

**Monday, 31
August**

from 8:00 Delegate registration

Session 1

8:30 – 8:45 WELCOME AND OPENING

Promising New
Laser
Technologies

8:45 – 9:15 Invited I-01: **A/Prof Yves Bellouard**
Ecole Polytechnique Fédérale de Lausanne, Switzerland
Femtosecond laser-induced material modifications to control stress states in silica: a step toward metastable polymorphic phase generation

9:15 – 9:30 O-01: **Dr Razvan Stoian**
Laboratoire Hubert Curien, CNRS, Université Jean Monnet, France
Spatio-temporal dynamics of non-diffractive ultrafast laser excitation and nanostructuring in bulk silica glass

9:30 – 9:45 O-02: **Remi Lachaine**
École Polytechnique de Montréal, Canada
Physical mechanisms of bubble formation induced by ultrafast laser irradiation of resonant plasmonic core-shells

9:45 – 10:00 O-03: **Dr Stefano Orlando**
Institute for Structure of Matter, National Research Council, Italy
Femtosecond Laser texturing of CVD Diamond surface for Solar Conversion Application

10:00 – 10:15 O-04: **Dr Emmanuel Haro-Poniatowski**
Universidad Autónoma Metropolitana Iztapalapa, Mexico
Synthesis of bismuth-based nanosheets by ultrasound assisted liquid laser ablation

10:15 – 10:30 O-05: **Dr Tatiana Itina**
Hubert Curien Laboratory, UMR CNRS 5516/Lyon University, France
Ultra-short laser interactions with nanoparticles: from melting and shape change to fragmentation

10:30 – 11:00 Coffee break

Session 2
Lasers in
Nanoscience

11:00 – 11:30 Invited I-02: **Prof Min Gu,**
Swinburne University of Technology, Australia
Femtosecond laser fabrication for nanophotonics

11:30 – 11:45 O-06: **Dr Christos Boutopoulos**
École Polytechnique de Montréal, Canada
Mechanism investigations of gold nanoparticle enhanced ultrafast laser near field optical breakdown and nanocavitation

11:45 – 12:00 O-07: **Tetsuya Shimogaki,** *Kyushu University, Japan*
Effects of UV-Laser Processing on ZnO Nanocrystals: Controlling the Crystal Growth, Electrical and Optical Properties

12:00 – 12:15 O-08: **Prof Nikita Bityurin**
Institute of Applied Physics, RAS, Russia
Plasmonic, excitonic and exciton-plasmonic photoinduced nanocomposites

12:15 – 12:30 O-09: **Prof Xianfan Xu**
Purdue University, USA
Sub-Diffraction-Limit Laser Lithography assisted by Laser-Induced Periodic Surface Structures (LIPSS)

12:30 – 12:45 O-10: **Dr Yasuhiko Shimotsuma**
Kyoto University, Japan
Self-organization of nanostructures embedded in various materials

12:45 – 14:00 Lunch break

Session 3
Promising New
Laser
Technologies

- 14:00 – 14:30 **Invited I-03: Prof Alessandro De Giacomo**
University of Bari, Italy
Fundamental aspects of Nanoparticles production by laser ablation in liquids
- 14:30 – 14:45 **O-11: Dr Marco Ernst,**
Australian National University, Australia
Laser welding for handling of thin crystalline Si wafers
- 14:45 – 15:00 **O-12: Dr Alexandra Palla-Papavlu,**
National Institute for Lasers, Plasma, and Radiation Physics, Romania
Highly sensitive and selective sensor arrays via laser-induced forward transfer
- 15:00 – 15:15 **O-13: Dr Richard Russo**
Lawrence Berkeley National Laboratory, USA
Laser Ablation Molecular Isotopic Spectroscopy (LAMIS)
- 15:00 – 15:30 **O-14: Dr M. Mahjouri-Samani, Oak Ridge National Laboratory, USA**
Controlled Growth of Two-Dimensional Layered Semiconductors from Laser-Synthesized Nanoparticles
- 15:30 – 15:45 **O-15: Dr Ricardas Buividas**
Swinburne University of Technology, Australia
Characterisation of femtosecond laser structured cubic-BN

