

2017

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THE MEETING FOR HIGH POWER LASER TECHNOLOGIES
THAT DRIVE EUROPE'S LARGEST OPTOELECTRONIC
INFRASTRUCTURE PROJECTS.

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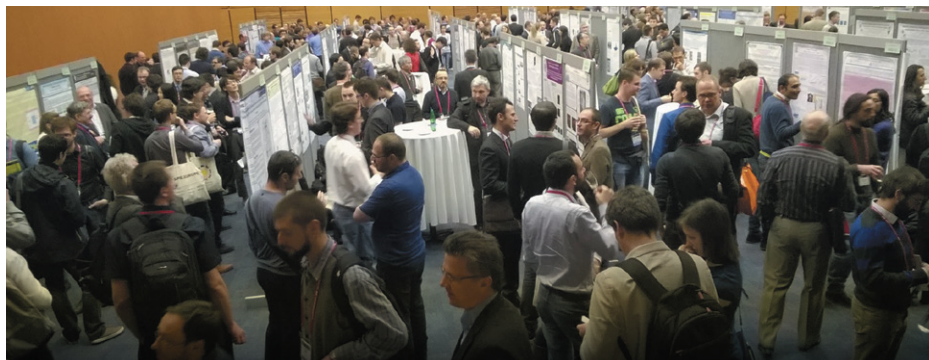
Conferences: 24-27 April 2017

Exhibition: 25-26 April 2017

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2017

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OPTOELECTRONICS

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TECHNOLOGIES

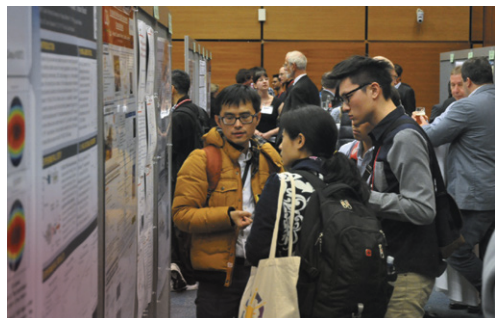
- Metamaterials
- Nonlinear Optics and Applications
- Photon Counting Applications
- Quantum Optics and Quantum Information Transfer and Processing
- Optical Sensors
- Micro-structured and Specialty Optical Fibres
- Holography: Advances and Modern Trends
- Relativistic Plasma Waves and Particle Beams as Coherent and Incoherent Radiation Sources
- EUV and X-ray Optics
- Damage to VUV, EUV, and X-ray Optics (XDam6)
- Advances in X-ray Free-Electron Lasers
- High-Power, High-Energy, and High-Intensity Laser Technology
- Medical Applications of Laser-Generated Beams of Particles
- Laser Acceleration of Electrons, Protons, and Ions
- Research Using Extreme Light: Petawatt-Class Lasers
- Integrated Optics
- X-Ray Lasers and Coherent X-Ray Sources
- Technology and Applications of Intense, High Average Power Lasers

Submit Abstracts by
24 OCTOBER 2016



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PLAN TO PARTICIPATE



The Organising Committee of the seventh SPIE Optics + Optoelectronics invites you to submit papers to this exciting meeting. The Optics + Optoelectronics International Symposium addresses the latest developments and advances in a broad range of optics and optoelectronic devices, technologies, and their integration. The conferences feature cutting-edge topics including petawatt photonics, high-power and high-repetition rate systems, diode-pumped laser systems, and FELs, along with the latest advances in optical sensing, holography, x-ray optics, metamaterials, and nonlinear and quantum optics.

This year will feature a special Industry Programme Session as well as a new Workshop discussing recent advances in laser technology, *Technology and Applications of Intense, High Average Power Lasers*. The 2017 symposium will also introduce a new conference on X-Ray Lasers and Coherent X-Ray Sources.

The symposium aims to foster networking among fellow researchers, enable the exchange of new ideas and novel concepts, and encourage discussions about the most recent advances in optics and optoelectronics.

We look forward to seeing you at SPIE Optics + Optoelectronics in Prague, where opportunities flourish to combine cutting-edge science and technology with the historic charm of the city of a thousand spires.

Plan to present your research and join us in 2017 for this exciting event.

GENERAL CHAIRS



Jiri Homola
Institute of Photonics
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Czech Republic



Bedřich Rus
ELI Beamlines and
Institute of Physics,
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Pavel Tománek, Brno Univ. of Technology (Czech Republic)

IN MEMORIAM



Wolfgang Sandner

ELI-DC director and laser scientist

The 2017 Symposium will be dedicated to honouring Wolfgang Sandner, 2011 Optics + Optoelectronics symposium chair and a member of the symposium steering committee.

Through his involvement, Wolfgang made considerable contributions to the success of the event. We will greatly miss our dear friend and colleague.

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Thomas Tschentscher, European XFEL GmbH (Germany)

Alexei M. Zheltikov, Lomonosov Moscow State Univ. (Russian Federation)

Metamaterials (EOO101)

Conference Chairs: **Vladimír Kuzmiak**, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); **Peter Markos**, Comenius Univ. in Bratislava (Slovakia); **Tomasz Szoplik**, Univ. of Warsaw (Poland)

Programme Committee: **Che Ting Chan**, Hong Kong Univ. of Science and Technology (Hong Kong, China); **Jiri Ctyroky**, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); **Nigel P. Johnson**, Univ. of Glasgow (United Kingdom); **Maria Kafesaki**, Foundation for Research and Technology-Hellas (Greece); **Yuri S. Kivshar**, The Australian National Univ. (Australia); **Rafal Kotynski**, Univ. of Warsaw (Poland); **Andrei V. Lavrinenko**, DTU Fotonik (Denmark); **Concita Sibilía**, Univ. degli Studi di Roma La Sapienza (Italy); **Constantin R. Simovski**, Aalto Univ. School of Electrical Engineering (Finland); **Costas M. Soukoulis**, Iowa State Univ. (United States); **Martin Wegener**, Karlsruher Institut für Technologie (Germany); **Nikolay I. Zheludev**, Optoelectronics Research Ctr. (United Kingdom); **Richard W. Ziolkowski**, The Univ. of Arizona (United States)

The SPIE European conference series on metamaterials has been held since its foundation in 2005. In even years the conference is organized in Brussels within the SPIE Photonics Europe Symposium. In odd years the conference is held in Prague as part of the SPIE Optics + Optoelectronics Congress. The 2017 Prague conference will be focused on advances in design of metamaterials and its electromagnetic and functional properties. The following topical sessions are planned:

- negative permeability and/or permittivity materials from THz to optics
- dielectric metamaterials
- hyperbolic metamaterials
- metasurfaces
- photonic topological insulators and their applications
- plasmonics - fundamentals and applications
- quantum plasmonics
- surface phonon polaritons
- plasmonics for energy conversion
- nanomagnets and magnetic field of light.

The Prague conference provides a meeting place for university researchers and industry professionals worldwide, beyond the Middle and East European region. Invited talks will be delivered by world's top experts in the field of metamaterials.

