

SANTA FE, NEW MEXICO

4-7 APRIL 2016

HPLA/DE

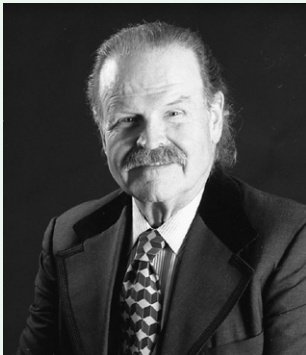
INTERNATIONAL HIGH POWER LASER ABLATION AND DIRECTED ENERGY

TECHNICAL PROGRAM

4 - 7 April 2016

La Fonda on the Plaza
Santa Fe, New Mexico, USA

www.usasymposium.com/hpla



Conference Chair

Dr. Claude R. Phipps
Managing Partner
Photonic Associates, LLC
Santa Fe, NM (USA)

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Prof. Akihiro Sasoh, Nagoya University (Japan)

Dr. John Sinko, Saint Cloud State University (USA)

Prof. Klaus Sokolowski-Tinten, University of Duisburg-Essen (Germany)

Prof. Rongqing Tan, Chinese Academy of Sciences (China)

Prof. Zhiping Tang, University of Science and Technology (China)

Dr. Tony Valenzuela, Army Research Laboratory (USA)

Prof. Takashi Yabe, Tokyo Institute of Technology (Japan)

Prof. Leonid Zhigilei, University of Virginia (USA)

Dr. Fred Zutavern, Sandia National Laboratory (USA)

Agenda | At-a-Glance

Sun, 3 April 2016

1140 --> | **New Mexico History Museum Tour**

1500 – 1800
Early Check-In & Badging

Mon, 4 April 2016

0700 – 0800 | Light Continental Breakfast

0700 – 1700 | Registration Open
1200 – 1630 | Poster & Exhibit Set-up

0800 – 0815 | Welcome & Administrative Announcements

0825 – 0900 | **Keynote: Prof. Aaron Lindenberg, Stanford University**

0900 – 1020
Track One: **Fundamental Physics**

Track Two: **Microwave and Laser Power Beaming**

1020 -1050 | Break

1050 – 1210
Track One & Two: **Continued**

1210 – 1330 | Lunch Break

1330 – 1515
Track One: **Continued**
Track Two: **Advanced BEP Propulsion Concepts**

Mon, 4 April 2016, cont.

1515 – 1545 | Break

1545 – 1700/1705

Track One & Two: **Continued**

1700 – 1830 | **Welcome Reception & Poster and Exhibit Technical Interchange**

Tue, 5 April 2016

0700 – 0800 | Light Continental Breakfast

0700 – 1700 | Registration Open

0700 – 0800 | Exhibits & Posters
1055 – 1125 Open

1540 – 1635

0800 – 0805 | Administrative Announcements

0805 – 0845 | **Keynote: Prof. Gérard Mourou, IZEST, École Polytechnique**

0845 – 1055
Track One: **Ultrashort Pulse Lasers and Effects**

0845 - 0955
Track Two: **Fundamentals of Laser Ablation and Nanoparticle Formation in Liquids**

0955 - 1055
Track Two: **Research Facilities and Measurement Techniques**

Tue, 5 April 2016, cont.

1055 – 1125 | Break

1125 – 1300

Track One: **Ultrafast Materials Processing**

Track Two: **Space Debris Removal and Beyond**

1300 – 1430 | Lunch Break

1430 – 1540

Track One: **Continued**
Track Two: **Laser Ablation Propulsion: Macro and Micro**

1540 – 1635 | Break & Poster and Exhibit Technical Interchange

1635 – 1730/1720
Track One: **Advances in Microstructured Optical Fibers and Fiber Lasers**

Track Two: **Continued**

Wed, 6 April 2016

0700 – 0800 | Light Continental Breakfast

0700 – 1600 | Registration Open

0700 – 0800 | Exhibits & Posters
1030 - 1100 Open

1450 – 1545
0800 – 0805 | Administrative Announcements

Wed, 6 April 2016, cont.

0805 – 0845 | **Keynote: Dr. Fabio Di Teodoro, Raytheon Space and Airborne Systems**

0845 – 1030

Track One: **Theory and Simulation**

Track Two: **Nanoengineering and Materials Processing**

1030 – 1100 | Break

1100 – 1210

Track One & Two: **Continued**

1210 – 1330 | Lunch Break

1330 – 1450

Track One: **Promising New Laser and Optical Technologies**

Track Two: **MAPLE and Materials Processing**

1450– 1545 | Break & Poster and Exhibit Technical Interchange

1545 – 1700

Track One & Two: **Continued**

1700 – 1800 | **Poster & Table-Top Tear-Down**

1810 | Busing to The Governor's Mansion

1830 - 2130 | **Dinner & Awards Program**

Thu, 7 April 2016

0700 – 0800 | Light Continental Breakfast

0700 – 1600 | Registration Open

0800 – 0805 | Administrative Announcements

0805 – 0845 | **Keynote: Dr. Boris Zhdanov, U.S. Air Force Academy**

0845 – 1030

Track One: **New Results in High Power Lasers and Their Applications**

Track Two: **Laser Direct Writing**

Track Three: **Directed Energy Workshop**

1030 – 1100 | Break

1100 – 1220

Track One, Two & Three: **Continued**

1220 – 1400 | Lunch Break

1400 – 1430 | **Keynote: Mr. Mark Neice, Directed Energy Professional Society**

1430 – 1550/1700/1525

Track One: **Biological Applications**

Track Two: **Low-Cost Space Launch Systems Workshop**
Track Three: **Continued**

1730 --> | **Architectural & Ghost Walking Tour followed by Dinner on the Town**

Location Key:

Registration is located in the Mezzanine

Technical Sessions are located in Lumpkins Ballroom & the New Mexico Room

Table-Top Exhibits & Poster Session is located in the New Mexico Room

Wednesday's Dinner will be held at The Governor's Mansion

Lunch & Dinner Suggestions

Geronimo

724 Canyon Rd., 505-982-1500
Website: <http://chrismharvey.wix.com/geronimo>

The Compound Restaurant

653 Canyon Rd., 505-982-4353
Website: www.compoundrestaurant.com/

Galisteo Bistro

227 Galisteo Street, 505-982-3700
Website: <http://galisteobistro.com>

Jinja Asian Café

North DeVargas Mall Across from Albertson's 510 N. Guadalupe St., 505-982-4321
Website: <http://jinjabistro.com/index.html>

