Photonics Europe 2018

TECHNICAL PROGRAMME

EXHIBITION GUIDE

Conferences and Courses
22–26 April 2018

Exhibition
24–25 April 2018
Strasbourg Convention & Exhibition Centre
Strasbourg, France

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THE PREMIER EUROPEAN OPTICS AND PHOTONICS R&D CONFERENCE
22–26 April 2018
Strasbourg Convention & Exhibition Centre
Strasbourg, France

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Welcome to SPIE Photonics Europe

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Hear 1,500 presentations on the latest advances—from digital optics to quantum technologies to attosecond science.

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SPIE is the international society for optics and photonics, an educational not-for-profit organization founded in 1955 to advance light-based science and technology. The Society serves nearly 264,000 constituents from approximately 166 countries, offering conferences and their published proceedings, continuing education, books, journals, and the SPIE Digital Library in support of interdisciplinary information exchange, professional networking, and patent precedent. SPIE provided more than $4 million in support of education and outreach programs in 2017.

For more information, visit www.SPIE.org.
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Photonics France

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Visit us and discover the French photonics innovations!
HOT TOPIC SESSIONS

Hot Topics I
Monday 23 April 2018 • 9:00 to 11:00
Location: Level 1, Salon Schweitzer

9:00 to 9:20
SPIE WELCOME AND AWARD PRESENTATION
Maryellen Giger
Univ of Chicago (USA)
SPIE President

AWARD PRESENTATION TO
Professor Patrick Meyrueis
In recognition of 40 years of support, SPIE would like to recognize Professor Meyrueis, of the University of Strasbourg. Professor Meyrueis organized the first SPIE meeting in Europe, and has supported the society in its efforts throughout.

City of Strasbourg Welcome

Photons in the EU
European Parliament Presentation

9:20 to 9:25
WELCOME ADDRESS
Paul Montgomery
Univ. of Strasbourg, France

9:25 TO 9:30
INTRODUCTION TO HOT TOPICS
Thierry Georges
Oxxius, France

9:30 to 10:15
FROM EINSTEIN DOUBTS TO QUANTUM BITS: A SECOND QUANTUM REVOLUTION
Alain Aspect
Lab. Charles Fabry, Institut d’Optique, France
Abstract not available at the time of publishing.
Biography: Alain Aspect is an alumnus of the École Normal Supérieure (ENS) in Cachan and the Université d’Orsay. He has held positions at the Institut d’Optique, the ENS in Yaoundé (Cameroon), ENS in Cachan, ENS/College de France, and CNRS. He is currently a professor both at the Institut d’Optique Graduate School, where he holds the Augustin Fresnel chair, and at Ecole Polytechnique, in Palaiseau. He is a member of science academies in France, the USA, Austria, Belgium, and the UK. He is the recipient of the CNRS Gold medal, the Wolf Prize in Physics, the Balzan prize on quantum information, the Niels Bohr Gold medal, the Albert Einstein medal, the Ives medal of the OSA and other awards. His research has focused on tests of Bell’s inequalities with entangled photons, wave-particle duality for single photons, laser cooling of atoms with lasers below the one-photon recoil, quantum simulation, and quantum atom optics with ultracold atoms (More details on: http://www.lcf.institutoptique.fr/Alain-Aspect-homepage).

10:15 to 11:00
PICO-PHOTONICS: WATCHING AND SENSING SINGLE MOLECULES BY CONFINING LIGHT TO THE ATOM SCALE
Jeremy J. Baumberg
NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

Coupling between plasmonic metal nano-components generates strongly red-shifted resonances combined with intense local field amplification on the nanoscale. This allows us to watch in real time individual molecules and atoms or excitons in semiconductors. We have recently explored plasmonic coupling which can be tuned dynamically, through reliable bottom-up self-assembly using a nanoparticle-on-mirror geometry (NpOM). Now we show that it is possible to confine light to below 1nm3, allowing us to see single atoms move dynamically, and examine single bonds within a molecule. We show how molecular optomechanics works, and how it provides the ability to track and watch molecules interact and react. This opens up the ability to study chemistry molecule-by-molecule and potentially to control single reaction pathways.

