKOVA Nadya, N/P.8.34, N/P.15.45, X/P_1.38
STANLEY Mishael, E.III.5
STAROWICZ Zbigniew, E/PII.34
STEIN Nicolas, H.5.2
STELLA Marco, C/P.13.39
STERBY Mia, G/P.TAa.21
STEVANOVC Vladan, D.8.1
STEVELER Emilie, L/P.1.9
STEVENSON Keith, B.18.4
STEYER Philippe, W.6.5
STIEVENA Didier, R/P2.16
STOCK François, X.4.3, X.9.4
STOECKEL Marc-Antoine, V.12.4, M/IV-P.15
STOFFEL Mathieu, R.4.3
STOKKER-CHEREGI Flavian, X/P_1.75
STOLZ Sebastian, L/P.1.3
STRATAKIS Emmanuel, K.I.17
STREHLE Steffen, F.IV.3, P.8.2, D/P.15.23
STRELCHUK Viktor, N/P.15.44, T/PII.14, T/PII.16
STRIETZEL Christian, G/P.TAa.20
STROBEL Noah, L.1.4
STROCOV Vladimir, T.2.3
STRUZZI Claudia, V/P.14.35
STUCHLIK Jiri, P/P.9.41
STUCKELBERGER Josua, P.4.3
STUTZMANN Martin, P.6.1
SU Bao-Lian, V.13.1
SU Teng-Yu, E.VII.3
SU Zhicheng, N/P.15.9
SUBLEMONTIER Olivier, Q.10.9, S.8.5, X.7.1
SUBRAMANIAN Vivek, L.1.4
SUK Jungdon, G/P.TAa.11
SULEIMAN Samer, S/10-P.15
SULLIVAN Kyle T. , A.11.1
SUMBOJA Afriyanti, G.WMa.4
SUN Haiyan, B.5.2
SUN Hong, D/P.15.17
SUN Jin Won, N.5.2
SUN Licheng, F.V.1
SUN Qian, G/P.TAa.4
SURAJ Thyagarajan Sumaraj, Q/PT.21
SURDO Salvatore, X.1.5
SURESH Vignesh, R.1.9
SURNINA Maria, X.3.5
SUVOROV Dmitry, Q/PM.41, Q/PT.33
SUYOLCU Y. Eren, T.1.2
SUZUKI Hidetoshi, E/PI.11
SUZUKI Osamu, K.I.2
SUZUKI Yoshikazu, V.5.3
SYMEOU Elli, H.3.6, H/P.4.17
SZENDRO Marton, Q/PT.16
SZWEDOWSKI Veronika, S.4.7

T

TAESEUP Song, G/P.TAa.9
TAÏBI Kamel, F/PI.5
TAINOFF Dimitri, H.10.7
TAKEDA Yasuhiko, E.XII.6, E/PII.15
TAKENAKA Shigeori, K.VI.7
TALBI Abderazek, H.6.6, X.2.3, P/P.9.5, X/P_1.9
TALBOT Etienne, R.3.5
TALBOURDET Anaëlle, J.4.4
TAM Ho Won, D/P.15.11
TAN Meng Lu, A/P.5
TANAKA Masaru, K.I.4, K/PI.12
TANASARO Thanadporn, V/P.8.14
TANCRET Franck, K.I.11
TANG Junwang, F.X.1
TANG Kai, O.2.1
TARASOV Alexander, F/PII.14
TARONI JUNIOR Prospero, M.X.3
TAYLOR Alice C., K.FII.1
TAYLOR Ned, T/PII.28
TCHITCHEKOVA Deyana, B/P.17.4
TEGHIL Roberto, X/P_1.33
TEKOGLU Serpil, K.II.15
TELFORD Andrew, C.7.2, D.15.1
TEMST Kristiaan, T.13.3
TENNE Reshef, K.FI.14, K.V.1
TERAKAWA Mitsuhiro, K.I.16
TERLEMEZOGLU Makbule, E/PII.36
TERRASI Antonio, R.8.1
TESSAROLO Marta, I.I-17.2, J.8.3, Q/PT.15
TETZNER Kornelius, T.8.3
THAYUMANASUNDARAM Savitha, B/P.9.51
THEBAUD Simon, H.2.1
THERY Virginie, T.1.4
THIEBAUT Etienne, H.2.3
THIESEN Peter, C/P.13.28, S/5-P.23
THIESSEN Alyxandra, P.2.4
THOMAS Daniel, R.7.4
THOMERE Angelica, E/PII.5
THORAT Gaurav, B/P.9.63
THORAT Nanasaheb, K.V.4, K.FI.4, K/FPI.2
TIAN Ying, S.18.5
TILLEY Richad, P.2.1
TINDARA Verduci, M.VI.2
TING Yi-Hsin, N/P.15.18
TIRUNEH Sintayehu Nibret, V.2.5
TIWARI Barkha, O.4.2
TIWARI Devendra , E.VII.4
TJOUTIS Thomas, C/P.13.34
TLILI A., Q/PW.46
TOFFANIN Stefano, I.I-30.4, L.1.4
TOKMAK Nazli, B/P.17.60
TOKUMITSU Eisuke, Q/PM.4
TOPAL Yasemin, F/PII.1
TORDERA Daniel, V.10.6, Y.IV.2