Old House Restaurant

309 West San Francisco St., 505-995-4530
Website: http://www.eldoradohotel.com/old_house_restaurant/

Cleopatra Café

418 Cerrillos Road, 505-820-7381
<http://www.cleopatrasantafe.com>

Bumble Bee's Baja Grill

301 Jefferson, 505-820-2862
Website: <http://www.bumblebeesbajagrill.com/>

The Pantry Restaurant

1820 Cerrillos Rd., 505-986-0022
Website: <http://www.pantryasantafe.com/>

Marisco's Costa Azul

2875 Cerrillos Rd., 505-473-4594
Website: <http://www.mariscoscostaazul.com/>

Cowgirl BBQ

319 S Guadalupe, 505-982-2565
Website: <http://www.cowgirlsantafe.com/menus>

El Farol

808 Canyon Road, 505-983-9912
Website: <http://www.elfarolsf.com>

The Teahouse

821 Canyon Road, 505-992-0972,
Website: <http://teahousesantafe.com>

Detailed Agenda

SUN

SUN

Sunday, 3 April 2016			
1140	New Mexico History Museum Tour (Meet in La Fonda on the Plaza Lobby)		
1500 - 1800	Early Registration		
Monday, 4 April 2016			
0700 - 0800	Light Continental Breakfast (Mezzanine)		
0700 - 1700	Registration Open (Mezzanine)		
1200 - 1630	Poster & Table-Top Exhibit Set-Up (New Mexico Room)		
1700 - 1830	Posters & Exhibits Open		
	Welcome Reception & Poster and Exhibit Technical Interchange (New Mexico Room)		
	Welcome & Keynote <i>Lumpkins Ballroom North</i>		
0800 - 0815	Welcome & Administrative Announcements Conference Chair, Dr. Claude Phipps, Photonic Associates, LLC		
0815 - 0820	Keynote Introduction Dr. Leonid Zhigilei, University of Virginia		
0820 - 0900	Keynote: Femtosecond X-Ray and Electron Studies of Materials as They Transform Prof. Aaron Lindenberg, Stanford University, SLAC National Accelerator Laboratory <i>[Invited]</i>		
	Track One <i>Lumpkins Ballroom North</i>		Track Two <i>Lumpkins Ballroom South</i>
	Fundamental Physics		Microwave and Laser Power Beaming
0900 - 0905	Announcements & Session Introduction Session Co-Chair: Dr. Leonid Zhigilei, University of Virginia	0900 - 0905	Announcements & Session Introduction Session Chair: Dr. Kevin Parkin, Parkin Research, LLC
0905 - 0930	Ultrafast Laser Produced Non-Equilibrium Warm Dense Gold Dr. Ying Tsui, University of Alberta <i>[Invited]</i>	0905 - 0930	Power Beaming Applications in the Real World Dr. Jordin Kare, LaserMotive, Inc. <i>[Invited]</i>
0930 - 0955	From Ripples to Spikes: A Hydro-Dynamical Mechanism to Interpret Femtosecond Laser Induced Self-Assembled Structures Dr. George Tsididis, Inst. of Electronic Structure and Laser - FORTH <i>[Invited]</i>	0930 - 0955	The Simple Comparative Propellant Performance Model (SCPPM) Version 1.2 Dr. Kevin Parkin, Parkin Research, LLC <i>[Invited]</i>
0955 - 1020	Cold Ablation Regimes under Ultrafast Laser Irradiation of Dielectric Materials Prof. Nadezhda Bulgakova, HiLASE Centre, Institute of Physics AS CR <i>[Invited]</i>	0955 - 1020	High-Specific Impulse Characteristics of a Short-Pulse Laser-Assisted Pulsed Plasma Thruster Prof. Hideyuki Horisawa, Tokai University <i>[Invited]</i>
1020 - 1050	Break (Mezzanine)		
	Introductions Session Co-Chair: Dr. Nadezhda Bulgakova, HiLASE Centre of the Institute of Physics AS CR	1050 - 1115	Thrust Performance Improvement of Microwave Rocket by Magnetic Field Dr. Masayuki Takahashi, Tohoku University <i>[Invited]</i>
1050 - 1115	Ultrafast and Steady-State Laser Heating Effects on Hot Electron-Phonon Relaxation and Damage of Thin Metal Films Prof. Patrick Hopkins, University of Virginia <i>[Invited]</i>		
1115 - 1140	Laser Ignited Boron Fusion with Nonlinear Force Driven Ultrahigh Accelerated Plasma Blocks Dr. George Miley, University of Illinois <i>[Invited]</i>	1115 - 1130	Vaporization of Frozen Matter on Icy Moons using an Orbiting Laser Mr. Martin Kossagk, Institute for Aerospace Engineering, TU Dresden
1140 - 1155	Peta-Exawatt Laser Pulses for Environmentally Clean and Economic Solving the Energy Problem by Boron Dr. George Miley, University of Illinois	1130 - 1145	Mass Ratio Capabilities of Earth-Launch Microwave Propulsion Dr. Donald Johansen, EMF Kinetics
1155 - 1210	Electron-Lattice Equilibration in Laser-Excited Thin Bismuth Films Studied by Ultrafast MeV Electron Diffraction Dr. Klaus Sokolowski-Tinten, University of Duisburg-Essen		
1210/1145 - 1330	Lunch Break - On Your Own		
	Track One <i>Lumpkins Ballroom North</i>		Track Two <i>Lumpkins Ballroom South</i>
	Fundamental Physics, cont.		Advanced BEP Propulsion Concepts
1330 - 1335	Introductions Session Co-Chair: Prof. Patrick Hopkins, University of Virginia	1330 - 1335	Announcements & Session Introduction Session Chair: Prof. Naofumi Ohnishi, Tohoku University
1335 - 1400	Ionic Temperature Effect on Phonons Properties of Two Temperature Metals Dr. Vanina Recoules, CEA/DAM-DIF <i>[Invited]</i>	1335 - 1400	High-Power Lasers versus Low-Power LEDs for Space Propulsion Applications Prof. Hideyuki Horisawa, Tokai University <i>[Invited]</i>
1400 - 1425	Pressure, Ionization and Effective Ion-Ion Interaction in Electronically Excited Warm Dense Metals Dr. Vladimir Stegailov, Joint Institute for High Temperatures of Russian Academy of Sciences <i>[Invited]</i>	1400 - 1425	Prospects for Directed Energy Planetary Defense and Interstellar Probes Prof. Philip Lubin, University of California, Santa Barbara <i>[Invited]</i>

MONDAY

MONDAY

Detailed Agenda (cont.)