[1] Nature 491, 574 (2012); Revealing the quantum regime in tunnelling plasmonics,

Biography: Prof. Jeremy J. Baumberg FRS, directs a UK Nano-Photonics Centre at the University of Cambridge and has extensive experience in developing optical materials structured on the nano-scale that can be assembled in large volume. He is also Director of the Cambridge Nano Doctoral Training Centre, a key UK site for training PhD students in interdisciplinary Nano research. Strong experience with Hitachi, IBM, and his own spin-offs help him combine academic insight with industry application. With over 20000 citations, he is a leading innovator in Nano. This has led to awards of the IoP Faraday gold Medal (2017), Royal Society Rumford Medal (2014), IoP Young Medal (2013), Royal Society Mullard Prize (2005), the IoP Charles Vernon Boys Medal (2000) and the IoP Mott Lectureship (2005). He is a Fellow of the Royal Society, the Optical Society of America, the Institute of Physics, and the Institute of NanoTechnology. [see np.phy.cam.ac.uk]

11:00 to 11:30 • COFFEE BREAK
HOT TOPIC SESSIONS

Hot Topics II
Tuesday 24 April 2018 • 16:30 to 18:00
Location: Level 1, Salon Schweitzer

16:30 to 16:35
INTRODUCTION
Francis Berghmans
Vrije Univ. Brussel, Belgium

16:35 to 17:20
COHERENT COMBINATION OF FIBER AMPLIFIED ULTRAFAST LASER PULSES
Jens Limpert
Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany
In recent years intense laser pulses have found applications in various industrial and scientific areas. Significant progress has been made in scaling the energy of the pulses as well as the average power. However, different amplification schemes have been pushed to their specific limits, caused by detrimental nonlinear effects, by damage or by the occurrence of thermo-optical effects. New concepts have to be considered to address these issues and to enable new application fields. In that context, I will review the basics, achievements and newest developments of coherent combination of amplified femtosecond pulses, a concept which has already out-performed single aperture femtosecond laser systems and which allows for a scaling to unprecedented performance levels, i.e. the combination of highest peak power (Petawatt) and highest average power (Megawatt).

Biography: Jens Limpert received his M.S in 1999 and Ph.D. in Physics from the Friedrich Schiller University of Jena in 2003. His research interests include high power fiber lasers in the pulsed and continuous-wave regime, in the near-infrared and visible spectral range. After an one-year postdoc position at the University of Bordeaux, France, where he extended his research interests to high intensity lasers and nonlinear optics, he returned to Jena and is currently leading the Laser Development Group (including fiber- and waveguide lasers) at the Institute of Applied Physics. He is author or co-author of more than 280 peer-reviewed journal papers in the field of laser physics. His research activities have been awarded with the WLT-Award in 2006, an ERC starting grant in 2009 and an ERC consolidator grant in 2013. Jens Limpert is founder of the Active Fiber Systems GmbH a spin-off from the University Jena and the Fraunhofer-IOF Jena.

17:20 to 18:05
2D MATERIALS AND THEIR HETEROSTRUCTURES: FUNDAMENTALS, APPLICATIONS AND PROTOTYPES
Frank Koppens
ICFO-The Institute of Photonic Sciences, Spain
Heterostructures of graphene and related two-dimensional materials are a promising new material system with virtually unlimited possibilities. Van der Waals heterostructures are constructed by vertically stacking atomically thin materials, selected from a rich palette of thousands of materials that can be semi-conducting, insulating, superconducting, metallic or magnetic. These are key enablers for tailoring new and unique electronic, optical and opto-electronic properties. Moreover, the ability to manipulate several flavors of polaritons within the vast library of 2D materials, in addition to nano- and heterostructuring, promises the on-demand design of new optical properties that are not possible with traditional materials. In this talk, both fundamental properties and applications of this exciting material platform will be presented. Moreover, we show progress on the integration of 2D materials with CMOS-electronics, including the first prototype broadband image sensor and integrated photonics network.

Biography: Prof. Frank Koppens obtained his PhD in experimental physics at Delft University, at the Kavli Institute of Nanoscience, The Netherlands. After a postdoctoral fellowship at Harvard University, since August 2010, Koppens is a group leader at the Institute of Photonic Sciences (ICFO). The quantum nano-optoelectronics group of Prof. Koppens focuses on both science and technology of novel two-dimensional materials and quantum materials. Koppens has received the ERC starting grant, the ERC consolidator grant, two ERC proof-of-concept grants, the Christiana Huygensprijs 2012, the national award for research in Spain, and the IUPAP young scientist prize in optics. Prof. Koppens is leader of the optoelectronics workpackage of the graphene flagship (1B€ project for 10 years), as well as a member of the executive board. In total, Koppens has published more than 70 refereed papers (H-index 40), with more than 35 in Science and Nature family journals. Total citations >12,000.