INDEX

TORRES Antonio, F/PII.16
TORRES Leopoldo , V.9.10
TORRISI Giacomo, E.XII.5
TORSI Luisa, I.I-29.4
TORUNN Kjeldstad , P/P.9.47
TOURNEBIZE Aurélien, C/P.13.32
TRABELSI Khaled, F/PI.17
TRAN Khac Bien Cuong, Q.3.5
TRAVAGLINI Leana, K.FI.10, K/FPII.11
TREFILOV Alexandra Maria Isabel, V/P.14.13
TRINO Luciana Daniele, K.FI.7
TRIPATHY Nirmalya, K/FPII.9
TRITSARIS Georgios, N.13.2
TROFYMCHUK Iryna, V/P.14.66
TROSHIN Pavel, C.7.3, D.6.4
TRUKHANOV Vasiliy, L/P.1.26, L/P.1.28
TSCHURL Martin, V/P.14.5
TSE Meiyan, G/P.TAa.15
TSELIKOV Gleb, R/P2.29
TSENG Allen, T/PII.20
TSIGORNIS Giorgos, Z.V.5
TSOULKA Polyxeni, E/PI.27, E/PI.48
TSUBASA Nakamura, E.IX.7
TUAN HUNG Nguyen, H/P.4.10
TUAZ Aymeric, S.14.6
TUCCITTO Nunzio, K.II.8
TUCUREANU Vasilica, R/P2.15
TUDISCO Cristina, V/P.14.70
TUTUC Emanuel, P.8.1
TYAGI Kriti, H.3.9

U

UBNOSKE Stephen, Q/PT.17
UDOVYTSKA Ruslana, N/P.15.30
UEDA Kenta, E/PII.19
UKOBA Kingsley, E/PII.2
ULRICH Sven, Q.7.1
ULU Fulya, B/P.17.54
ULYASHIN Alexander, P/P.9.33
UNALAN Husnu, J.1.3, Y.II.4
UNMÜSSIG Tobias, V.3.4
UNTERUMSBERGER Rainer, S/10-P.16
UNTILA Dumitru, E/PI.25, N/P.15.46
URBAIN Félix, F.V.6
USAMI Noritaka, P.5.1
USSIA Martina, F/PI.10
USTA Hakan, L.1.2