MONDAY	1425 - 1450	Probing and Modeling Temporal and Spatial Properties of Ultrashort Laser Excitation and Ablation in Dielectrics Mr. Thomas Winkler, University of Kassel - Institute for Physics and CINSaT <i>[Invited]</i>	1425 - 1450	Demonstration of a mN-Class Photonic Laser Thruster Dr. Young Bae, Y.K. Bae Corporation <i>[Invited]</i>	MONDAY
	1450 - 1515	Shock Compression of Tantalum to Strain Rates of 10^9 s^{-1} Dr. Jonathan Crowhurst, Lawrence Livermore National Laboratory <i>[Invited]</i>	1450 - 1515	Laser Propulsion Demonstration Mr. Edward Montgomery IV, MontTech, LLC <i>[Invited]</i>	
	1515 - 1545	Break (Mezzanine)			
		Track One <i>Lumpkins Ballroom North</i> Fundamental Physics, cont.		Track Two <i>Lumpkins Ballroom South</i> Advanced BEP Propulsion Concepts, cont.	
		Introductions Session Co-Chair: Dr. George Tsididis, Inst. of Electronic Structure and Laser - FORTH		Introductions Session Chair: Prof. Naofumi Ohnishi, Tohoku University	
	1545 - 1600	Energy Relaxation of Non-Equilibrium Electrons in Laser-Excited Solids Prof. Baerbel Rethfeld, Technical University Kaiserslautern	1545 - 1600	Structure Formation of Atmospheric Discharge by Undercritical Microwave Beam Dr. Naofumi Ohnishi, Tohoku University	
	1600 - 1615	Laser-Induced Photoionization: Atoms vs Solids Dr. Vitaly Gruzdev, University of Missouri	1600 - 1615	Laser Intensity and LSD Wave Propagation Velocity in a Large Diameter Beam Mr. Kohei Matsui, The University of Tokyo	
	1615 - 1630	Ultrafast Laser Induced Transition in Fused Silica from Solid to Plasma State Dr. Guillaume Duchateau, CELIA	1615 - 1640	Use of Microwave Rocket for the First Stage of a Launch Vehicle Dr. Masafumi Fukunari, The University of Tokyo <i>[Invited]</i>	
	1630 - 1645	Physics of Femtosecond Laser Ablation at an Oblique Angle of Incidence Dr. Pavel Polynkin, University of Arizona			
	1645 - 1700	Laser Space Debris Cleaning: Elimination of Detrimental Self-Focusing Effects Dr. Alexander Rubenchik, Lawrence Livermore National Laboratory	1640 - 1705	Laser Acceleration of Biological Objects in Liquids by Self-Conjugated Resonator Dr. Serine Kazaryan, Global Medical System Clinics and Hospitals <i>[Invited]</i>	
1700 - 1830	Welcome Reception & Poster and Exhibit Technical Interchange (New Mexico Room)				
Tuesday, 5 April 2016					
TUESDAY	0700 - 0800	Light Continental Breakfast (New Mexico Room)			TUESDAY
	0700 - 0800	Exhibits & Posters Open (New Mexico Room)			
	1055 - 1125				
	1540 - 1635				
	0700 - 1700	Registration Open (Mezzanine)			
		Welcome & Keynote			
	0800 - 0805	Administrative Announcements & Keynote Introduction Dr. Thierry Sarnet, LP3 CNRS Aix Marseille University			
	0805 - 0845	Keynote: History of Ultra Intense Lasers Prof. Gérard Mourou, IZEST, École Polytechnique <i>[Invited]</i>			
		Track One <i>Lumpkins Ballroom North</i> Ultrashort Pulse Lasers and Effects		Track Two <i>Lumpkins Ballroom South</i> Fundamentals of Laser Ablation and Nanoparticle Formation in Liquids	
	0845 - 0850	Announcements & Session Introduction Session Chair: Dr. Klaus Sokolowski-Tinten, University of Duisburg-Essen	0845 - 0850	Announcements & Session Introduction Session Chair: Dr. Bilal Goekce, University of Duisburg-Essen	
0850 - 0915	Advances in High Repetition Rate Ultrafast Lasers - Novel Avenues in Science and Industry Dr. Stefan Demmler, Friedrich Schiller University Jena <i>[Invited]</i>	0850 - 0915	High Power Ultrafast Laser Ablation in Liquids: Fundamentals and Applications Dr. Bilal Goekce, University of Duisburg-Essen <i>[Invited]</i>		
0915 - 0940	Ultrashort-Pulse Laser Excitation of Dielectric Materials – Experiments and their Interpretation by Modeling Dr. Peter Balling, Aarhus University <i>[Invited]</i>	0915 - 0940	Cavitation Bubble Dynamics and Nanoparticle Size Distributions in Laser Ablation in Liquids Prof. Danny Bubb, Rutgers University - Camden <i>[Invited]</i>		

Detailed Agenda (cont.)