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INTRODUCTION
Harald Giessen
Univ. of Stuttgart, Germany

9:05 to 9:50
FROM EXTREME NONLINEAR OPTICS TO ULTRAFAST ATOMIC PHYSICS
Anne L’Huillier
Lund Univ., Sweden

High-order harmonic generation (HHG) in gases and its applications is today an active field of research worldwide. High-order harmonics are created when intense laser radiation interacts with a gas of atoms or molecules. In the time domain, the emission is a train of pulses in the extreme ultraviolet range, separated by half a laser cycle and with atto-second duration. The interference between atto-second pulses results in a frequency comb of high-order (odd) harmonics. This presentation will introduce the physics of high-order harmonic generation and atto-second pulses.

There is today an increased diversity of HHG sources driven by a variety of lasers ranging from high energy lasers at low repetition rate to high average power lasers, based upon optical parametric amplification or simply high-power oscillators. HHG sources can be vastly different, with parameters such as peak power or repetition rate varying by several orders of magnitude. There is also a growing diversity of HHG applications spanning many areas from atomic and molecular physics to condensed matter. We will focus on the use of atto-second pulses to probe photoionization dynamics in atoms.

Biography: Anne L’Huillier, defended her PhD at the Commissariat à l’Energie Atomique, Saclay, France in 1986. She was postdoctoral fellow at Chalmers Institute of Technology, Gothenburg (1986), University of Southern California (1988), and visiting scientist at Lawrence Livermore National Laboratory (1993). She was employed as researcher in Saclay, France until she moved to Lund University, Sweden in 1995 and became full professor in 1997.

Her research is centered round the generation of high-order harmonics of the laser light and its applications, especially in atto-second science. Her research group at the Lund Laser Center is one of the few groups in the world producing routinely short atto-second pulses via harmonic generation and exploring applications of this source of radiation.

Anne L’Huillier is on the Nobel Committee for Physics (2010), and has been a member of the Swedish Academy of Sciences since 2004. In 2003, she received the Julius Springer Prize. In 2011 she received a UNESCO L’Oréal award for “Women in Science”. In 2013, she was awarded the Carl-Zeiss Research Award and the Blaise Pascal Medal and an Honorary Degree, Université Pierre et Marie Curie (UPMC), Paris.

9:50 to 10:35
QUANTUM COMPUTATIONS AND QUANTUM SIMULATIONS WITH TRAPPED IONS
Rainer Blatt
Institute for Experimental Physics, Univ. of Innsbruck, Austria

In this talk, the basic toolbox of the Innsbruck quantum information processor based on a string of trapped Ca+ ions will be reviewed. For quantum information processing, the toolbox operations are employed for quantum computations [1], for quantum simulations [2], and with optical cavities and photons they are used for the implementation of quantum interfaces [3] for the realization of quantum networks.

For quantum computation, a scalable Shor algorithm was realized [1] with a string of trapped Ca+ ions. Towards scaling the trapped ion quantum computer, we encode one logical qubit in entangled states distributed over seven trapped-ion qubits. We demonstrate the capability of the code to detect one bit flip, phase flip or a combined error of both, regardless on which of the qubits they occur. Furthermore, we apply combinations of the entire set of logical single-qubit Clifford gates on the encoded qubit to explore its computational capabilities [4]. The quantum toolbox is further applied to carry out both analog and digital quantum simulations. The basic simulation procedure and its application will be discussed for a variety of spin Hamiltonians. Moreover, a spectroscopic technique is presented to study artificial quantum matter and use it for characterizing quasiparticles in a many-body system of trapped atomic ions [5]. Finally, we report the experimental demonstration of a digital quantum simulation of a lattice gauge theory, by realizing (1+1)-dimensional quantum electrodynamics (the Schwinger model) on a few-qubit trapped-ion quantum computer [6].