We cordially invite candidates interested in organization of sessions on recent developments in fabrication technologies, characterization methods and theoretical approaches to artificial electromagnetic materials.

Nonlinear Optics and Applications (EOO102)

Conference Chairs: **Mario Bertolotti**, Univ. degli Studi di Roma La Sapienza (Italy); **Joseph W. Haus**, Univ. of Dayton (United States); **Alexei M. Zheltikov**, Lomonosov Moscow State Univ. (Russian Federation)

Programme Committee: **Javier Aizpurua**, Centro de Fisica de Materiales (Spain); **Bruno Crosignani**, Univ. dell'Aquila (Italy); **Reinhard Kienberger**, Max-Planck-Institut für Quantenoptik (Germany); **Yuri S. Kivshar**, The Australian National Univ. (Australia); **Jan Perina**, Palacky Univ. (Czech Republic); **Mark I. Stockman**, Georgia State Univ. (United States); **Anatoly V. Zayats**, King's College London (United Kingdom)

This conference focuses on the most recent advances in nonlinear optics and its applications.

The objective is to update the research and applications in the field providing a forum for discussion and interaction to all people working in the area or interested to the new results.

Papers describing advances in every aspect of nonlinear optics and its applications particularly, but not limited, within the following areas are welcome:

- nonlinear, ultrafast, and quantum plasmonics
- nonlinear effects in non-homogeneous and nanoscale structures
- organic and inorganic nonlinear materials
- special nonlinear sources (parametric, up- and down-conversion, single photons) from X-rays to Terahertz
- quantum optics in nonlinear processes
- nonlinear devices for applications
- nonlinear imaging systems and applications
- novel nonlinear materials, including plasmonic and engineered structures
- nonlinear spectroscopy and microscopy
- ultrafast nonlinear optics
- high-field nonlinear optics
- modeling and simulations of nonlinear processes.

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Photon Counting Applications (EOO103)

Conference Chairs: **Ivan Prochazka**, Czech Technical Univ. in Prague (Czech Republic); **Roman Sobolewski**, Univ. of Rochester (United States); **Ralph B. James**, Savannah River National Lab. (United States)

Programme Committee: **Josef Blazej**, Czech Technical Univ. in Prague (Czech Republic); **Ulrich Schreiber**, Technische Univ. München (Germany); **Valery Zwiller**, KTH Royal Institute of Technology (Sweden)

Photon counting represents the ultimate level of sensitivity in optical measurements. The feasibility of individual photon detection has opened a broad spectrum of new applications in both research and industry now.

The fast emerging types of solid state photon detectors are providing simple, cheap and rugged tools to register and time tag photons. Superconducting photon detectors, either in the form of an ultrathin superconducting nano-stripe or a transition-edge sensor, are presently the highest performance devices, especially in the near-infrared optical spectrum. These devices are routinely used in quantum information experiments. They exhibit high quantum efficiency, MHz counting rate, and very low jitter, and can be implemented as photon-number and/or photon-energy resolving devices. Avalanche photodiodes specifically designed for single photon counting have been developed on the basis of various materials during the last 30 years. They have been tailored for numerous applications in optical sensors, quantum cryptography, optical ranging and Lidar, time resolved spectroscopy, laser-induced fluorescence, astronomy and optical time transfer, to name just a few. Finally, there is a fast growing area of photon counters based on various nanostructures and nanodevices, as well as high energy radiation photon detectors for nonproliferation, security and medical uses. The conference will gather an audience from the contributing research community active in the academic, industrial, space related, physics and research fields.

The conference program will consist of oral and poster presentations on topics that include, but are not limited to:

- new photon counting detectors, both semiconducting and superconducting
- time correlated photon counting advances
- photon number resolving detection
- laser ranging and laser time transfer
- photon counting devices in astronomy
- laser-induced fluorescence
- single molecule detection
- optical time domain reflectometry
- optical sensors
- high-energy radiation photon detectors
- imaging applications using multipixel photon detectors
- new and emerging applications of photon counting.

Quantum Optics and Quantum Information Transfer and Processing (EOO104)

Conference Chairs: **Konrad Banaszek**, Univ. of Warsaw (Poland); **Christine Silberhorn**, Univ. Paderborn (Germany)

Programme Committee: **Ulrik Lund Andersen**, Technical Univ. of Denmark (Denmark); **Marco Bellini**, Istituto Nazionale di Ottica (Italy); **Nicolas J. Cerf**, Univ. Libre de Bruxelles (Belgium); **Miloslav Dusek**, Palacký Univ. Olomouc (Czech Republic); **Jens S. Eisert**, Freie Univ. Berlin (Germany); **Alexander I. Lvovsky**, Univ. of Calgary (Canada); **Jeremy L. O'Brien**, Univ. of Bristol (United Kingdom); **Fabio Sciarrino**, Univ. degli Studi di Roma La Sapienza (Italy); **Andrew J. Shields**, Toshiba Research Europe Ltd. (United Kingdom); **Juan P. Torres**, ICFO - Institut de Ciències Fotòniques (Spain)

This conference is designed to bring together leading scientists in the field of quantum optics, quantum information processing, and quantum communication. It will offer an updated review of recent activities both in theoretical and experimental research.

The conference programme will consist of oral and poster presentations on the following topics that include, but are not limited to:

- quantum information theory and experiments
- quantum cryptography and communication
- quantum memories
- fundamental aspects of quantum optics
- quantum entanglement and its applications
- continuous variable quantum information processing
- noiseless quantum amplifiers and their applications
- neutron, atom and molecular quantum optics
- generation and characterization of quantum states
- quantum computing and simulations
- decoherence and open quantum systems.

Optical Sensors (EOO105)

Conference Chairs: **Francesco Baldini**, Istituto di Fisica Applicata Nello Carrara (Italy); **Jiri Homola**, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); **Robert A. Lieberman**, Lumoptix, LLC (United States)

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Over the last twenty years optical sensors have been extensively researched in laboratories all over the world, and numerous sensor technologies have found applications in significant fields such as environmental monitoring, healthcare, food safety, and security. This conference will bring together researchers and students, as well as developers and users of optical sensor with the aim to discuss the latest developments and emerging trends in optical sensing as well as current and future applications of optical sensors. The conference is concerned with all types of optical sensors and all aspects of optical sensing. The conference programme will consist of oral and poster presentations on topics that include, but are not limited to:

- novel concepts in optical sensing
- components and data processing methods for optical sensors
- integrated optical sensors
- fiber optic sensors
- optical sensor networks and distributed sensors
- optical chemical sensors and biosensors.