0940 - 1005	In Situ X-Ray Diffraction of Laser Shock-Driven Deformation and Phase Transition in Titanium Dr. Cindy Bolme, Los Alamos National Laboratory <i>[Invited]</i>	0940 - 0955	Laser Ablation in Liquids of Germanium in Externally Applied Electric Fields Mr. Yilu Li, University of Missouri-Kansas City
			Research Facilities and Measurement Techniques
1005 - 1030	Ultrafast Laser-Induced Confined Microexplosion: Experimental Evidence of New Tetragonal Polymorphs of Silicon Dr. Ludovic Rapp, FEMTO-ST Institute <i>[Invited]</i>	0955 - 1000	Announcements & Session Introduction Session Chair: Dr. Hans-Albert Eckel, German Aerospace Center (DLR), Institute of Technical Physics
		1000 - 1025	Measuring High Power Laser Output using Radiation Pressure: A New Paradigm Dr. Brian Simonds, National Institute of Standards and Technology <i>[Invited]</i>
1030 - 1055	Pulse Length Dependence on Filament Guided Discharge in Air: Extension to 10 ps Dr. Andreas Schmitt-Sody, Air Force Research Laboratory <i>[Invited]</i>	1025 - 1040	Laser Plasma Generators Supply Systems Based on Special Media Properties Dr. Egor Loktionov, Bauman Moscow State Technical University
		1040 - 1055	Microwave Probing of Laser Induced Plasmas and Shock Waves Dr. Benjamin Rock, Naval Research Laboratory
1055 - 1125	Break (New Mexico Room)		
	Track One <i>Lumpkins Ballroom North</i>		Track Two <i>Lumpkins Ballroom South</i>
	Ultrafast Materials Processing		Space Debris Removal and Beyond
1125 - 1130	Announcements & Session Introduction Session Chair: Prof. Richard Haglund, Vanderbilt University	1125 - 1130	Announcements & Session Introduction Session Chair: Prof. Willy Bohn, Bohn LaserConsult
1130 - 1155	Kinetics of fs-Laser Induced Thermal Transients in the Volume of Technical Glasses Dr. Alexandre Mermillod-Blondin, Max Born Institute <i>[Invited]</i>	1130 - 1155	Space Environment Research Centre - A New Initiative for Australian Space Tracking Mr. Steven Gehly, Royal Melbourne Institute of Technology <i>[Invited]</i>
1155 - 1220	Fundamental Studies of Ultrafast Laser Interaction with Dielectrics for Efficient Micromachining Dr. Marc Sentis, CNRS - AMU <i>[Invited]</i>	1155 - 1220	Challenges Facing Long Distance Propagation of High Power Laser Beams Prof. Martin Richardson, University of Central Florida <i>[Invited]</i>
1220 - 1245	Spot Size and Pulse Number Dependence of Femtosecond Laser Modification and Ablation Threshold Prof. Dr. Wolfgang Kautek, University of Vienna <i>[Invited]</i>	1220 - 1245	Orbital Debris 101 for Laser Ablation Experts Mr. Joseph Carroll, Tether Applications, Inc. <i>[Invited]</i>
1245 - 1300	Control of Stress and High Aspect Ratio Voids in Sapphire and Glass using Femtosecond Bessel Beams Dr. Francois Courvoisier, CNRS- FEMTO-ST Institute	1245 - 1300	Laser-Based Removal of Irregularly Shaped Space Debris Dr. Stefan Scharring, German Aerospace Center (DLR), Institute of Technical Physics
1300 - 1430	Lunch Break - On Your Own		
	Track One <i>Lumpkins Ballroom North</i>		Track Two <i>Lumpkins Ballroom South</i>
	Ultrafast Materials Processing, cont.		Laser Ablation Propulsion: Macro and Micro
1430 - 1435	Introductions Session Chair: Prof. Richard Haglund, Vanderbilt University	1430 - 1435	Announcements & Session Introduction Session Chair: Dr. Raoul-Amadies Lorbeer, German Aerospace Center (DLR), Institute of Technical Physics
1435 - 1500	Ultrafast Laser Written 3D Integrated Photonics Components and Devices Dr. Alexander Fuerbach, Macquarie University <i>[Invited]</i>	1435 - 1500	Binary Asteroid Manipulation with Laser Ablation Prof. Massimiliano Vasile, University of Strathclyde <i>[Invited]</i>
1500 - 1525	From Modeling-Based Understanding of Ultra-Short Laser Interaction with Glasses to Better Control Over Laser Nano- and Micro-Machining in Volume Dr. Tatiana Itina, Hubert Curien Lab. CNRS/UJM/Lyon University <i>[Invited]</i>	1500 - 1525	Experimental Study on Propulsion Performance of Laser Ablated Gel Propellant Mr. Nanlei Li, Equipment Academy <i>[Invited]</i>
1525 - 1540	Below and Above Surface Growth Mechanisms of Multiscale Structures by Femtosecond Laser Surface Processing on Ni₆₀Nb₄₀ Mr. Edwin Peng, University of Nebraska-Lincoln	1525 - 1540	Thrust Noise Minimization in Long-Term Laser Ablation of Propellant Material in the Nanosecond and Picosecond Regime Dr. Raoul-Amadies Lorbeer, German Aerospace Center (DLR), Institute of Technical Physics
1540 - 1635	Break & Poster and Exhibit Technical Interchange (New Mexico Room)		

TUESDAY

TUESDAY

Detailed Agenda (cont.)

TUESDAY		Advances in Microstructured Optical Fibers and Fiber Lasers	1635 - 1650	Laser Ablation Impulse for Tumbling Control of Space Objects Dr. Bin Wang, Nagoya University	TUESDAY	
	1635 - 1640	Announcements & Session Introduction Session Chair: Prof. Liang Dong, Clemson University				
	1640 - 1705	Light Filamentation and Free Space Metamaterials Dr. Wiktor Walasik, University at Buffalo, The State University of New York <i>[Invited]</i>	1650 - 1705	High Average Power CO Laser Status in the Context of the Ground to Orbit Laser Ablation Propulsion Development Mr. Iouri Pigulevski, DLTECH Institute		
	1705 - 1730	Metamaterials for Advanced High Power Microwaves: From Sources to Beaming Prof. Edl Schamiloglu, University of New Mexico <i>[Invited]</i>	1705 - 1720	Characterization of the Dynamics of Plasma Produced by Projectile Impact and Laser Impact using Time Resolved Emission Spectroscopy Mr. Dominic Heunoske, Fraunhofer EMI		
Wednesday, 6 April 2016						
	0700 - 0800	Light Continental Breakfast (New Mexico Room)				
	0700 - 0800 1030 - 1100 1450 - 1545	Exhibits & Posters Open (New Mexico Room)				
	0700 - 1600	Registration Open (Mezzanine)				
	1700 - 1800	Poster & Table-Top Tear-Down				
		Welcome & Keynote <i>Lumpkins Ballroom North</i>				
	0800 - 0805	Administrative Announcements & Keynote Introduction Dr. Baerbel Rethfeld, University of Kaiserslautern				
	0805 - 0845	Keynote: Fiber Laser Review Dr. Fabio Di Teodoro, Raytheon Space and Airborne Systems <i>[Invited]</i>				
WEDNESDAY		Track One <i>Lumpkins Ballroom North</i> Theory and Simulation		Track Two <i>Lumpkins Ballroom South</i> Nanoengineering and Materials Processing	WEDNESDAY	
	0845 - 0850	Announcements & Session Introduction Session Co-Chair: Dr. Baerbel Rethfeld, University of Kaiserslautern	0845 - 0850	Announcements & Session Introduction Session Chair: Prof. Dr. Wolfgang Kautek, University of Vienna		
	0850 - 0915	Self-Consistent Modeling of Photoionization and Nonlinear Optics in Dielectrics Dr. Jeremy Gulley, Kennesaw State University <i>[Invited]</i>	0850 - 0915	Laser Induced Periodic Surface Structures of Thin, Complex Multi-Component Films Prof. Dr. Juergen Reif, BTU Cottbus-Senftenberg <i>[Invited]</i>		
	0915 - 0940	First-Principle Modeling of Overcritical Plasma Formation by Ultrashort Pulses: Towards High-Intensity Nanoplasmonics Dr. Anton Husakou, Max Born Institute <i>[Invited]</i>	0915 - 0940	Surface Structuring in the Regime of High-Density Electronic Excitation Dr. Andrei Kanaev, LSPM CNRS <i>[Invited]</i>		
	0940 - 1005	Non-Equilibrium Processes within X-Ray FEL Generated Plasmas Prof. Dr. Beata Ziaja-Motyka, CFEL, DESY <i>[Invited]</i>	0940 - 1005	Single Temporally Tailored Femtosecond Laser Pulses for Controlled High Aspect Ratio Nanomachining of Dielectrics Mr. Thomas Winkler, University of Kassel - Institute for Physics and CINSaT <i>[Invited]</i>		
	1005 - 1030	The Effect of Crystallographic Orientation on Laser-Induced Generation of Crystal Defects in Metals Mr. Maxim Shugaev, University of Virginia <i>[Invited]</i>	1005 - 1030	Study on Plasma Immersion Ion Implantation and Laser Annealing for Sulphur Hyperdoped Black Silicon Dr. Maria Isabel Sanchez, CNRS - Aix Marseille University <i>[Invited]</i>		
	1030 - 1100	Break (New Mexico Room)				
		Introductions Session Co-Chair: Dr. Tatiana Itina, Hubert Curien Lab. CNRS/UJM/Lyon University	1100 - 1125	Laser Direct Write at the Solid/Liquid Interface: Bridging Solution-Based Chemistry to Additive Manufacturing Dr. Bryan Kaehr, Sandia National Laboratories <i>[Invited]</i>		
	1100 - 1125	Laser Ablation of Al-Ni Alloys and Al-Ni Layer Systems Simulated with Molecular Dynamics and the Two-Temperature Model Dr. Johannes Roth, University of Stuttgart, Institute for Functional Materials and Quantum Technologies <i>[Invited]</i>				
	1125 - 1140	Modeling of Phase Transformations of Metals under High Power Influences Dr. Konstantin Khishchenko, Joint Institute for High Temperatures of the Russian Academy of Sciences	1125 - 1140	Simulations and Experiments on Microstructure Evolution in Nanosecond Laser Melting and Resolidification of Silicon Mr. Miao He, University of Virginia		
	1140 - 1155	Atomistic Simulations of Short Pulse Laser-Metal Interactions in Liquid Environment Dr. Leonid Zhigilei, University of Virginia	1140 - 1155	Manufacturing Processes and Nanomaterials for High-Purity Laser Ceramics Dr. Andrew Hunt, nGimat Co.		