Biography: Rainer Blatt is Professor of experimental physics at the University of Innsbruck, Austria, and Scientific Director at the Institute for Quantum Optics and Quantum Information (IQOQI) of the Austrian Academy of Sciences (ÖAW). He has carried out trail-blazing experiments in the field of precision spectroscopy, quantum metrology and quantum information processing. Blatt works with atoms caught in ion traps which he manipulates using laser beams. This work is based on suggestions made in the mid-1990s by theorists Ignacio Cirac and Peter Zoller. In 2004 Blatt’s research group succeeded for the first time in transferring the quantum information of one atom in a totally controlled manner onto another atom (teleportation). Two years later, his group already managed to entangle up to eight atoms in a controlled manner. Creating such a first “quantum byte” was a further step on the way towards a quantum computer. 2011 the team managed to push this record to 14 entangled atoms. Furthermore Rainer Blatt took important steps towards successful quantum error correction and the building of quantum simulators. He has received numerous awards for his achievements in the fields of quantum optics and meteorology. In 2012 the German Physical Society awarded him the Stern-Gerlach-Medaille. Together with Ignacio Cirac he won the 2009 Carl Zeiss Research Award. He also received a Humboldt Research Award (2013) and an ERC Advanced Grant by the European Research Council (2008).

In 2013 the Australian Academy of Science announced Rainer Blatt as the 2013 Frew Fellow. In 2014 he was awarded the “Tiroler Landespreis für Wissenschaft 2014” (science award of the state of Tyrol) and in 2015 the Stewart Bell Prize for Research on Fundamental Issues in Quantum Mechanics and Their Applications. Rainer Blatt is full member of the Austrian Academy of Sciences.

10:35 to 11:00 • COFFEE BREAK
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**Poster Sessions**

Location: Exhibition Hall Rhin

Monday 23 April 2018 ............... 17:30 to 19:00
Conferences 10671, 10675, 10682, 10683, 10684, 10686, 10688, 10689

Tuesday 24 April 2018 ............... 18:00 to 19:30
Conferences 10672, 10674, 10676, 10679

Wednesday 25 April 2018 .......... 17:45 to 19:15
Conferences 10677, 10678, 10680, 10681, 10685, 10687

Conference attendees are invited to attend the Photonics Europe poster sessions on Monday, Tuesday, and Wednesday. Each day will feature posters from selected conferences. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.

Posters will be available for preview after 10:00 on the morning of the respective Poster Session Day in the Conference Centre.

**POSTER SETUP INSTRUCTIONS**

Poster authors, view poster presentation guidelines and set-up instructions at [http://spie.org/x34963.xml](http://spie.org/x34963.xml). Authors, set up your posters on your assigned day beginning at 10:00.

**Working across Cultures**

Tuesday 24 April 2018 ............... 10:30 to 12:30
Location: Niveau/Level 0, Salon 9

SPONSORED BY: The SPIE Diversity+Inclusion Committee

The workshop will discuss tools to understand and interpret cross-cultural values and perspectives and adapt to diverse perspectives and working styles.

Sign up to learn to use your intercultural skills to help you build stronger relationships and communicate effectively with international contacts. Recognize when misunderstandings have happened; understand the biggest differences among different cultures and learn to communicate in different culture: from using small talk to communication to establish trust.

**SPEAKER:**

Michelle Cummings-Koether, Consultant (Germany)

**Light Shaping Focus Session**

Monday 23 April 2018 ............... 11:00 to 18:00
Location: Niveau/Level 1, Salon 8

This session will provide an overview of various methods of spatial light shaping, covering refractive freeform surfaces, diffractive beam splitters, diffusers, and multichannel array-type components including lens arrays. Light shaping techniques are classified and the strengths and weaknesses of the different methods are discussed with respect to different applications and light sources. The usage and limitations of ray and physical optics for the modeling and design of light shaping systems is considered. Fabrication techniques for light shaping components will be addressed. See page 144 for full programme details.

**Assemblée Générale de l’AFOP // AFOP General Assembly**

Location: Niveau/Level 0, Cassin

Tuesday 24 April 2018 ............... 16:30 to 19:30

AFOP, the French association of Manufacturers in Optics and Photonics and the CNOP, the French National Committee of Optics and Photonics organize their General Assemblies to decide their merger within the new structure Photonics France. This event is by Invitation only.