V

V.K. Haripriya, C/P.13.38
VACCARO Pablo O., H.10.2
VAID Aviral, W.2.6
VAJJALA KESAVA Sameer, C/P.13.15
VALEEV Rishat, R/P2.12
VALENTA Jan, P.1.1, E/PII.52
VALENTINI Matteo, D/P.8.35
VALENTOVA Helena, S/5-P.16
VALERO Anthony, B/P.9.25
VALTR Miroslav, S/5-P.11
VAN BAEL Margriet, S.14.5
VAN DAM Bart, P.1.2
VAN DER KOLK Gerrit, Q.2.1
VAN DER SCHUEREN Benoit, V.12.2
VAN HARTEN Elleke, R.6.5
VAN LAETHEM Dries, B/P.17.17
VAN MENSFOORT Siebe, C/P.5.22
VANDEWAL Koen, C.12.1
VANHOUTTE Gijs, B.6.4
VANPOUCKE Danny, T.10.6, L/P..0, N/P.15.5
VARIOLA Fabio, K.FI.9
VARLAMOVA Olga, X.11.2
VARONIDES Argyrios, N/P.8.42
VARPULA Aapo, H.10.4
VASCONCELOS Joana, K.FI.8, Q.11.9, K/FPI.11
VASILYEV Oleg, Q/PT.19
VASIN Andriy, F/PI.28, Q/PM.31
VASQUEZ QUINTERO Andrés, K.PIII.7
VATS Nilesh, Q/PW.5
VAZ Diogo, T.12.1
VAZQUEZ GALVAN Javier, G.TMa.4, G.WMa.1
VDOVENKOVA Tetyana , K/PI.3
VEAL Tim, D.11.1
VEINOT Jonathan, P.10.1
VENKATAKRISHNARAO Dasari, R.8.8
VERA Liliana, H.9.5
VERMANG Bart, D.12.1
VERMEERSCH Bjorn, U.5.5
VERONESI Federico, Q.8.5
VERRELLI Roberta, B/P.9.26
VESELOVA Irina, Q/PT.46
VIDALI Veroniki, L/P..0
VIDYASAGAR Devthade, F.III.5
VIEIRA Manuela, O.1.2, N/P.8.11, O/P.7.11
VIERTEL Tina, X.11.4
VILA-FUNGUEIRIÑO José Manuel, T.1.1
VILALTA-CLEMENTE Arantxa, E.III.3
VILQUIN Bertrand, T.13.2, T.14.1, T/PI.45
VIRBULE Alise, L.1.11
VISAN Anita Ioana, X/P_1.42
VISHWAKARMA Manoj, D.3.2, D.12.2
VITELARU Catalin, Q/PM.32, Q/PM.38
VLAD Angela, X.9.6, T/PI.36
VOLK Kirsten, R.5.3
VOLOBUJEVA Olga, E/PII.39
VOROBETS Maria, K/FPI.12
VÖRÖS Janos, J.8.6
VOURLIAS George, H/P.4.9, Q/PM.36, Q/PT.24, Q/PW.39, V/P.8.31, V/P.8.34, V/P.8.35, V/P.14.2
VOVCHENKO Ludmila, R/P2.28
VRANA Nihal Engin, K/PI.2
VRANCEANU Maria Diana, Q.11.4, Q/PT.29
VYGRANENKO Yuriy, D/P.15.9

W

WÄCKERLIN Aneliia, E.III.2
WAGUE Baba, T.5.3, T/PII.31
WAHID Nur Sabrina, K/FPI.7
WAHNON Perla, D.8.4
WALDER Cordula, S/5-P.17
WALENTA Constantin, F.X.2
WALLACE Suzanne, D.10.2
WALLENTIN Jesper, S.4.6
WALSH Aron, D.1.1
WAN SALLEH Wan Norharyati, F/PI.14
WANG Baoshun, F.VI.2
WANG Chao, C/P.5.3, C/P.5.4
WANG Chunsheng, B.1.3
WANG Dong, Z/P.VI.5
WANG Ergang, C.1.2
WANG Hsiao-Chien, F/PII.2
WANG Huan, G/P.TAa.25
WANG I-Wen, Q/PM.29
WANG Jiande, B/P.17.2
WANG Jianpu, C.10.1, M.IX.1
WANG Junzhuan, P.8.5
WANG Li, N/P.8.23
WANG Liang, A/P.13
WANG Peng, K/PIII.1
WANG Qigang, K.III.3
WANG Shuo, D/P.8.32
WANG Shutao, K.III.10
WANG Teng, B/P.9.18
WANG Tianyi, D.9.2
WANG Yajie, E/PII.14
WANG Yang, B/P.17.5
WANG Ye, G.MMa.3
WANSLEBEN Malte, S/10-P.8
WEBSTER Thomas, K.I.1
WEGENER Martin, Z.III.1
WEI Liu, B.2.2
WEI Yi, O.3.4
WEI Zhengfei, D.12.3
WEICK Guillaume, Z.V.4
WEIDENKAFF Anke, H.8.3, T/PII.18
WEIHS Timothy, A.6.1
WEIMERSKIRCH Morris, X.5.2
WELLMANN Peter, O.1.1, O/P.7.21, O/P.7.22, F.XIV.6, F/PII.15
WEN HAO Lai, S/5-P.6
WEN Huang, T/PII.1
WEN Jennifer, B.2.4
WEN Yi, D/P.8.22
WENG Wei-Lun, S/5-P.8
WERWINSKI Miroslaw, G/P.TAa.16
WERZER Thomas, K.V.6
WESTSSON Emma, V/P.8.77
WIDSTROM Matthew, V.5.4
WIERSMA Diederik, Z.IV.1
WILLIAMS Max, P/P.9.4
WILLIAMSON Benjamin, O.4.4, O/P.7.20
WINKLER Nina, D.6.3
WIPPERMANN Stefan, E.VI.5
WITT Florian, S.17.6
WITTE Wolfram, E.III.1
WITTMANN Angela, M.III.3
WOLFF Paul, K.I.12
WON Jong Chan, R/P2.11
WONG CHI MAN Michel, V.12.1
WOOD Sebastian, S.7.2
WRIGHT Lewis, D/P.8.40
WU Biyao, H.1.4
WU Chao, B.12.2
WU Ching-Feng, V/P.14.25
WU Chung-Kai, E/PII.4
WU Jeong Weon, N.4.1
WU Jun, B/P.17.21
WU Si-Han, K.VI.9
WU Zhi, T/PII.7
WU Zhuona, R/P2.5, R/P2.9
WÜRFEL Uli, C.11.4