15:45 – 16:15 Coffee break

Session 4
Promising New
Laser
Technologies

- 16:15 – 16:45 **Invited I-04: Prof Martin Wolf**
Fritz Haber Institute of the Max Planck Society, Germany
Fundamental aspects of laser-matter interaction: Ultrafast dynamics of insulator-to-metal transitions probed by time-resolved photoemission
- 16:45 – 17:00 **O-16: Dr Elena P. Silaeva**
Tokyo University of Science, Japan
Laser-matter interaction in ultra-high DC fields: First-principles calculations
- 17:00 – 17:15 **O-17: Dr Jian Xu**
RIKEN Center For Advanced Photonics, Japan
Femtosecond laser fabricated electrofluidic devices enabling 3D flexible manipulation and observation of microorganism motions
- 17:15 – 17:30 **O-18: Prof Michael Withford**
MQ Photonics Research Centre, Australia
3D Integrated Photonics: A new enabling technology for astronomy, telecommunications, sensing and quantum science
- 17:30 – 17:45 **O-19: Prof Zhisong Xiao**
Beihang University, China
Tuning Dispersion by Controlling Phase Variation in a Ring Resonator Coupled with Mach-Zehnder Interferometer
- 17:45 – 18:00 **O-20: Dr Maria Isabel Sanchez**
Aix Marseille Université, CNRS, France
Laser induced Forward Transfer for improving fine line metallization in photovoltaic applications

18:30 – 20:30 Poster Session 1

**Tuesday, 1
September**

Session 5
Emerging trends
in
photoexcitations

- | | |
|---------------|--|
| 8:30 – 9:00 | Invited I-05: Prof David Villeneuve,
<i>National Research Council, Canada</i>
High Harmonics and Attosecond Pulses – Seeing Inside Molecules |
| 9:00 – 9:15 | O-21: Dr Jiri Bulir
<i>Institute Of Physics, ASCR, Czech Republic</i>
Photoluminescence excitation of rare earth doped fluoride films by surface plasmon resonance in the Kretschman configuration |
| 9:15 – 9:30 | O-22: Dr Nick Cvetojevic, <i>University of Sydney, Australia</i>
Towards Planet Hunting on a Chip: First Successful On-Telescope Deployment of Integrated 2D-3D Hybrid Photonics using Extreme Adaptive Optics |
| 9:30 – 9:45 | O-23: Dr Guillaume Duchateau
<i>Centre Lasers Intenses et Applications (CELIA), France</i>
Laser structuration of dielectric materials by a train of femtosecond pulses through cumulative effects |
| 9:45 – 10:00 | O-24: Alessandro Maffini, <i>Politecnico Di Milano, Italy</i>
Laser Cleaning of Pulsed Laser Deposited diagnostic mirrors for nuclear fusion applications |
| 10:00 – 10:15 | O-25: A/Prof M. Cather Simpson
<i>The University of Auckland, The MacDiarmid Institute for Advanced Materials and Nanotechnology and The Dodd Walls Centre for Quantum and Photonic Technologies, New Zealand</i>
Quantitative Comparison of the Efficiency of Laser Ablation for Bessel, Vortex and Gaussian Beam Shapes |

10:15 – 10:45 *Coffee break*

Session 6
Lasers in
Nanoscience

- | | |
|---------------|--|
| 10:45 – 11:15 | Invited I-06: Prof Roberto Osellame
<i>Institute For Photonics And Nanotechnology-CNR, Italy</i>
Femtosecond laser micromachining for 3D optofluidic devices |
| 11:15 – 11:30 | O-26: Glen Douglass,
<i>Macquarie University, Australia</i>
Feasibility Study of Femtosecond Laser Written Arrayed Waveguide Gratings |
| 11:30 – 11:45 | O-27: Dr Michael Lee
<i>Paul Scherrer Institute, Switzerland</i>
Laser direct-write of complex materials: towards multi-layered micro/nano-structured optoelectronic devices |
| 11:45 – 12:00 | O-28: Prof Michel Meunier
<i>Polytechnique Montreal, Canada</i>
Plasmonic nanoparticles enhanced ultrafast laser locally inducing stimulation of hippocampal neurons |
| 12:00 – 12:15 | O-29: Dr Mitsuhiro Honda
<i>Institute Of Innovative Science And Technology At Tokai University, Japan</i>
ZnO nanostructures prepared through millisecond pulsed laser ablation in liquid |
| 12:15 – 12:30 | O-30: Prof Anquan Jiang
<i>Fudan University, China</i>
Temperature dependence of semiconducting BiFeO ₃ thin films deposited by pulsed laser deposition for resistive memory application |