**“Light Culture” Hologram Exhibition**

Location: Level 1, Salle Etoile B

Monday ......... 10:00 to 20:00
Tuesday .......... 10:00 to 17:00
Wednesday ........... 10:00 to 16:00

In 1977 in Strasbourg, the holographic exhibition “Sculptures de Lumière” introduced holograms to the public in France after “Light Fantastic” in London in the same year. Forty years later, “Light Culture” takes a look back at the history of this remarkable 3D imaging technology and examples of other 3D imaging techniques right up to the full immersion augmented reality workbench. The exhibition will show a selection of holograms and curiosities showing the history of 3D imaging, including stereoscopic photos, the first holograms of the 1970’s, commercial holograms from the 1990’s, lenticular photos from the last ten years, modern full colour holograms, VR and AR goggles and the full immersion workbench.
SPECIAL EVENTS

Women in Optics Panel and Reception
Wednesday 25 April 2018 ............... 17:00 to 18:30
Location: Niveau/Level 0, Salon 5
Join us for an early evening of networking and inspiration. The “Nurturing Success” panel will explore the importance of fostering the right environment for women to flourish in the field of optics. Topics may include the importance of educational outreach during childhood, mentorship for students, family-oriented policies in the workplace, and recognition practices that inspire long-term career growth.
MODERATOR:
Agnes Huebscher, SPIE European Advisory Committee Chair and European Marketing Director of Edmund Optics
PANELISTS:
Dr. Anna Grazia Mignani, Senior Scientist at CNR Institute for Applied Physics “Nellow Carrarra” and Scientific Officer at the European Research Council Executive Agency
Prof. Roberta Ramponi, Director of IFN-CNR and Professor in the Department of Physics at Politecnico di Milano
Dr. Michalina Gora, Tenured Researcher at the French National Center for Scientific Research CNRS, ICube Laboratory, Strasbourg
The panel will be followed by a reception, offering the opportunity to meet the speakers and connect with your peers. Light refreshments will be served.

Innovation Village Awards Ceremony
Wednesday 25 April 2018 ............... 15:00 to 15:30
Location: Hall Rhin, Presentation Area
The Innovation Village competition aims to find the best innovation by an individual researcher and the best innovation by a multilateral project, organization, or company. Join us to celebrate the 2018 winners!

Hands-on VR, AR, MR Headset Demo Sessions
Location: Niveau/Level 1, Salon 14
Reserve a session at http://spie.simplybook.me or visit Salon 14 to enquire about the waiting list.
Monday 23 April ......................... 13:00 to 17:00
Tuesday 24 April ......................... 8:30 to 17:00
Wednesday 25 April ...................... 8:30 to 17:00
Take this opportunity to test-drive the hottest new virtual reality hardware currently (or soon to be) on the market.
You must reserve a time slot. Time slots are 30 minutes. You may sign up for a maximum of 4 sessions.
PROFESSIONAL DEVELOPMENT

Making the Most of Your Presentation

Location: Niveau/Level 1, Salon 13
Sunday 22 April 2018 ........................................... 13:30 to 17:30
WS897 • Course Level: Introductory
Course Length: Half-day (3.5 hours)

Continuing Education Units (CEU): 0.35 Available upon request.
Note: This course is free to technical attendees. No advance registration required.

Oral presentation skills are a key to success for researchers and professionals alike. This course offers a no-nonsense approach to preparing and giving presentations, with a particular focus on structure, slides, and delivery. It also offers tips on how to manage the nervousness associated with speaking in public.

LEARNING OUTCOMES
This course will enable you to:
• organize your material into an effective structure
• create slides that get the message across
• deliver your presentation effectively, both verbally and nonverbally

INTENDED AUDIENCE
This course is intended for anyone who must prepare and give oral presentations about his or her research work. Both novice and experienced speakers can expect to gain a lot from it.

INSTRUCTOR
Jean-luc Doumont runs lectures and workshops in scientific communication, pedagogy, critical thinking, and more for engineers, scientists, and other rational minds. He is an engineer from the University of Louvain and a doctor in applied physics from Stanford University. Articulate, entertaining, and thought-provoking, he is a popular invited speaker at top-notch universities and research centers worldwide.

Conveying Messages with Graphs

Location: Niveau/Level 1, Salon 13
Monday 23 April 2018 ........................................... 13:30 to 17:30
WS1202 • Course Level: Introductory
Course Length: Half-day (3.5 hours)

Continuing Education Units (CEU): 0.35 Available upon request.
Note: This course is free to technical attendees. No advance registration required.

Widely used in research and development to analyze and communicate data, graphical displays are still poorly mastered by researchers (and popular software does not help). This course discusses how to create more effective graphs—graphs that are truly visual, are truthful to the data, and get the message across.