Detailed Agenda (cont.)

1155 - 1210	Numerical Study of Laser Ablation on Aluminum for Shock Waves Applications – Development of a Suitable Model by Comparison with Recent Experiments Mr. Simon Bardy, CEA-DAM-DIF	1155 - 1210	Picosecond Laser Micromachining for Electronic Microscopy Sample Preparation Dr. Aurélien Sikora, LP3
1210 - 1330	Lunch Break - On Your Own		
	Track One <i>Lumpkins Ballroom North</i> Promising New Laser and Optical Technologies		Track Two <i>Lumpkins Ballroom South</i> MAPLE and Materials Processing
1330 - 1335	Announcements & Session Introduction Session Chair: Dr. Thierry Sarnet, LP3 CNRS Aix Marseille University	1330 - 1335	Announcements & Session Introduction Session Chair: Prof. Adrienne Stiff-Roberts, Duke University
1335 - 1400	Investigation on the Optimal Pumping Parameters for DPAL and XPAL Prof. Rongqing Tan, Chinese Academy of Sciences <i>[Invited]</i>	1335 - 1400	MAPLE Deposition of Nano-Entities and Composite Nanomaterials Dr. Enikő György, CSIC-ICMAB <i>[Invited]</i>
1400 - 1425	Optical Technologies: Interference Coatings for High Power Lasers Operating at Wavelengths in the 1-2 μm Range Prof. Carmen Menoni, Colorado State University <i>[Invited]</i>	1400 - 1425	Solar Cell Materials Deposited using Emulsion-Based, Resonant Infrared, Matrix-Assisted Pulsed Laser Evaporation Prof. Adrienne Stiff-Roberts, Duke University <i>[Invited]</i>
1425 - 1450	Smart Thermoresponsive Coatings Based on pNIPAM and its Derivatives Obtained by Matrix Assisted Pulsed Evaporation Dr. Laurentiu Rusen, National Institute for Laser, Plasma & Radiation Physics (INFLPR) <i>[Invited]</i>	1425 - 1450	Status of Commercial Scale PLD and MAPLE Technology Dr. James Greer, PVD Products, Inc. <i>[Invited]</i>
1450 - 1545	Break & Poster and Exhibit Technical Interchange Final Poster Voting (New Mexico Room)		
1545 - 1610	Nanoscale Engineering of Hybrid VO₂: Silicon Ring Resonators Prof. Richard Haglund, Vanderbilt University <i>[Invited]</i>	1545 - 1610	Pulsed Laser Deposited Crystalline Optical Waveguides for Thin-Film Lasing Devices Prof. Robert Eason, University of Southampton <i>[Invited]</i>
1610 - 1635	Lasing in the Sky Prof. Andre Mysyrowicz, LOA ENSTA <i>[Invited]</i>	1610 - 1635	Fundamentals of Laser Induced Functionalization of Nanomaterials through Reductive Sintering and Crystallization Prof. Costas Grigoropoulos, University of California at Berkeley <i>[Invited]</i>
1635 - 1650	Plasmonic Organic Light-Emitting Diode: Toward Organic Laser Diode under Electrical Pumping Prof. Azzedine Boudrioua, LPL CNRS	1635 - 1700	Why Quantitative Analysis of Thin Films Deposited by Pulsed Laser Deposition Matters Prof. Thomas Lippert, Paul Scherrer Institut <i>[Invited]</i>
1700 - 1800	Poster & Table-Top Tear-Down		
1810	Bussing to The Governor's Mansion		
1830 - 2130	Dinner & Awards Program with Entertainment by Mariachi Azteca & Savor Trio <i>The Governor's Mansion</i>		
2000 - 2130	Buses from The Governor's Mansion to La Fonda on the Plaza Will Run		

WEDNESDAY

WEDNESDAY

Claude Phipps

NO WONDER YOU WONDER!

Great Inventions and Scientific Mysteries

Springer

Dr. Claude Phipps announces the publication of his book "No Wonder You Wonder!"

written to satisfy the curious and encourage interest in science, technology, engineering and math. Phipps shares his enthusiasm for science and probing the major phenomena of our physical world. The full color, 330 page book is available in digital and paperback editions from your local bookstore, or as a **signed copy at this conference in the New Mexico Room**. For institutional and quantity orders contact Springer directly: John.Woolsey@springer.com. Re-sellers should contact Teri Yoshiuchi: Teri.Yoshiuchi@springer.com.

Chapters include: What is Science and What is not?, Einstein Said, Weird Reality, Chinese & Islamic Science, Fusion & Fission, Jets & Rockets, Electromagnetic Waves, Electronics, Biology, Optics, Lasers, Death Asteroids and even Religion.

"I read this book with delight and was fascinated by Phipps's approach! I believe No Wonder You Wonder will be captivating for teachers and their students - and for anyone with a sense of wonder."

– Dr. Ray Kidder, Laser Research Program Leader,
Lawrence Livermore National Laboratory (Ret.)

Detailed Agenda (cont.)