Micro-structured and Specialty Optical Fibres (EOO106)

Conference Chairs: **Kyriacos Kalli**, Cyprus Univ. of Technology (Cyprus); **Jiri Kanka**, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); **Alexis Mendez**, MCH Engineering LLC (United States); **Pavel Peterka**, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic)

Programme Committee: **Jean-Luc Adam**, Univ. de Rennes 1 (France); **John Ballato**, Clemson Univ. (United States); **Ole Bang**, DTU Fotonik (Denmark); **Hartmut Bartelt**, Institut für Photonische Technologien e.V. (Germany); **Aurélien Bergonzo**, Fibercore Ltd. (United Kingdom); **Neil G. R. Broderick**, The Univ. of Auckland (New Zealand); **Benjamin J. Eggleton**, The Univ. of Sydney (Australia); **Christopher Emslie**, Fibercore Ltd. (United Kingdom); **Sebastien Fevrier**, XLIM Institut de Recherche (France); **Karl-Friedrich Klein**, Technische Hochschule Mittelhessen (Germany); **Jonathan C. Knight**, Univ. of Bath (United Kingdom); **Michael Komodromos**, Frederick Univ. (Cyprus); **Hanne Ludvigsen**, Aalto Univ. School of Science and Technology (Finland); **Walter Margulis**, Acreo Swedish ICT AB (Sweden); **Saeed Rehman**, Fibertronix AB (Sweden); **Valerio Romano**, Berner Fachhochschule Technik und Informatik (Switzerland); **Kay Schuster**, Institut für Photonische Technologien e.V. (Germany); **Wacław Urbanczyk**, Wrocław Univ. of Technology (Poland); **David J. Webb**, Aston Univ. (United Kingdom); **Alexei M. Zheltikov**, Lomonosov Moscow State Univ. (Russian Federation)

Specialised optical fibres have become essential optical components, designed to control and manipulate light guided within an optical network, enabling selective confinement, routing, dispersion or filtering to occur directly in the optical domain. Specialised optical fibres can be broadly classified as solid step or gradient index types, liquid core fibres and as photonic crystal or microstructure designs. In the former case, selective material doping of the fibres can afford unique properties that allow for optical amplification or photosensitivity. In the latter case, photonic crystal fibre allows for photon propagation in the most intricate of ways with great flexibility; we have far more control over the properties of photonic crystals than we do over the electronic properties of semiconductors. There are three key features that define the development of a specialised fibre i) the composition of the host material, ii) the waveguide design and iii) the use of specialised coatings.

This conference aims to provide a forum for scientists and engineers-involved with the modelling, design, fabrication, device integration, and application of PCFs and specialty optical fibres-to present and share their latest research and findings. This conference will expand on the existing innovations that relate to microstructure and specialty optical fibres, detailing progress in the areas of fibre manufacture, devices, and applications that target the fields of optical communications, sensing and spectroscopy; and incorporating modelling of novel fibre geometries.

The conference program will consist of both oral and poster presentations. Papers are solicited on, but not limited to, the following topics:

- **Materials, Processes and Fabrication Advances**

Advances in speciality and microstructure fibre manufacture based on, silica, chalcogenide and multi-component glasses, rare-earth doped fibres, single crystal material fibre and polymer optical fibres, as well as new and advanced coating materials.

- **Theory and Modeling**

Modelling and simulation of linear and nonlinear characteristics of novel optical fibres, including modal analysis, birefringence, polarisation and dispersion properties, confinement and bending losses, evanescent coupling in multi-core fibre and fibre tapers.

- **Test & Characterisation Methods**

Characterisation of optical fibres, e.g. measurements of fibre geometry, birefringence, dispersion, non-linearity and distributed measurements

- **Optical Components, Sensors and Devices**

Speciality and microstructure fibre-based devices and their applications cover a broad spectrum of research areas that can include:

- Supercontinuum generation, wavelength conversion, fibre lasers and amplification, ultra-high power and ultra-short pulse delivery, optical clocks, pulse shaping, dispersion compensation, micro fluidic devices, liquid crystal fibres, and optical transport of microparticles.
- Optical sensors, e.g. chemical and biosensors, vectorial (multi-core structures) and birefringent sensors (temperature and pressure), Bragg and long period grating sensors in specialised fibres.
- Near-field microscopy, spectroscopy of gases and liquids.

We also encourage papers on hot topics and fields of commercial interest such as “Optical Nanowires and Sub-wavelength Diameter Fibres”, “Mid-IR and Infrared Fibres”, “Specialty Fibres for Bio and Chemical Sensing”, “Fibres for Harsh Environments”, “Fibres for use in the Aerospace Industry”, “Fibres for Oil and Gas Applications”, and “Optical Fibres in Renewal Energy Applications”.

IMPORTANT DATES

Abstracts Due:

24 OCTOBER 2016

Author Notification:

20 JANUARY 2017

The contact author will be notified of abstract acceptance by email.

Manuscripts Due:

27 MARCH 2017

PLEASE NOTE: Submissions imply the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a manuscript for publication in the conference proceedings in the SPIE Digital Library.

Holography: Advances and Modern Trends (EOO107)

Conference Chairs: **Miroslav Hrabovský**, Palacký Univ. Olomouc (Czech Republic); **John T. Sheridan**, Univ. College Dublin (Ireland); **Antonio Fimia**, Univ. Miguel Hernández de Elche (Spain)

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A new era in Holography opened in 1961, when Leith and Upatnieks described the use of the off-axis reference beam to capture--on a single piece of photographic film--the complete record of the light wave, resulting for the first time in holographic images of excellent quality. What is less well appreciated is that by 1967 Goodman and Lawrence had demonstrated a digital holographic system. Significantly 2017 marks the 90th anniversary of the births in 1927 of both Leith (March 12th) and Denisjuk (July 27th). Today, holography in its many forms is not only alive but is thriving. It has found widespread applications throughout all fields of science and technology. While some initial expectations have not been realized, an increasing number of other applications have been discovered which have brought real practical benefits to mankind.

This conference will highlight contemporary techniques of holographic recording and replay, including digital holography, holographic materials, switchable devices, computer-generated holograms, optical information processing, security, diffractive optics (Holographic Optical Elements), metrology and the interferometric fabrication of

photonic crystals. We intend to provide a platform which also allows those in closely related areas, e.g. involving phase retrieval algorithms, quantitative phase microscopy, sensing, compression, data storage and 3D imaging and displays (art holography and Augmented/Mixed/Virtual Reality), to share ideas and concepts.

The scope of the conference will not be limited to the visible light, it will also take into account other parts of the electromagnetic spectrum and indeed the emerging area of matter waves, e.g. holographic neutron optics. The conference will deal with issue of identifying and using appropriate recording media and processing methods, essential to the success of holographic applications. All media currently in use, including commercial and newly developed materials, will be discussed.

While all aspects of holography (academic and commercial) are of interest we strongly encourage submissions dealing with novel application and the engineering aspects of holography. This conference is dedicated to bringing together a multidisciplinary and international mixture of research

professionals, developers and users of holographic techniques, devices and systems including students and those in product development and senior management positions.