LEARNING OUTCOMES
This course will enable you to:
• select the right graph for a given data set and a given research question
• optimize this graph to make it intuitive and to reveal the data
• phrase a caption that gets the message across

INTENDED AUDIENCE
This course is intended for anyone who must create graphs for written documents or oral presentations. Both novice and experienced authors/speakers can expect to gain a lot from it.

INSTRUCTOR
Jean-luc Doumont runs lectures and workshops in scientific communication, pedagogy, critical thinking, and more for engineers, scientists, and other rational minds. He is an engineer from the University of Louvain and a doctor in applied physics from Stanford University. Articulate, entertaining, and thought-provoking, he is a popular invited speaker at top-notch universities and research centers worldwide.

Structuring Your Research Paper

Location: Niveau/Level 1, Salon 13
Monday 23 April 2018 ........................................... 8:30 to 12:30
WS908 • Course Level: Introductory
Course Length: Half-day (3.5 hours)

Continuing Education Units (CEU): 0.35 Available upon request.
Note: This course is free to technical attendees. No advance registration required.

This course will enable you to:
• organize your material into an accessible structure
• create an effective abstract, introduction, and conclusion
• optimize this graph to make it intuitive and to reveal the data

INTENDED AUDIENCE
This course is intended for anyone who must write or edit technical documents in general and research papers in particular. Both novice and experienced authors can expect to gain a lot from it.

INSTRUCTOR
Jean-luc Doumont runs lectures and workshops in scientific communication, pedagogy, critical thinking, and more for engineers, scientists, and other rational minds. He is an engineer from the University of Louvain and a doctor in applied physics from Stanford University. Articulate, entertaining, and thought-provoking, he is a popular invited speaker at top-notch universities and research centers worldwide.

Career Choices Speaker and Panel Discussion

Location: Exhibition Hall Rhin, Presentation Area
Tuesday 24 April 2018 ........................................... 14:00 to 16:00
Open to Students, Early Career Professionals, and all Attendees

This event will start off with a talk from Rachel Won, Nature Photonics and conclude with a panel discussion that will help you explore potential career pathways in the world of photonics. Get solid advice on how you can translate your knowledge, abilities, and interests into meaningful work. Whether you end up in academia, industry, or start your own company, getting a clear picture of the options from experienced leaders will help you better manage your career trajectory.

14:00
Rachel Won
Nature Photonics
My Journey in Optics
Having been exposed to the environment of journalism where she worked as a student reporter during school days, Rachel had always been excited about news communications. However, she faced a dilemma - science or journalism when it came to the time to choose a major in furthering her study. With a stronger interest in physics and mathematics, science was, naturally, her choice. Fortunately, after completing her PhD study in the world of science, she had the opportunity to combine her background in photonics and her enthusiasm in news communications working as an editor for Nature Photonics.

15:00: Career Choices Panel Discussion

Panelists: Amol Choudhary, The Univ. of Sydney
Eric Mottay, Amplitude Systèmes
Rachel Won, Nature Photonics
GAEA-2

10 Megapixel (max. 4160 x 2464 Pixel)
Phase Only Spatial Light Modulators

Display Size: 0.7" (15.32 x 9.22 mm)
Pixel Pitch: 3.74 µm
Fill Factor: 90 %
Addressing: 8 Bit (256 Phase Levels)
Max. Spatial Resolution: 133.5 lp/mm
Input Frame Rate:
- 60 Hz (3840 x 2160 Pixel)
- 60 Hz (4000 x 2160 Pixel)
- 58 Hz (4160 x 2464 Pixel)

The GAEA-2 series includes a versions for the visible (420-650 nm), a vision for the NIR (650-1100 nm) and a version for typical telecommunication wavelength in the area of 1400 - 1700 nm (e.g. C-Band 1550 nm).

www.holoeye.com
SOCIAL, NETWORKING, AND STUDENT EVENTS

Student Chapter Leadership Workshop
Location: Niveau/Level 1, Etoile
Saturday 21 April 2018 ...................... 9:00 to 17:00
Open to SPIE Student Chapter members. All SPIE Student Chapter Members are welcome but must register.
Participate in the SPIE Student Chapter Leadership Workshop with student chapter leaders from around the world. During this highly interactive, all-day event facilitated by Dr. Jean-luc Doumont, you will discuss what being a leader is all about (and what it is not about), how to communicate across cultures, and how to go from ideas to achievements for your chapter. Expect to gain new insights, make new friends, and overall spend a rich and enjoyable first day at the conference.