Thursday, 7 April 2016					
0700 - 0800	Light Continental Breakfast (Mezzanine)				
0700 - 1600	Registration Open (Mezzanine)				
	Welcome & Keynote				
0800 - 0805	Administrative Announcements & Keynote Introduction Dr. Ric Allott, STFC Rutherford Appleton Laboratory				
0805 - 0845	Keynote: Review of History and Current State of DPAL Research and Development Dr. Boris Zhdanov, U.S. Air Force Academy <i>[Invited]</i>				
	Track One <i>Lumpkins Ballroom North</i>		Track Two <i>Lumpkins Ballroom South</i>		Track Three <i>New Mexico Room</i>
	New Results in High Power Lasers and Their Applications		Laser Direct Writing		Directed Energy Workshop (Restricted Attendance)
0845 - 0850	Announcements & Session Introduction Session Chair: Dr. Ric Allott, STFC Rutherford Appleton Laboratory	0845 - 0850	Announcements & Session Introduction Session Chair: Dr. Alexandra Palla-Papavlu, National Institute for Laser, Plasma & Radiation Physics (INFLPR)	0845 - 0850	Announcements & Session Introduction Mr. Mark Neice, Directed Energy Professional Society
0850 - 0915	The DiPOLE Laser - Efficiently Delivering High Energy Pulses at kW Average Powers Dr. Ric Allott, STFC Rutherford Appleton Laboratory <i>[Invited]</i>	0850 - 0915	Toward 3D Printing of Pure Metals by Laser-Induced Forward Transfer Dr. Claas Visser, University of Twente <i>[Invited]</i>	0850 - 0915	Laser Diagnostics System for In-Situ, Real Time Measurement of Laser Power and Beam Profile on Airborne Targets Dr. Siavosh Hamadani, Scientific Applications and Research Associates <i>[Invited]</i>
0915 - 0940	Intense Ion and Neutron Beams from High Contrast Short Pulse Lasers Prof. Dr. Markus Roth, TU Darmstadt <i>[Invited]</i>	0915 - 0940	LIFT and MAPLE Deposition Techniques for the Development of Micro-Electromechanical Sensors Dr. Fabio Di Pietrantonio, Institute of Acoustics and Sensors - CNR <i>[Invited]</i>	0915 - 0940	Breakdown of Reciprocity for High Peak Power Laser Pulses Dr. John Palastro, Naval Research Laboratory <i>[Invited]</i>
0940 - 1005	Effective Volume Scribing of Sapphire Wafers by Dual-Wavelength Double-Pulse Picosecond Laser Irradiation Dr. Mindaugas Gedvilas, Center for Physical Sciences and Technology <i>[Invited]</i>	0940 - 1005	Laser-Induced Forward Transfer of High Viscosity Inks Dr. Philippe Delaporte, LP3 Laboratory - CNRS - AMU <i>[Invited]</i>	0940 - 1005	High-Peak Power Laser Pulse Propagation in Distributed Turbulence Dr. Michael Helle, Naval Research Laboratory <i>[Invited]</i>
1005 - 1030	Wavelength-Dependent Reflectivity Changes of Gold at Elevated Electronic Temperatures Mr. Andreas Blumenstein, Laser-Laboratorium-Göttingen e.V. / University of Kassel <i>[Invited]</i>	1005 - 1030	Laser Direct Write of Carbon Structures onto Flexible Substrates Dr. Alexandra Palla-Papavlu, National Institute for Laser, Plasma & Radiation Physics (INFLPR) <i>[Invited]</i>	1005 - 1030	Generation of High Power, Picosecond Mid-Infrared Pulses using Backwards Raman Amplification Dr. Luke Johnson, Naval Research Laboratory <i>[Invited]</i>
1030 - 1100	Break (Mezzanine)				
1100 - 1125	Laser Shock Adhesion Test (LASAT) Applied to Piezochromic Paintings Dr. Michel Boustie, CNRS <i>[Invited]</i>	1100 - 1125	Laser Forward Transfer of Nanostructures: Towards Original Sensing Applications Dr. Mihaela Filipescu, National Institute for Laser, Plasma & Radiation Physics (INFLPR) <i>[Invited]</i>	1100 - 1125	Absorption and Scattering of an HEL Beam by Atmospheric Aerosols Dr. Richard Fischer, Naval Research Laboratory <i>[Invited]</i>

THURSDAY

THURSDAY

Detailed Agenda (cont.)

1125 - 1150	Numerical Investigation of LSD Wave Characteristics using a 1-D Laser-Induced Discharge Model Mr. Kohei Matsui, The University of Tokyo <i>[Invited]</i>	1125 - 1150	High Laser Pulse Repetition Rate Ablation of the CIGS Thin-Film Solar Cells Mr. Edgaras Markauskas, Center for Physical Sciences and Technology <i>[Invited]</i>	1125 - 1150	Nonlinear Guiding of High-Peak Power Laser Pulses in Atmospheric Turbulence Dr. Joseph Penano, Naval Research Laboratory <i>[Invited]</i>
1150 - 1205	Experimental and Computational Investigation of Pulsed Laser Induced Defects in Monocrystalline Silicon for Photovoltaic Applications Mr. Zeming Sun, University of Virginia	1150 - 1215	Laser-Induced Ripple Formation on Stainless Steel Surface by Two-Color Single- and Double-Pulsed Picosecond Irradiation Dr. Gediminas Raciukaitis, Center for Physical Sciences and Technology (FTMC) <i>[Invited]</i>	1150 - 1215	High Power Picosecond Carbon Dioxide Laser based on Injection Seeded Unstable Resonator Dr. Joseph Penano, Naval Research Laboratory <i>[Invited]</i>
1205 - 1220	Research and Development a High-Performance Copper-Vapor Pulsed Lasers with Radiation Power up to 100 W for Precise Micromachining Prof. Mishik Kazaryan, P.N. Lebedev Physical Institute of the Russian Academy of Sciences				
1220/1215 - 1400	Lunch Break - On Your Own				
Welcome & Keynote					
1400 - 1405	Administrative Announcements & Keynote Introduction Conference Chair, Dr. Claude Phipps, Photonic Associates, LLC				
1405 - 1430	Keynote: Directed Energy Professional Society Overview Mr. Mark Neice, Directed Energy Professional Society <i>[Invited]</i>				
THURSDAY	Track One <i>Lumpkins Ballroom North</i>		Track Two <i>Lumpkins Ballroom South</i>		Track Three <i>New Mexico Room</i>
	Biological Applications		Workshop to Create a Strategic Roadmap to Commercialize Directed Energy Systems for Low-Cost Space Launches (Restricted Attendance)		Directed Energy Workshop, cont. (Restricted Attendance)
1430 - 1435	Announcements & Session Introduction Session Chair: Prof. Jack Yoh, Seoul National University	1430 - 1435	Announcements & Workshop Introduction Workshop Chairs: Prof. Jonathan Coopersmith, Texas A&M University and Dr. Eric Davis, Institute for Advanced Studies at Austin	1430 - 1435	Introductions Mr. Mark Neice, Directed Energy Professional Society
1435 - 1500	Ultrafast Laser Nanofabrication for Biological Applications Prof. Costas Grigoropoulos, University of California at Berkeley <i>[Invited]</i>	1435 - 1700	Workshop to Create a Strategic Roadmap to Commercialize Directed Energy Systems for Low-Cost Space Launches Prof. Jonathan Coopersmith, Texas A&M University and Dr. Eric Davis, Institute for Advanced Studies at Austin	1435 - 1500	Broadband Radiofrequency and Terahertz Emissions from Femtosecond Filaments in Air and Solid Targets Mr. Alexander Englesbe, Air Force Research Laboratory <i>[Invited]</i>
1500 - 1525	Multiscale Bone-Like Intelligent Interfaces Engineering using Laser Methods for Steering Mesenchymal Stem Cells Behavior in vitro Dr. Valentina Dinca, National Institute for Laser, Plasma & Radiation Physics (INFLPR) <i>[Invited]</i>			1500 - 1525	Metrology for Directed Energy Weapons: Applications for the U.S. Navy Dr. Subrata Sanyal, Naval Surface Warfare Center, Corona Division <i>[Invited]</i>