12:30 – 14:00 *Lunch break*

Session 7
Pulsed Laser
Deposition

- 14:00 – 14:30 **Invited 07: A/Prof Ariando**
National University of Singapore
Functional oxide interfaces by pulsed laser deposition
- 14:30 – 14:45 **O-31: Shuhei Yada**
Keio University, Japan
Nanostructure formation on PLLA and PLGA by femtosecond laser irradiation
- 14:45 – 15:00 **O-32: Prof Martin Ntwaeaborwa**
University Of The Free State, South Africa
Cathodoluminescent and photoluminescent properties of pulsed laser deposited thin phosphor films
- 15:00 – 15:15 **O-33: Dr Jan Lancok**
Institute of Physics, Academy of Sciences of the Czech Republic, Czech Republic
Fluoride-metals nanostructured films fabricated by Pulsed Laser Deposition with auxiliary Electron beam evaporation
- 15:15 – 15:30 **O-34: Prof Ikurou Umezu**
Konan University, Japan
Dynamics of laser ablated colliding plumes in background gas
- 15:30 – 15:45 **O-35: Ville Kekkonen**
Picodeon Ltd Oy, Finland
Picosecond pulsed laser deposition of metal and metal-oxide layers with controllable porosity for sensor applications

15:45 – 16:15 Coffee break

Session 8
Emerging trends
in photo-
excitations

- 16:15 – 16:45 **Invited I-08: Prof Masakatsu Murakami**
Institute of Laser Engineering, Osaka University, Japan
Proton Beam Generation with Nanotube Accelerator Driven by Ultra-Intense Ultra-Short Laser
- 16:45 – 17:00 **O-36: Dr Burkhard Fechner**
Coherent LaserSystems GmbH & Co. KG, Germany
Enabling Laser Applications in Microelectronics Manufacturing
- 17:00 – 17:15 **O-37: Dr Philippe Delaporte**
Aix-Marseille University, CNRS, LP3, France
Influence of ink properties on the dynamics of high velocity laser printing
- 17:15 – 17:30 **O-38: Amany Gouda,**
Department of Physics, Nagoya University, Japan
Formation Mechanism of Periodic Nano-Grating Structure by Weibel Instability
- 17:30 – 17:45 **O-39: Andrea Pezzoli, Politecnico Di Milano, Italy**
Pulsed Laser Deposition of tailored Tungsten and Tungsten Oxide films
- 17:45 – 18:00 **O-40: Prof Alexander Andreev**
Max Born Institute, Germany
Effective generation of fast particles and X-ray from nano-structured targets irradiated by ultra-short intense laser pulses

18:30 – 20:30 Poster Session 2

Wednesday, 2 September

Session 9
Laser Interactions
with Organic and
Biological
Materials

- 8:30 – 9:00 **Invited I-09: Prof Ion Mihailescu**
National Institute For Lasers, Plasma, and Radiation Physics, Romania
Soft pulsed laser technologies for transfer of organic materials
- 9:00 – 9:15 **O-41: Dr Carmen Ristoscu**
National Institute For Lasers, Plasma And Radiation Physics, Romania
Combinatorial Matrix - Assisted Pulsed Laser Evaporation for fabrication of maps of biomaterials
- 9:15 – 9:30 **O-42: Dr David McPhail**
Imperial College, United Kingdom
Studies in Laser Cleaning from London Museums Including Some Recent Work
Laser Cleaning of PMMA
- 9:30 – 9:45 **O-43: Dr Anatoliy Vorobyev**
University Of Rochester, USA
Biomimetic multifunctional metallic surfaces produced by femtosecond laser
- 9:45 – 10:00 **O-44: Dr Anna Paola Caricato**
University Of Salen, Italy
MAPLE deposition of polymer multilayer structures: overcoming the limitation of solvent-based techniques
- 10:00 – 10:15 **O-45: Dr Esther Rebollar,**
Instituto De Química Física Rocasolano, CSIC, Spain
In situ monitoring of Laser Induced Periodic Surface Structures formation on polymer films by Grazing Incidence Small Angle X-ray