X

XIAODONG Zhuang, B.7.1
XIE Yuemin, D/P.8.11
XU Ming, V.6.3
XU Xiuwen, D.9.4

in bold : invited speaker - /P : poster

XU Yong, L.1.6
XU Zhemi, R.7.11
XUE Zhaoguo, P/P.9.6
XUEJIAO Gao, P.16.4
XUEWEN Wang, I.I-25.4

Y

YADDADEN Chafiaa, P/P.9.11
YAKUNIN Sergey, S.8.2
YAMAGUCHI Masafumi, D/P.8.23
YAMAMOTO Hideaki, K.VI.8
YAMAMOTO Yohei, L/P..0
YAMAUCHI Miho, C/P.13.21
YAN SYUN Huang, F/PII.19
YANG An-Ting, F.VII.3
YANG Jiayue, C.10.2, H.2.4, M.IX.3
YANG Jung Hoon, G/P.TAa.10
YANG Ki Dong, D/P.8.7
YANG Lei, B/P.17.7
YANG Mino, O/P.7.13
YANG Ruoxi, D.9.3
YANG Sha, M/IV-P.7
YANG Sheng, D/P.15.15
YANG Sheng-Hsiung, L/P..0, T/PI.1, T/PI.2
YANG Sungho, K/PI.9
YANG Tse-Ning, N/P.8.13
YANG Woochul, F/PI.36, F/PI.38
YANG Xueqing, B/P.9.47
YANG Yu-Ting, V/P.8.49
YANG Zhang, W/P2.0
YANG Zhenyu, N.12.5
YANGYANG Wang, N/P.15.3
YAREMA Maksym, V.13.3, N/P.15.35
YARRINGTON Cole, A.4.1
YASAROGLU Kubra, C/P.5.19
YASHCHUK Valeriy, C/P.13.27
YASTRUBCHAK Oksana, Q/PW.44
YATES Peter, D.8.2
YAU Hin Chun, I.I-37.5
YAWEN Su, H/P.4.3, Y/PI.7, B/P.9.7
YAWEN Zhan, B/P.9.6
YE Seong Ji, V/P.14.26
YEH Yu-Lun, V/P.14.18
YESHCHENKO Oleg, R/P1.1, R/P2.27
YILMAZ ALIC Tugbahan, L/P.1.13
YILMAZ Mucahit, E/PII.32
YIM Soonmin, Z/P.VI.2
YOKOGAWA Toshiya, O.8.2
YOKOI Hideki, P/P.9.45
YOO Hyejin, Q/PT.37
YOO Jongtae, B/P.9.8
YOO Junghyeon, N/P.8.41
YOON Hyeon Ji, K/FPII.14, V/P.14.43
YOON Myung-Han, I.I-16.2
YOON Tae-Ho, V/P.14.15
YOSHIDA Eri, K.PV.9
YOSHIDA Masashi, W.8.4
YOU Zhengwei, K.III.11
YOUSFI Said, E.IX.4, E/PII.41
YOUSSEF Loraine, F.XII.4
YU Hak Ki, Q/PM.45
YU Hsiao-Hua (Bruce), K.III.15
YU Jiashing, K.III.14
YU Linwei, P/P.9.10
YU Yi, S.9.6
YUE Sheng Ying, C.8.3, U.1.2
YUMING Wang, C/P.13.40
YUN JHEN Liao, N/P.8.10
YUNJUN Ruan, B/P.9.4
YURIYCHUK Ivan, N/P.15.31, X/P_1.6
YUXIN Xia, C/P.13.33
YUYA Ogata, Y/PI.5
YUYING Chang, T/PI.37
YVON RODRIGUE Dougassa, B/P.9.57