THURSDAY

Detailed Agenda (cont.)

THURSDAY	1525 - 1550	Laser Tattoo: Making Faster and Narrower Microjet using a Compact Hand-Held Er:YAG Laser at Shorter Pulse Duration for a Painless Skin Tattooing Prof. Jack Yoh, Seoul National University <i>[Invited]</i>	1435 - 1700	Workshop to Create a Strategic Roadmap to Commercialize Directed Energy Systems for Low-Cost Space Launches (Restricted Attendance) Prof. Jonathan Coopersmith, Texas A&M University and Dr. Eric Davis, Institute for Advanced Studies at Austin	1525	Session Adjourns	THURSDAY
	1550	Session Adjourns	1700	Session Adjourns			
	1730 -->	Architectural & Ghost Walking Tour, followed by Dinner on the Town					

Exhibit Show & Poster Session Hours

Please take time to view the technical poster papers and table-top exhibits in the New Mexico Room. Exhibit & poster hours include:

Monday, 4 April 2016:

1700 – 1830 Welcome Reception and Poster & Exhibit Technical Interchange

Tuesday, 5 April 2016:

0700 – 0800 Exhibits & Posters Open

1055 – 1125 Exhibits & Posters Open for Networking Break

1540 – 1635 Break & Poster and Exhibit Technical Interchange

Wednesday, 6 April 2016:

0700 – 0800 Exhibits & Posters Open

1030 – 1100 Exhibits & Posters Open for Networking Break

1450 – 1545 Break & Poster and Exhibit Technical Interchange (Final Poster Voting)

Table-Top Exhibitors

Continuum - <http://www.continuumlasers.com/>

Since its founding 40 years ago, Continuum has developed a full line of standard and custom high energy solid state lasers that are now used in scientific, industrial and commercial applications. These applications range from spectroscopy, materials analysis and Particle Image Velocimetry to x-ray generation and high power plasma physics. With the recent expanded capability, Continuum now offers high peak power femtosecond lasers such as ultra-intense high contrast systems and high power CEP-stabilized sub-20 fs lasers.

nGimat, LLC - <http://www.ngimatllc.com/>

nGimat is a manufacturer of over 60 inorganic nanopowders or coatings for laser and other applications. With unique processing technology, the compositions can be tailored to your specific needs and produce a wide range of volumes and at competitive price. We also have unique processes to put thin or thick ceramic layers onto various substrates.

"No Wonder You Wonder" Book-Signing - crhipps@aol.com

Written to satisfy the curious and encourage interest in science, technology, engineering and math. Get your signed copy in the exhibit hall.

Sciencetech, Inc. - <http://sciencetech-inc.com/>

Laser power and energy measurement instruments. Radiation power measurement. Custom designs - contact us!

Valyn VIP, Inc. - <http://www.valynvisar.com/>

Valyn VIP, Inc. is the sole source for the VALYN VISAR System. They provide consultation, installation and all the peripherals needed for your VISAR System including the Data Reduction Program and the Valyn Fiber Optic Probes. For the past 15 years, owners Wendy and Zane Barker, have worked closely with their customers to provide excellent customized equipment and customer service. Recently, they became the U.S. distributors for IDIL's (France) PDV System.

Poster Session

- **Single Step Laser Printing of Continuous Metal Lines at High Velocity**, Mr. Philippe Delaporte, Aix-Marseille University, CNRS, LP3 Laboratory
- **Odorant-Binding Proteins Immobilization by Laser Methods for Micro-Electromechanical Sensors Development**, Dr. Valentina Dinca, National Institute for Laser, Plasma & Radiation Physics (INFLPR)
- **Energy Deposition in Dielectric Materials by Short Laser Pulses**, Dr. Guillaume Duchateau, CELIA
- **Laser-Induced Backward Transfer of Intact Nano-Structured Polymer Structures**, Prof. Robert Eason, University of Southampton
- **Broadband Radiofrequency and Terahertz Emissions from Femtosecond Filaments in Air**, Mr. Alexander Englesbe, Air Force Research Laboratory
- **Dielectric Materials Grown as Thin Films by Pulsed Laser Deposition**, Dr. Mihaela Filipescu, National Institute for Laser, Plasma & Radiation Physics (INFLPR)
- **Development of a Reed Valve Air-Breathing System and a Microwave Concentrator for Microwave Rocket**, Mr. Masafumi Fukunari, The University of Tokyo
- **Direct Laser Interference Patterning of Thin Metal Films to Control the Flow of Electromagnetic Radiation**, Dr. Mindaugas Gedvilas, Center for Physical Sciences and Technology
- **Estimation Techniques to Support Laser Maneuver of Orbital Debris**, Mr. Steven Gehly, RMIT University
- **High-Specific Impulse Characteristics of a Short-Pulse Laser-Assisted Pulsed Plasma Thruster**, Prof. Hideyuki Horisawa, Tokai University
- **Ultraviolet Light-Emitting Diodes for Micropropulsion Applications**, Prof. Hideyuki Horisawa, Tokai University
- **Nanoparticles Formed by Spark Discharge and by Laser Ablation**, Dr. Tatiana Itina, Hubert Curien Lab. CNRS/UJM/Lyon University
- **Ultrashort Laser-Induced Nanogratings in Glass: Insights from Numerical Modeling**, Dr. Tatiana Itina, Hubert Curien Lab. CNRS/UJM/Lyon University
- **Laser Acceleration of Biological Objects in Liquids by Self-Conjugated Resonator**, Dr. Serine Kazaryan, Global Medical System Clinics and Hospitals
- **Advances in Nanoscale 3D Molecular Imaging by Soft X-Ray Laser Ablation Mass Spectrometry**, Prof. Carmen Menoni, Colorado State University
- **Laser Micromachining for Lab-on-a-Chip Devices**, Dr. Alexandra Palla-Papavlu, National Institute for Laser, Plasma & Radiation Physics (INFLPR)
- **A Simple Cost-Benefit Analysis for Millimeter-Wave Thermal Launch**, Dr. Kevin Parkin, Parkin Research, LLC
- **High Average Power CO Laser Status in the Context of the Ground to Orbit Laser Ablation Propulsion Development**, Mr. Iouri Pigulevski, DLTECH Institute
- **Modeling High Energy Lasers in Various Atmospheric Conditions and the Effect on Energy Storage Requirements**, Dr. Conor Pogue, Digital Consulting Services
- **Smart Thermoresponsive Coatings Based on pNIPAM and its Derivatives Obtained by Matrix Assisted Pulsed Evaporation for Tissue Engineering**, Dr. Laurentiu Rusen, National Institute for Laser, Plasma & Radiation Physics (INFLPR)
- **Metrology for Directed Energy Weapons: Applications for the U.S. Navy**, Dr. Subrata Sanyal, Naval Surface Warfare Center, Corona Division
- **Dynamic Material Parameters in Molecular Dynamics and Hydrodynamic Simulations on Ultrashort-Pulse Laser Ablation of Aluminum**, Dr. Stefan Scharring, German Aerospace Center (DLR), Institute of Technical Physics
- **One-Dimensional Particle Simulation on Laser-Supported Detonation Wave**, Dr. Kohei Shimamura, University of Tsukuba
- **Pulsed Laser Dopant Activation in Nanocrystal Silicon Embedded in a SiO₂ Matrix**, Dr. Brian Simonds, National Institute of Standards and Technology
- **Effects of Laser Polarization and Linear Surface Features on Nanoparticle Synthesis during Laser Ablation in Liquids**, Mr. John Tomko, Rutgers University - Camden
- **Probing Temporal and Spatial Properties of Ultrashort Laser Excitation in Dielectrics via Common-Path Spectral Interferometry**, Mr. Thomas Winkler, University of Kassel - Institute for Physics and CINSaT
- **Single Temporally Tailored Femtosecond Laser Pulses for Controlled High Aspect Ratio Nanomachining of Dielectrics**, Mr. Thomas Winkler, University of Kassel - Institute for Physics and CINSaT