Topics of particular interest include, but are not limited to:

- advances in holographic techniques (materials, algorithms, devices and systems)
- holographic interference techniques for fabrication and metrology
- digital holography: the capture, transmission, processing and storage of holograms
- computer generated holograms and diffractive optics: modelling and analysis
- digital processing of holograms and interferometric data
- holography in nanotechnology
- novel materials and their characterization methods for holographic applications
- real-time and active holographic recording (modelling, materials and processes)
- dynamically switchable holograms (implementations and applications)
- security holography
- holographic 3D imaging, microscopy, displays and wearables (Internet of Things, IoT)
- elements and systems used for the holographic storage of digital information
- holographic applications for non-electromagnetic waves.

Relativistic Plasma Waves and Particle Beams as Coherent and Incoherent Radiation Sources (EOO108)

Conference Chair: **Dino A. Jaroszynski**, Univ. of Strathclyde (United Kingdom)

Programme Committee: **Christoph H. Keitel**, Max-Planck-Institut für Kernphysik (Germany); **Alexander Pukhov**, Heinrich-Heine-Univ. Düsseldorf (Germany); **Antoine Rousse**, Ecole Nationale Supérieure de Techniques Avancées (France); **Zheng-Ming Sheng**, Shanghai Jiao Tong Univ. (China); **Luis O. Silva**, Univ. Técnica de Lisboa (Portugal); **Toshiki Tajima**, Japan Atomic Energy Research Institute (Japan), Univ. of California Irvine (United States); **Mark Wiggins**, Univ. of Strathclyde (United Kingdom); **Victor Zamfir**, Horia Hulubei National Institute of Physics and Nuclear Engineering (Romania); **Matthew Zepf**, Queen's Univ. Belfast (United Kingdom)

Relativistic plasma waves driven by high-power ultra-short pulse lasers are providing new opportunities for developing ultra-compact coherent and incoherent radiation sources, which span a broad spectral range from millimetre wavelengths to X-rays and even beyond to gamma rays.

Laser and beam driven plasma wakefield accelerators have acceleration gradients more than a thousand times that of conventional accelerators. These ultra-compact accelerators are now being developed into compact synchrotron sources, free-electron lasers and gamma ray sources. The radial electrostatic forces of plasma waves, and the availability of counter-propagating laser beams, provides a unique opportunity to develop ultra-short period wigglers, thus making possible sources of radiation with photon energies extending to hard X-rays and gamma rays, and of unprecedented brilliance and short pulse duration. Transition, Cherenkov and diffraction radiation from the femtosecond duration electron bunches is opening up the possibility of single cycle radiation fields with unprecedented intensities.

Furthermore, scattering laser radiation from relativistic plasma waves produces high intensity coherent beams, with high efficiency, that produce high intensity attosecond duration coherent XUV radiation. Plasma waves are also being used to amplify light through Compton and Raman backscattering, which may provide a new route to producing very high power parametric amplifiers.

Radiation arising from laser-plasma interactions is extending the range of applications of electromagnetic radiation into domains of science that are not usually associated with lasers, which include probing the nucleus, QED and following the evolution of matter on its natural time and space scales.

If these relativistic plasma based sources are developed to maturity they could transform the way science is done - by making them widely available and delivering intense photon beams with unique properties.

Papers are solicited on (not exclusively) the following areas:

- synchrotron sources and free-electron lasers based on laser and beam driven plasma wakefield accelerators
- betatron sources based on plasma accelerators and plasma wigglers
- scattering from relativistic plasma waves and ionisation fronts as coherent sources
- parametric amplification using plasma waves
- terahertz and infra-red sources based on laser-plasma interactions
- applications of laser-plasma radiation sources
- high-field applications of intense laser fields.

EUV and X-ray Optics: Synergy between Laboratory and Space (EOO109)

Conference Chairs: **René Hudec**, Astronomical Institute of the ASCR, v.v.i. (Czech Republic), Czech Technical Univ. in Prague (Czech Republic); **Ladislav Pina**, Czech Technical Univ. in Prague (Czech Republic)

Programme Committee: **Webster Cash**, Univ. of Colorado at Boulder (United States); **Henryk Fiedorowicz**, Military Univ. of Technology (Poland); **René Hudec**, Czech Technical Univ. in Prague (Czech Republic); **Ali M. Khounsary**, X-ray Optics, Inc. (United States); **Randall L. McEntaffer**, The Univ. of Iowa (United States); **Stephen L. O'Dell**, NASA Marshall Space Flight Ctr. (United States); **Giovanni Pareschi**, INAF - Osservatorio Astronomico di Brera (Italy); **Ladislav Pina**, Czech Technical Univ. in Prague (Czech Republic); **Yuriy Ya Platonov**, Rigaku Innovative Technologies, Inc. (United States); **Paul B. Reid**, Harvard-Smithsonian Ctr. for Astrophysics (United States); **Bedřich Rus**, ELI Beamlines (Czech Republic), Institute of Physics of the ASCR, v.v.i. (Czech Republic); **Anatoly Snigirev**, ESRF - The European Synchrotron (France); **Peter Z. Takacs**, Brookhaven National Lab. (United States); **Melville P. Ulmer**, Northwestern Univ. (United States); **David L. Windt**, Reflective X-Ray Optics LLC (United States); **William W. Zhang**, NASA Goddard Space Flight Ctr. (United States)

Extreme Ultraviolet (EUV) and X-ray Optics have many applications in many areas of recent science and technology ranging from space (astronomy) to the laboratory, and numerous alternative designs of these optics have been suggested and implemented. The apertures range from micromirrors of less than 1 mm to a few meters in the case of space applications. Novel schemes of source-optics systems and experimental results show higher brightness and better imaging or diagnostic capabilities.

The purpose of this conference is to bring together scientists, manufacturers, optical and mechanical engineers, designers and users of EUV and X-ray optics, in order to exchange ideas, highlight possible problems and challenges linked to their use and to seek ways to overcome the current limitations.

New or potential users of EUV and X-ray optics will benefit from clear reviews by experienced specialists discussing the advantages and disadvantages of these advanced optical arrangements. An important part of the meeting will be dedicated to the use of adaptive EUV and X-ray optics: how to improve their performances, and reviewing new results and recent advances.

An additional goal of the conference is to bring together EUV and X-ray optical scientists specialising in both terrestrial and space applications, with benefits for both sides. Many application areas of EUV and X-ray optics require novel technologies and new approaches in order to achieve better imaging quality, and some approaches designed and developed originally for space optics should also be applicable in laboratory optics, and vice versa.

Presentations discussing technologies for future space X-ray astronomy missions are encouraged. These missions require development of mostly innovative technologies; the possibilities, the results obtained so far and details of new ideas are suitable topics for discussion. The recent situation in the field strongly demonstrates the urgent need of novel, cost effective approaches and solutions.

It is clear that the requirements of future large X-ray astronomy missions are so demanding that they need a truly interdisciplinary approach in a wide international collaboration. The technologies will include X-ray optics based on Si wafers and advanced glass forming for precise X-ray optics, but also other possibilities, as well as related advanced metrology, measurement and testing. These technologies can also be used for laboratory EUV and X-ray optics, and presentations based on such applications will be welcome. In addition, discussions of new projects and results achieved in synchrotron and laboratory EUV and X-ray optics are requested, including considerations of how related fields can benefit from these achievements.