10:15 – 10:45 Coffee break

Session 10
Laser Interactions
with Organic and
Biological
Materials

- 10:45 – 11:15 **Invited I-10: Prof Henry Chapman**
Center for Free-Electron Laser Science, DESY Synchrotron, Germany
Diffraction before destruction: Imaging bio-molecules with high-intensity X-ray Free-Electron Laser (XFEL) pulses
- 11:15 – 11:30 **O-46: Dr Csaba Vass**
University of Szeged, Department of Optics and Quantum Electronics, Hungary
Time-resolved study on periodic microstructure fabrication in polymers
- 11:30 – 11:45 **O-47: Dr Vincent Daria**
The Australian National University, Australia
Ultrafast laser surgery of dendrites
- 11:45 – 12:00 **O-48: Prof Michael Ziskind**
Laboratoire De Physique Des Lasers, Atomes Et Mole'cules Laboratoire De Physique, France
Substrate mediated laser ablation and droplet capture for biomolecules analysis by mass spectrometry
- 12:00 – 12:15 **O-49: Hunjae Jang**
Seoul National University, Korea
Skin ablation for efficient drug delivery via the laser-induced microjet injector

12:15 – 13:00 Lunch break

13:00 – 18:30
19:00 – 22:00

Excursions
Conference Dinner

**Thursday, 3
September**

Session 11 Fundamentals of Laser-Material Interactions	8:30 – 9:00	Invited I-11: Prof Nadezhda Bulgakova <i>HiLASE Centre, Institute of Physics AS, Czech Republic</i> Numerical modelling of laser interaction with transparent materials: From description to prediction
	9:00 – 9:15	O-50: Prof Juergen Reif , <i>Brandenburg. Tech. University BTU Cottbus-Senftenberg, Germany</i> Laser Induced Periodic Surface Structures of Thin, Complex Multi-Component Films
	9:15 – 9:30	O-51: Dinithi Namarath <i>Queensland University of Technology, Australia</i> Modelling field propagation with spatially varying light intensity in photorefractive media
	9:30 – 9:45	O-52: Dr Norbert Linz <i>University Of Luebeck, Institute Of Biomedical Optics, Germany</i> Wavelength dependence of nanosecond IR laser-induced breakdown in water: evidence for multiphoton initiation via an intermediate
	9:45 – 10:00	O-53: Dr Konstantin Khishchenko <i>Joint Institute for High Temperatures RAS, Russia</i> Multiphase equations of state for metals under intense laser influences
	10:00 – 10:15	O-54: Dr Alexey Volkov <i>University Of Alabama, USA</i> Non-equilibrium effects in laser-induced plasma plumes

10:15 – 10:45 Coffee break

Session 12 Fundamentals of Laser-Material Interactions	10:45 – 11:15	Invited I-12: Prof Stefan Nolte <i>Friedrich-Schiller-Universität Jena, Germany</i> Ultrashort pulse laser processing of transparent materials – potential and applications
	11:15 – 11:30	O-55: Lasse Haahr-Lillevang <i>Aarhus University, Denmark</i> Short-pulse laser excitation of quartz: Experiments and modelling of transient optical properties and ablation
	11:30 – 11:45	O-56: Ayumu Matsumoto <i>Kyoto University, Japan</i> Absorption spectroscopy of atoms in the bubble produced by laser ablation in aqueous solutions
	11:45 – 12:00	O-57: Prof Wolfgang Husinsky <i>Technische Universität Wien, Austria</i> Sub-10fsec to 30 fsec laser ablation: Experimental studies of key features during the first steps of laser ablation around the threshold
	12:00 – 12:15	O-58: Prof Masaki Hashida <i>Kyoto University, Japan</i> Orientation of periodic grating structures controlled by double pulse irradiations
	12:15 – 12:30	O-59: Prof Mishik Kazaryan <i>Lebedev Physical Institute of Russian Academy of Sciences, Russia</i> Laser processing with specially designed laser beam

12:30 – 14:00 Lunch break

Session 13
Pulsed Laser
Deposition

- 14:00 – 14:30 Invited I-13: **Prof Ya Cheng**
Shanghai Institute of Optics and Fine Mechanics, China
Nanoscale ablation and 3D structuring in porous glass: mechanism and applications
- 14:30 – 14:45 O-60: **Prof Thomas Lippert**
Paul Scherrer Institute, Switzerland
Thin film compositional variations in three distinct pressure regimes during pulsed laser deposition
- 14:45 – 15:00 O-61: **Kirill Migdal**
All-Russia Research Institute of Automatics, Russia
Laser-induced spalling of thin metal film from silica substrate followed by inflation of microbump
- 15:00 – 15:15 O-62: **Tatsuki Owashi**
Tokai University, Japan
Tin oxide nanostructures prepared by laser ablation in water
- 15:15 – 15:30 O-63: **Reece Oosterbeek**, *The University of Auckland, New Zealand*
Ultrashort pulsed laser ablation threshold dependence on incident wavelength in monocrystalline silicon
- 15:30 – 15:45 O-64: **Dr Evgeny Zamburg**
Southern Federal University, Russia
Influence of Plume Parameters on Properties of Nanocrystalline ZnO Films Obtained by Pulsed Laser Deposition