Group Tours

New Mexico History Museum

Sunday, 3 April 2016, 1140

113 Lincoln Avenue, Santa Fe, NM

(On the Historic Plaza in Santa Fe, Next to the Palace of the Governors)

505-476-5200

The New Mexico History Museum, opened in May 2009, will change the way that New Mexicans and visitors understand state history and the history of the nation. The new museum includes permanent and temporary exhibitions that span the early history of indigenous people, Spanish colonization, the Mexican Period, and travel and commerce on the legendary Santa Fe Trail.

The museum serves as the anchor of a campus that encompasses the Palace of the Governors, the Palace Press, the Fray Angelico Chavez History Library and Photo Archives. The New Mexico History Museum is located within walking distance to the La Fonda Hotel. Admission to the Museum is \$9. Meet in the hotel lobby at 1140 and group will walk over together. Advance sign-up NOT required.

Discovery Tour of Santa Fe & Networking Dinner

Thursday, 7 April 2016, 1730

On Thursday, 7 April 2016, HPLA/DE participants have the opportunity to take a Discovery Walking Tour of Santa Fe. The tour will feature some history of the ancient city, unique architecture and one or two ghost stories about the city's most famous inhabitants. Attendees will meet in the La Fonda lobby around 1730 for the commencement of the tour. This tour will last approximately 1.5 - 2 hours and costs \$15 per person. Advance sign-up required.

After the tour, join your colleagues at 1930 pm for a wonderful meal at one of Santa Fe's fabulous restaurants. Dinner is open to all attendees following the tour, regardless of whether you participated in the tour or not. Advance sign-up is required by Wednesday at 1200, for restaurant reservation purposes. Restaurant choices include La Casa Sena and The Santa Cafe. Attendees are responsible for the cost of their dinner (this is not included in the tour fee).

Wednesday Dinner at the Governor's Mansion

Please plan to join your colleagues for dinner and entertainment on Wednesday, 6 April at the Governor's Mansion. The event will include an Awards Ceremony, dinner, entertainment, and dancing. Dinner tickets are included with the registration fee. Guest tickets can be purchased for \$70 in advance. Busses will depart from the La Fonda on the Plaza garage at 1810. Bring a light jacket and comfortable shoes (dinner will take place in a heated tent on the lawn).

Entertainment includes Savor, an acoustic group of guitar/ doubling mandolin, bass and percussion with vocals and harmonies that create a rich sound of Cuban and Latin style music with Afro-Cuban rhythms. A second group will play, called Mariachi Azteca, whose sound has deep cultural roots that span from its native people originating from Spain and Mexico who later settled in Santa Fe. Mariachi music is the music of country people.



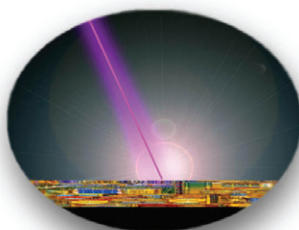


LP3 Laboratory

Lasers, Plasmas and Photonic Processes
 UMR 7341 CNRS - Aix-Marseille University
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Laser nano/micro fabrication
Laser analysis for plasma and material
Biosensors
Ultrafast Sources
3 Laser Platforms



Lasers and Plasmas



Lasers and Photonics

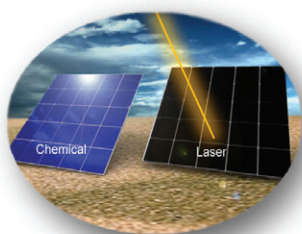


Lasers and Micro/Nano Electronics



Friendly Staff: 35 people

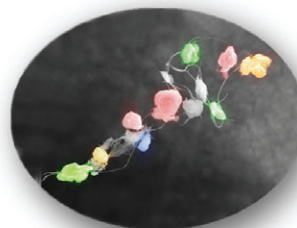
13 permanent Researchers/Professors
 6 Engineers and Technicians
 8 Post-docs, 6 PhD students, + Masters Students



Lasers, Energy and Environment

State-of-the-art Laser Facility:

- > 15 lasers (ns, ps, fs)
- Clean Room
- characterization: SEM, EDS, AFM, LIBS...



Lasers and Life Sciences



LP3 is a European Laser Research Infrastructure LASERLAB EUROPE
 LP3 is coordinator of R&D National and European projects



The background features a complex, abstract design of glowing green and blue light trails. These trails form various shapes, including loops, spirals, and dense clusters of lines, creating a sense of motion and depth. The overall color palette is dominated by vibrant greens and blues, set against a dark, almost black background. The lighting is soft and ethereal, giving the impression of a futuristic or digital environment.

See you in 2018!