Z

ZABA Adam, O.9.1, N/P.15.24
ZACHARIAH Michael, A.5.1
ZACHARIAS Viskadourakis, H.11.1
ZAFFOU Rachid, G.WM.2
ZAGOSKIN Alexander, Z.II.1
ZAHOUANI Sarah, Q.11.7
ZAITER Rayan, V/P.8.47
ZAJICKOVA Lenka, K.FI.13, K/FPII.15, S/5-P.14
ZAMESHIN Andrey, S.9.7
ZAMULKO Sergiy, D.7.2
ZATSEPIN Anatoly, O/P.7.18
ZAUMSEIL Jana, L.1.6
ZAYYOUN Najoua , P/P.9.23
ZECH Claudia, S.13.2
ZEGAOUI Omar, F/PI.8
ZELENTSOV Kirill, E/PII.21
ZEMAN Petr, Q.8.7
ZEN Federico, K.FI.16, Q.10.2K.FI.16, Q.10.2K.FI.16, Q.10.2K.FI.16, Q.10.2
ZENG Shanshan, V/P.8.4
ZENOBI Renato, S.6.1
ZHANG Ce, G.MA.3
ZHANG Liping, F/PII.35
ZHANG Wen-Yan, C/P.13.11
ZHANG Xian, H.11.4
ZHANG Yan, K.PIII.5
ZHANG Yaopeng, K.III.2
ZHANG Yaqiong, K.III.17
ZHANG Ye, B.8.6
ZHANG Yu, B.12.3
ZHAO Lili, B/P.17.13
ZHAO Ran, A.5.2
ZHAO Xiaoming, M/IV-P.6
ZHENG Yao-Wen, E/PII.9
ZHENG Yueming, B.5.4
ZHIGILEI Leonid, X.6.1, V.1.3X.6.1, V.1.3
ZHIGUNOV Denis, X.1.4
ZHIHE Liu, B.6.5
ZHIPING Zeng, V/P.8.10
ZHOU Yanguang, H.1.2, P/P.9.8
ZHU Minshen, B.8.2
ZHU Qi, B/P.9.11
ZHU Ying, A/P.6
ZHUANG Ao, K.III.8
ZHUO Ying, G/P.TAa.22
ZHUOCHENG Xie, W.2.3
ZIANNI Xanthippi, U.1.6, H.2.2U.1.6, H.2.2
ZIASHAHABI Azin, R/P2.2
ZIEGLER Julia, B/P.17.31
ZIELONY Eunika, E/PI.53
ZIER Tobias, X.2.7
ZIMBONE Massimo, F/PI.30
ZIMMER Klaus, X.10.1, X.5.3, X/P_1.62
ZIMMERMANN Christian, F/PII.20
ZITO Gianluigi, Z.IV.5
ZOLADEK-LEMANCZYK Alina, S.6.2
ZONNO Irene, C.12.2
ZUBAREV Alexei, L/P.1.6
ZUKALOVA Marketa, B/P.9.12
ZUO Guangzheng, M/IV-P.9

in bold : invited speaker - /P : poster