Both the laboratory and space EUV and X-ray communities have begun efforts in the development of active / adaptive optics with the aim of achieving superfine angular or spatial resolutions.

(EOO109 continued next page)

EUV and X-ray Optics: Synergy between Laboratory and Space (*EOO109 Continued*)

This conference will also cover all aspects, development and use of such optical techniques. Researchers (including industrial partners) working in the following aspects of EUV and X-ray optics are encouraged to submit papers for consideration:

- overviews of EUV and X-ray optics technologies for laboratory and space
- overviews of applications of EUV and X-ray optics
- reflective, diffractive and refractive EUV and X-ray optics
- novel concepts, designs and technologies for EUV and X-ray optics
- theory, modelling and simulation of EUV and X-ray optics
- integrated devices and systems (sources, optics, detectors)
- devices and fabrication approaches to achieve improved quality EUV and X-ray optics
- active / adaptive EUV and X-ray optics
- multilayer X-ray optics
- optics for hard X-rays
- electronics and control of EUV and X-ray optical devices and systems
- measurement, characterization and assessment of EUV and X-ray optical devices and systems, including reliability
- new classes of experiments and improvements to existing techniques
- scientific results obtained with EUV and X-ray optics.

The conference organisers hope to receive contributions from experienced groups from important world facilities and institutes (including industrial partners). The aim is to focus on the leading current EUV and X-ray optics technologies, and those with the potential to be realizable in the future.

IMPORTANT DATES

Abstracts Due:

24 OCTOBER 2016

Author Notification:

20 JANUARY 2017

The contact author will be notified of abstract acceptance by email.

Manuscripts Due:

27 MARCH 2017

PLEASE NOTE: Submissions imply the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a manuscript for publication in the conference proceedings in the SPIE Digital Library.

Damage to VUV, EUV, and X-ray Optics (XDam6)

(EOO110)

Conference Chairs: **Libor Juha**, Institute of Physics of the ASCR, v.v.i. (Czech Republic); **Saša Bajt**, Deutsches Elektronen-Synchrotron (Germany); **Regina Soufli**, Lawrence Livermore National Lab. (United States)

Programme Committee: **Fred Bijkerk**, Univ. Twente (Netherlands); **Jaromír Chalupský**, Institute of Physics of the ASCR, v.v.i. (Czech Republic); **Henryk Fiedorowicz**, Military Univ. of Technology (Poland); **Jacek Krzywinski**, SLAC National Accelerator Lab. (United States); **Klaus Mann**, Laser-Lab. Göttingen e.V. (Germany); **Tomáš Mocek**, Institute of Physics of the ASCR, v.v.i. (Czech Republic); **Ladislav Pina**, Czech Technical Univ. in Prague (Czech Republic); **Jorge J. Rocca**, Colorado State Univ. (United States); **Michael Störmer**, Helmholtz-Zentrum Geesthacht (Germany); **Philippe Zeitoun**, Ecole Nationale Supérieure de Techniques Avancées (France); **Beata Ziaja-Motyka**, Deutsches Elektronen-Synchrotron (Germany)

The conference will be devoted to the study of damage to optical elements irradiated by high average and/or high peak fluxes of radiation in the VUV, EUV, and X-ray spectral regions. The following main subjects will be covered by the conference:

- observed damage to optics exposed to synchrotron radiation, high-order harmonics, discharge- and laser-plasma-based EUV/X-ray sources, and X-ray lasers, including free-electron lasers (FELs)
- behavior of optical materials irradiated by intense VUV radiation
- response of thin film coatings, multilayer structures, and bulk materials to intense short-wavelength radiation
- * carbon contamination on surfaces of EUV/X-ray optical elements
- * damage to samples, detectors and imaging systems induced by intense short-wavelength radiation
- advanced diagnostics for investigation of damage formation and development
- analytical techniques and procedures for detailed characterization of the damaged regions of materials
- computer simulation of damage processes at microscopic and macroscopic levels
- calculations of damage limits for optical components used with intense short-wavelength radiation sources
- strategies for the design of optical elements to avoid or reduce VUV, EUV and X-ray radiation damage
- recovery strategies (repair or refurbishment) of optical elements damaged due to VUV, EUV and X-ray exposure.

Special attention will be paid to the practical importance of these subjects to VUV microstructuring and lithography, EUV nanolithography, focusing of incoherent emission from plasma-based point sources, and manipulation of radiation from new generation EUV/X-ray lasers and other ultra-intense sources, such as FELs, (e.g., LCLS, SACLA, FLASH, SCSS, FERMI, SXFEL, PAL-XFEL, SwissFEL and European XFEL) and advanced laser-driven sources (e.g., LASERIX and ELI Beamlines).

X-Ray Free-Electron Lasers: Advances in Source Development and Instrumentation (EOO111)

Conference Chairs: **Thomas Tschentscher**, European XFEL GmbH (Germany);
Luc Patthey, Paul Scherrer Institut (Switzerland)

Free-electron laser (FEL) user facilities for the short-wavelength regime from vacuum-ultraviolet to hard x-rays are operational for more than a decade now. In Europe FLASH (Hamburg), FERMI (Trieste), SwissFEL (Villigen; from 2017) and European XFEL (Hamburg; from 2017) and world-wide LCLS (Menlo Park), SACLA (Harima) and PAL-XFEL (Pohang; from 2017) are the facilities to be listed here. X-ray FEL radiation provides exquisite x-ray beam properties in terms of pulse duration, coherence, pulse energy and average flux. X-ray FEL radiation has already been applied to a large number of high profile scientific applications reaching from physics, over chemistry, material and earth sciences to biology.

Many applications used the new FEL sources, x-ray techniques and instrumentation developed for and at the FEL facilities. New science applications generate additional requirements for the further development of sources and instrumentation. Current new developments include special FEL schemes or dedicated end-stations for specific experiments. Another development concerns the provision of high average brightness x-ray beams at FLASH, European XFEL and LCLS-II. In the focus of this conference stand the development of FEL sources and instrumentation for x-ray FEL experiments. Contributions shall address requirements for current and new developments driven by present and future scientific applications and new instrumentation developments in the areas of electron accelerator operation and diagnostics, FEL schemes, x-ray optics, diagnostics and beam transport, end-stations for FEL experiments, ancillary instrumentation such as sample environment (injection, refreshment, temperature, pressure, etc.), detectors and laser schemes for sample excitation.