15:45 – 16:15 *Coffee break*

Session 14
Pulsed Laser
Deposition

- 16:15 – 16:45 Invited I-14: **Prof Jean-Philippe Colombier**
Laboratoire Hubert Curien, France
Dynamics of nanostructure formation on metal surfaces induced by ultrashort laser irradiation
- 16:45 – 17:00 O-65: **Prof Ovidiu Crisan**
National Institute For Materials Physics, Romania
Interfacial mechanisms and potential applications of novel laser ablated L10-based nanocomposite magnets
- 17:00 – 17:15 O-66: **JJ Naddeo**
Rutgers University, USA
The influence of cavitation bubble dynamics and laser fluence on mean particle diameter in laser ablation of metal targets in liquids
- 17:15 – 17:30 O-67: **Toshinobu Tanaka**
Graduate school of information science and electrical engineering, Kyushu University, Japan
Synthesis of Mg-doped ZnO microspheres by laser ablation in air and their crystal and photoluminescence properties
- 17:30 – 17:45 O-68: **Dr Johannes Roth**
University Stuttgart, Germany
Molecular Dynamics Simulations of Laser Ablation of Al-Ni alloys and Al-Ni layer systems
- 17:45 – 18:00 O-69: **Prof M K Jayaraj**
Cochin University of Science and Technology, India
Enhanced dielectric properties of Bismuth Zinc Niobate-Silver composite thin films prepared by pulsed laser deposition

18:30 – 20:30 **Poster Session 3**

**Friday, 4
September**

Session 15
Laser-Based
Analytical
Methods

- 8:30 – 9:00 **Invited I-15: Dr Vassilia Zorba**
Lawrence Berkeley National Laboratory, USA
High-resolution ultrafast laser ablation-based chemical imaging of energy materials
- 9:00 – 9:15 **O-70: Prof Javier Laserna**
University of Malaga, Spain
LIBS spectroscopy meets the ocean. Chemical analysis of archeological materials in Mediterranean waters
- 9:15 – 9:30 **O-71: Prof Cristian Focsa**
University Of Lille, France
Two-Step Laser Mass Spectrometry (L2MS) analysis of soot particles surface composition: new developments on the VUV single photon
- 9:30 – 9:45 **O-72: Dr Sebastian Trusso**
Istituto Per I Processi Chimico-Fisici, CNR, Italy
Decoration of silicon nanowires with laser ablated silver nanoparticles for surface-enhanced Raman spectroscopy
- 9:45 – 10:00 **O-73: Nathan Goodfriend**
University Of Edinburgh, United Kingdom
Comparison of fs and ns lasers for Blister-Based Laser-Induced Forward-Transfer
- 10:00 – 10:15 **O-74: Dr Hai-zhong Guo**
Institute of Physics, Chinese Academy of Sciences, China
Oxygen vacancies, a crucial role playing on structural, magnetic, and electrical properties of epitaxial manganite thin films

10:15 – 10:45 *Coffee break*

Session 16
Ultrafast
Phenomena and
Phase
transformations

- 10:45 – 11:15 **Invited I-16: A/Prof Stephen Madden**
Australian National University, Australia
Ultrafast lasers on a chip: Progress towards making the femtosecond world mainstream
- 11:15 – 11:30 **O-75: Dr Erik Wagenaars**
York Plasma Institute, University Of York, United Kingdom
Plasma-Enhanced Pulsed Laser Deposition of metal-oxide films: studying the plasma physics for enhanced process control
- 11:30 – 11:45 **O-76: Dr Peter Gregorcic**
University of Ljubljana, Slovenia
Resonance effect of the secondary vapor-bubble's oscillations induced by a synchronized delivery of Er:YAG-laser pulses
- 11:45 – 12:00 **O-77: Dr Rie Tanabe**
Nagaoka University Of Technology, Japan
Dynamics of laser-induced cavitation bubble in liquid studied by high-speed stroboscopic videography: Effects of liquid viscosity
- 12:00 – 12:15 **O-78: Prof Koichi Sasaki**
Hokkaido University, Japan
Dynamics of cavitation bubbles induced by laser ablation in liquid nitrogen at various temperatures

12:15 – 13:00 **COLA-2015
Awards and Closing**