Papers covering emerging needs, progress reports, and topical reviews related to the following and related topics are solicited:

- status of planned and operational VUV, EUV, soft x-ray and x-ray FEL facilities
- science applications defining requirements to FEL radiation properties and instrumentation
- advanced FEL radiation schemes (e.g. seeding, variable polarization, two-colour)
- diagnostics of electron beam and FEL radiation
- instrumentation for femtosecond characterization in pump-probe experiments
- instrumentation for spatial characterization of intense x-ray pulses in FEL experiments
- x-ray optics and beam transport issues including propagation of coherent x-ray FEL radiation
- end-stations for FEL experiments
- advanced instrumentation for FEL experiments in the areas of sample environment, detectors and laser schemes
- simulation of FEL experiments.

SPECIAL SESSIONS

The following topics will be jointly organised with the conference on X-Ray Lasers and Coherent X-Ray Sources: Development and Applications (EOO117):

- high brightness and ultrashort x-ray and EUV sources
 - scientific applications of laser- and accelerator-based x-ray sources
 - temporal, spatial and coherence diagnostics of ultrashort x-ray pulses.
-

High-Power, High-Energy, and High-Intensity Laser Technology (EOO112)

Conference Chair: **Joachim Hein**, Friedrich-Schiller-Univ. Jena (Germany)

Programme Committee: **Jean-Christophe Francis Chanteloup**, Ecole Polytechnique (France); **Leonida A. Gizzi**, Consiglio Nazionale delle Ricerche (Italy); **Marc Hanna**, Lab. Charles Fabry (France); **Jens Limpert**, Friedrich-Schiller-Univ. Jena (Germany); **Antonio Lucianetti**, Institute of Physics of the ASCR, v.v.i. (Czech Republic); **Paul D. Mason**, Rutherford Appleton Lab. (United Kingdom); **Mathias Siebold**, Helmholtz-Zentrum Dresden-Rossendorf e. V. (Germany)

This conference will be dedicated to the underlying science and new developments in the field of lasers producing high-pulse energies, high-peak or average powers. Such laser systems are the emerging tools not only for material processing but more than ever for research of laser matter interaction under extreme conditions or as pump lasers for various kinds of physical processes including lasers itself. The whole wavelength range from the UV to the upcoming mid-IR is covered. Papers are especially solicited on the following topics:

- new types of lasers that can produce high power or ultrashort pulses
- high-energy DPSSL, flashlamp pumped solid state, or gas lasers
- high-power laser architectures including fiber and thin disc lasers
- mid-infrared lasers, materials and devices as well as applications
- broadband, high-energy, or high average power parametric amplification
- high-energy or high-power frequency conversion
- high-energy pulse compression
- coherent and incoherent combination of laser pulses
- laser materials and their characterization
- improvement of laser-induced damage threshold optics
- advanced cooling schemes for solid state lasers
- high power diode lasers as pump sources
- large aperture optics including gratings for pulse compression and adaptive optics
- fast laser modulators and modulators that can handle high average or high peak power.

Medical Applications of Laser-Generated Beams of Particles: Review of Progress and Strategies for the Future (EO0113)

Conference Chair: **Kenneth W. D. Ledingham**, Univ. of Strathclyde (United Kingdom)

Conference Co-Chairs: **Paul R. Bolton**, Japan Atomic Energy Agency (Japan); **Antonio Giulietti**, Consiglio Nazionale delle Ricerche (Italy); **Paul McKenna**, Univ. of Strathclyde (United Kingdom); **Klaus Spohr**, Univ. of the West of Scotland (United Kingdom)

Programme Committee: **Sergei V. Bulanov**, Japan Atomic Energy Agency (Japan); **Thomas E. Cowan**, Helmholtz-Zentrum Dresden-Rossendorf e. V. (Germany); **Wolfgang Enghardt**, Technische Univ. Dresden (Germany); **Jean-Claude Kieffer**, Institut National de la Recherche Scientifique (Canada); **Chang-Ming C. Ma**, Fox Chase Cancer Ctr. (United States); **Victor Malka**, Ecole Nationale Supérieure de Techniques Avancées (France); **Franz Pfeiffer**, Technische Univ. München (Germany); **Markus Roth**, Kiepenheuer-Institut für Sonnenphysik (Germany); **Akifumi Yogo**, Japan Atomic Energy Agency (Japan)

The past decade has seen rapid development of high power short pulse lasers from multi-TW to PW levels and the healthy pace continues to the multi-PW level. Repetition-rated PW systems are now commercially available and 10 PW systems are on the horizon. The basic mechanisms for laser-acceleration of particles in a plasma environment are understood and simulations indicate power level requirements for reaching specified bunch charge and kinetic energy. Adequately high power laser pulses can be strongly focused to generate intense beams of electrons, protons, other ions, neutrons, x-rays and other photons. For some years now laser driven particle and photon beams have been considered as candidates for a variety of future uses including medical applications. Meanwhile, ion beam radiotherapy with conventional accelerators has become well-established

A key result from the 2011 SPIE conference entitled, "Medical Applications of Laser-Generated Secondary Sources of Radiation and Particles" was progress toward establishing an international initiative for laser-acceleration applied to bio-medicine, imaging and diagnostics. The initiative aimed to promote laser-driven medical applications research that would ultimately lead to developing an international centre dedicated to pursuit of this subject matter. Discussion of this effort continued and updated progress was presented at the 2013 and 2015 SPIE conference entitled, "Medical Applications of Laser-Generated Beams of Particles III: Review of Progress Made in Recent Years".

The follow up SPIE conference in Prague in 2017 will highlight continued progress with medical applications of laser-driven secondary sources and address strategies for the future. As in the previous SPIE conferences, oral and poster presentations are solicited in the following areas of research but are not limited to:

- the development of high power lasers for proton and ion therapy
- identifying the laser parameters necessary to produce protons and ions suitable for cancer treatment
- laser-produced monochromatic x-rays for diagnostics
- inverse Compton/Thomson scattering x-ray sources and compact laser driven hybrid synchrotron sources
- laser and target technology for producing monoenergetic ion beams
- transport and focusing of laser driven ion beams
- radiobiology and cell damage studies using laser-produced proton beams
- laser-driven medical isotope production
- medical applications with laser-accelerated electron beams
- plasma simulations of laser driven secondary sources of radiation
- advances in diagnostic techniques to characterise and control laser produced ion and photon beams
- critical comparison of conventional and anticipated laser accelerators for producing secondary sources suitable for medical applications.

Laser Acceleration of Electrons, Protons, and Ions

(EOO114)

Conference Chairs: **Eric Esarey**, Lawrence Berkeley National Lab. (United States); **Carl B. Schroeder**, Lawrence Berkeley National Lab. (United States); **Florian J. Grüner**, Ludwig-Maximilians-Univ. München (Germany)

Programme Committee: **Sergei V. Bulanov**, Japan Atomic Energy Agency (Japan); **Min Chen**, Shanghai Jiao Tong Univ. (China); **Thomas E. Cowan**, Helmholtz-Zentrum Dresden-Rossendorf e. V. (Germany); **Brigitte Cros**, Univ. Paris-Sud 11 (France); **Leonida A. Gizzi**, Consiglio Nazionale delle Ricerche (Italy); **Björn Manuel Hegelich**, Los Alamos National Lab. (United States); **Simon M. Hooker**, Univ. of Oxford (United Kingdom); **Stefan Karsch**, Max-Planck-Institut für Quantenoptik (Germany); **Karl M. Krushelnick**, Univ. of Michigan (United States); **Wim Leemans**, Lawrence Berkeley National Lab. (United States); **Victor Malka**, Ecole Nationale Supérieure de Techniques Avancées (France); **Zulfikar Najmudin**, Imperial College London (United Kingdom); **Zheng-Ming Sheng**, Shanghai Jiao Tong Univ. (China); **Luis O. Silva**, Univ. Técnica de Lisboa (Portugal); **Vladimir T. Tikhonchuk**, Univ. Bordeaux 1 (France); **Antonio C. Ting**, U.S. Naval Research Lab. (United States); **Claes-Goran Wahlström**, Lund Univ. (Sweden); **Matthew Zepf**, Queen's Univ. Belfast (United Kingdom)

This conference will be dedicated to new developments on the laser acceleration of electrons, protons, and ions. This includes methods based on the interaction of intense lasers with structures and plasmas at gas and solid densities. Experiments, diagnostics, theory, and numerical modeling of laser accelerators will be discussed. Papers are solicited on the following topics:

- interaction of intense laser pulses with structures, gases, and solid targets
- generation of large amplitude plasma waves with intense laser pulses
- self-guiding and channel guiding of intense laser pulses
- intense laser-plasma instabilities
- particle acceleration with lasers
- particle injection techniques for laser accelerators
- particle beam interaction with plasmas
- particle beam quality in laser accelerators
- staging of laser accelerators
- diagnostics for laser accelerators and ultra-short particle bunches
- theoretical and numerical modeling of laser accelerators.

Research Using Extreme Light: Entering New Frontiers with Petawatt-Class Lasers (EOO115)

Conference Chairs: **Georg Korn**, Institute of Physics of the ASCR, v.v.i. (Czech Republic); **Luis O. Silva**, Univ. Técnica de Lisboa (Portugal)

Programme Committee: **Sergei V. Bulanov**, Japan Atomic Energy Agency (Japan); **Dimitrios Charalambidis**, Foundation for Research and Technology-Hellas (Greece); **Cristina Hernandez-Gomez**, Rutherford Appleton Lab. (United Kingdom); **Mattias Marklund**, Umeå Univ. (Sweden); **Matthew Zepf**, Queen's Univ. Belfast (United Kingdom); **Victor Zamfir**, Horia Hulubei National Institute of Physics and Nuclear Engineering (Romania)

This conference will be dedicated to the new developments in intense laser-matter and laser vacuum interactions and Petawatt photonics, triggered and motivated by the Extreme Light Infrastructure (ELI), represented by its three pillars, ELI Beamlines, ELI ALPS and ELI NP thus opening a gateway to new regimes in physics. The opportunities and challenges associated with these regimes, from a technical, experimental, computational and theoretical point of view will be covered, with a focus on the enabling technologies for ELI and the science challenges associated with ultra-high laser intensities and with the unique secondary sources to be produced e.g. ultra-short pulses of high energy photons, electrons and ions.

Papers are solicited on the following topics:

- relativistic and ultra-relativistic nonlinear optics
- physics and new applications using ultra-intense lasers
- ultra-intense laser sources and related techniques for their characterization
- nuclear physics with ultra-intense lasers and laser-produced high-energy photons and ions
- laser acceleration of particles towards the energy frontier
- from attosecond to zeptosecond science at high Intensities including attosecond sources and their applications
- research and anticipated applications with ELI-class secondary sources of photons and particles also in other fields
- plasma physics including laboratory astrophysics using high-intensity laser pulses, WDM generation and diagnostics
- ultra-high field science including laser vacuum interaction
- QED at ultra-intense fields
- theory and simulations: going from relativistic to ultra-relativistic regimes of laser-matter and laser-vacuum interaction and beyond.

Integrated Optics: Physics and Simulations (EO0116)

Conference Chairs: **Pavel Cheben**, National Research Council Canada (Canada); **Jiri Kanka**, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); **Iñigo Molina-Fernández**, Univ. de Málaga (Spain)

Programme Committee: **Roel G. Baets**, Univ. Gent (Belgium); **Trevor Mark Benson**, The Univ. of Nottingham (United Kingdom); **Hung-Chun Chang**, National Taiwan Univ. (Taiwan); **Christopher R. Doerr**, Acacia Communications Inc. (United States); **Romuald Houdré**, Ecole Polytechnique Fédérale de Lausanne (Switzerland); **Raman Kashyap**, Ecole Polytechnique de Montréal (Canada); **Christophe Kazmierski**, III-V Lab. (France); **Philippe Lalanne**, Institut d'Optique Graduate School (France); **Xaveer J. M. Leijtens**, Technische Univ. Eindhoven (Netherlands); **Goran Z. Mashanovich**, Univ. of Southampton (United Kingdom); **Andrea I. Melloni**, Politecnico di Milano (Italy); **Jarmila Müllerová**, Univ. of Žilina (Slovakia); **Martin Schell**, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany); **Laurent Vivien**, Institut d'Électronique Fondamentale (France); **Lech Wosinski**, KTH Royal Institute of Technology (Sweden); **Dan-Xia Xu**, National Research Council Canada (Canada)

The conference focuses on the physics, design and simulation of integrated optical structures, devices and systems. This conference aims to provide an international forum for researchers from academia, industry and government laboratories for sharing the latest advancements relevant to integrated optics physics, design and simulations. Theoretical and experimental papers are solicited that report progress in the following and related topics:

- optical waveguide theory and modeling
- simulation and design of optoelectronic devices
- waveguide photonic bandgap engineering and microcavities
- passive and active waveguide devices
- diffractive and subwavelength structures in integrated optics
- integrated optical circuits for datacom, WDM networks and coherent communications
- waveguide based light sources, photodetectors, modulators, amplifiers, wavelength converters, switches, couplers, resonators, filters and subsystems
- planar waveguide devices for aerospace applications and defence
- optical interconnects
- photonic design automation, manufacturing, and verification tools
- novel algorithms and photonic CAD software for photonics and integration with electronics.

IMPORTANT DATES

Abstracts Due:

24 OCTOBER 2016

Author Notification:

20 JANUARY 2017

The contact author will be notified of abstract acceptance by email.

Manuscripts Due:

27 MARCH 2017

PLEASE NOTE: Submissions imply the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a manuscript for publication in the conference proceedings in the SPIE Digital Library.

X-Ray Lasers and Coherent X-Ray Sources: Development and Applications (EOO117)

Conference Chairs: **Annie Klisnick**, CNRS, Univ. Paris-Sud (France); **Carmen Menoni**, Colorado State Univ. (USA)

Programme Committee: **Jens Biegert**, ICFO - Institut de Ciències Fotòniques (Spain); **Hiroyuki Daido**, Japan Atomic Energy Agency (Japan); **Yasin Ekinici**, Paul Scherrer Institut (Switzerland); **Sylvie Jacquemot**, Ecole Polytechnique (France); **Do-Kyeong Ko**, Gwangju Institute of Science and Technology (Korea, Republic of); **Michaela Kozlova**, Institute of Physics of the ASCR (Czech Republic); **Ciaran L. S. Lewis**, Queen's Univ. Belfast (United Kingdom); **Stefan P. Moeller**, SLAC National Accelerator Lab. (USA); **Peter V. Nickles**, Gwangju Institute of Science and Technology (Korea, Republic of); **Joseph Nilsen**, Lawrence Livermore National Lab. (USA); **Jorge J. Rocca**, Colorado State Univ. (USA); **Regina Soufli**, Lawrence Livermore National Lab. (USA); **Szymon Suckewer**, Princeton Univ. (USA); **Gregory J. Tallents**, The Univ. of York (UK); **Alexander Vladimirovich Vinogradov**, P.N. Lebedev Physical Institute (Russian Federation); **Marco Zangrando**, Sincrotrone Trieste (Italy)

This conference is aimed at providing a forum to a broad range of communities interested in new developments and applications of intense, coherent laboratory-scale x-ray sources. Recent experimental and theoretical results in the generation of plasma-based x-ray lasers, high-order harmonics and laser-driven X-ray sources will be reported. Innovative scientific applications of these x-ray sources in physical, chemical or life sciences will be presented. Progress in the implementation of user beamlines and related instrumentation will be discussed, with attention to new advances in x-ray optics, beam metrology, as well as other supporting technologies.

Papers are solicited on the following topics:

- laser- and discharge- pumped plasma-based x-ray lasers
- XUV and x-ray high-order harmonics sources
- X-ray sources driven by ultrashort laser pulses
- injection-seeding of x-ray laser amplifiers
- high-repetition-rate x-ray lasers
- modeling and numerical simulations for x-ray lasers and other x-ray sources
- new concepts for x-ray laser schemes
- applications to high-resolution microscopy, coherent imaging, interferometry, nanopatterning, laser ablation, laser matter interactions
- applications to ultrafast dynamics of condensed and dilute matter, X-ray produced plasmas, high-field x-ray science, matter under extreme conditions
- characterization of temporal and spatial properties of x-ray beams
- x-ray optics for x-ray lasers and coherent x-ray sources.

SPECIAL SESSIONS

The following topics will be jointly organised with the conference on X-Ray Free-Electron Lasers: Advances in Source Development and Instrumentation (EOO111):

- high brightness and ultrashort x-ray and EUV sources
 - scientific applications of laser- and accelerator-based X-ray sources
 - temporal, spatial and coherence diagnostics of ultrashort x-ray pulses.
-

Technology and Applications of Intense, High Average Power Lasers Workshop (EOO118)

Chairs: **Tomáš Mocek**, HiLASE Centre and Institute of Physics CAS, v.v.i. (Czech Republic);
Ric Allott, The Association of Industrial Laser Users (AILU) (United Kingdom);
Chris Edwards, Central Laser Facility, STFC (United Kingdom)

High intensity, high efficiency pulsed lasers operating in the kW regime at repetition rates up to 100 kHz are coming on-line to scientific and industrial users for proof-of-principle studies in a rapidly expanding applications arena. Within the next few years, the entry level and operating costs will decrease whilst reliability and ease of use will increase to the point at which systems could be deployed in an industrial environment.

This workshop will discuss recent advances in the laser technology, emerging applications, enablers, the performance and economic system requirements necessary to exploit that technology within industry and the new scientific opportunities available from facilities offering this new capability to users.

A visit to the recently inaugurated HiLASE Laser Centre in nearby Dolní Brezany will be available to registered delegates along with admission to the Symposium.

Submissions (oral and poster) addressing the topics discussed above are encouraged.

THE WORKSHOP IS COORDINATED AND SUPPORTED BY:

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Please look for more details online and in your e-mail in February 2017.

Go online to see the 2015 best student paper award winners.

www.spie.org/oo-awards

General Information

TECHNICAL PROGRAMME

Available January 2017

The comprehensive Advance Technical Programme for this symposium will list conferences, paper titles, and authors in order of presentation; an outline of all planned special events; and hotel and registration information. All those who submit an abstract will receive a copy.

REGISTRATION

SPIE SPIE Optics + Optoelectronics registration will be available January 2017

All participants, including invited speakers, contributed speakers, session chairs, co-chairs, and committee members, must pay a registration fee. Authors, coauthors, program committee members, and session chairs are accorded a reduced symposium registration fee.

Fee information for conferences, a registration form, and technical and general information will be available on the SPIE website in January 2017.

HOTEL INFORMATION

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REVIEW, NOTIFICATION, PROGRAMME PLACEMENT

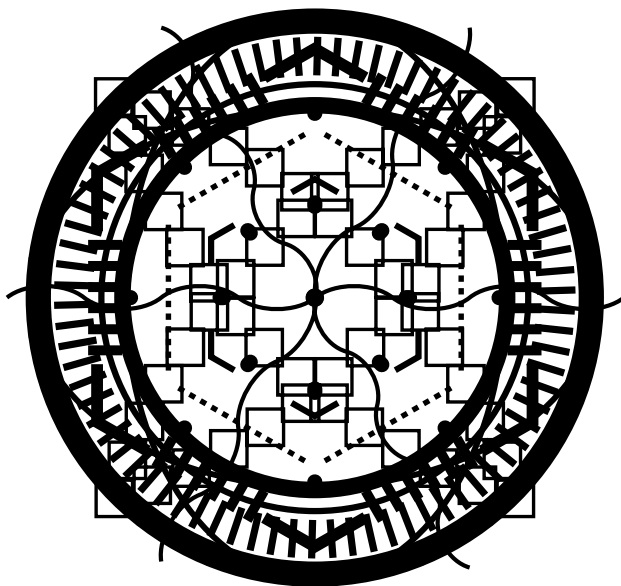
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CONFERENCE

24-27 April 2017

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CONFERENCES

- Metamaterials
- Nonlinear Optics and Applications
- Photon Counting Applications
- Quantum Optics and Quantum Information Transfer and Processing
- Optical Sensors
- Micro-structured and Specialty Optical Fibres
- Holography: Advances and Modern Trends
- Relativistic Plasma Waves and Particle Beams as Coherent and Incoherent Radiation Sources
- EUV and X-ray Optics
- Damage to VUV, EUV, and X-ray Optics
- Advances in X-ray Free-Electron Lasers
- High-Power, High-Energy, and High-Intensity Laser Technology
- Medical Applications of Laser-Generated Beams of Particles
- Laser Acceleration of Electrons, Protons and Ions
- Research Using Extreme Light: Entering New Frontiers with Petawatt-Class Lasers
- Integrated Optics
- X-Ray Lasers and Coherent X-Ray Sources
- Technology and Applications of Intense, High Average Power Lasers
- Industry Session



780
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