Jean-luc Doumont
Principae
An engineer (Louvain) and PhD in applied physics (Stanford), Jean-luc is acclaimed worldwide for his no-nonsense approach, his highly applicable, often life-changing recommendations on a wide range of topics, and Trees, maps, and theorems, his book about “effective communication for rational minds.” He is a visiting lecturer for SPIE. For more information about Jean-luc, please visit www.principiae.be.

Lunch with the Experts - A Student Networking Event
Location: Niveau/Level 1, Etoile A
Monday 23 April 2018 ...................... 12:30 to 13:30
Open to Student Attendees
Enjoy a casual meal with colleagues at this engaging networking opportunity, hosted by SPIE Student Services. This event features experts willing to share their experience and wisdom on career paths in optics and photonics and an award presentation for SPIE scholarships. Seating is limited and will be granted on a first-come, first-served basis.

Welcome Reception
Location: Niveau/Level 1, Etoile
Monday 23 April 2018 ...................... 19:00 to 20:30
All attendees are invited to the Welcome Reception. Relax, socialize, and enjoy the refreshments. Please remember to wear your registration badge. Dress is casual.

SPIE Fellows Luncheon
Location: Niveau/Level 1, Etoile A
Tuesday 24 April 2018 ...................... 13:00 to 14:30
All Fellows of SPIE are invited to join your colleagues for the sixth SPIE-hosted fellows luncheon in Europe. The new Fellows attending Photonics Europe will be introduced and recognised. Please plan to attend this informal lunch gathering and a special opportunity to meet with the international community of SPIE Fellows. Fellows planning to attend are asked to RSVP to brentj@spie.org.
FELLOWS LUNCHEON PRESENTATION:
Optical Challenges to Enable the Ultimate Mixed Reality Experience
The fast evolving fields of VR, AR and eventually MR aim at providing the ultimate user experience in digital immersion and visual comfort, in order to build up a solid acceptance base from both enterprise and consumer. Today’s state of the art Head Mounted Display hardware offerings are still far away from this goal. Optics play a key role in enabling such stringent hardware requirements. We will review the most challenging aspects and discuss which emerging optical architectures and technologies might help to solve them.

Dr. Bernard Kress
Principal Optical Architect
Microsoft Corp.

Student Chapter Poster Session
Location: Galerie
Wednesday 25 April 2018 ................... 10:00 to 11:30
Open to all Attendees
Join us for refreshments and a late-afternoon mixer in the Student Chapter section of the Exhibition Hall. Meet our amazing students and learn about the innovative activities of some of the best and brightest Student Chapters across the globe!

Hands-on VR, AR, MR Headset Demo Sessions
Location: Niveau/Level 1, Salon 14
Reserve a session at http://spie.simplybook.me or visit Salon 14 to enquire about the waiting list.
Monday 23 April ......................... 13:00 to 17:00
Tuesday 24 April ......................... 8:30 to 17:00
Wednesday 25 April .................... 8:30 to 17:00
Take this opportunity to test-drive the hottest new virtual reality hardware currently (or soon to be) on the market.
You must reserve a time slot. Time slots are 30 minutes. You may sign up for a maximum of 4 sessions.
SOCIAL, NETWORKING, AND STUDENT EVENTS

AR/VR Design Challenge Awards and Networking Lunch
Location: Niveau/Level 1, Etoile A
Wednesday 25 April 2018 .......... 13:00 to 14:30
Presenters, sponsors, and professionals associated with the AR/VR Design Challenge are invited to an awards ceremony and lunch reception. Awards for the best presentations during the design pitch competition will be presented here.

SPIE Members Reception
Location: Niveau/Level 1, Etoile A
Wednesday 25 April 2018 ............ 19:30 to 20:30
For SPIE Members Only. (Membership will be checked at the entrance for admission.)
All SPIE Members are invited to this reception in their honour. Come relax and talk with your colleagues. Refreshments will be served. Please note: this reception is limited to SPIE Members only. Membership cards or invitations will be requested at the entrance. If you join SPIE onsite, please bring your registration receipt. Dress is casual or business attire. Please wear your registration badge and member ribbon.

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Find targeted engineering and technical jobs, post your CV/resume online, set-up job alerts, access career-related articles and more, all for free.

Create a free account at www.spiecareercenter.org or visit optics.org booth 324G
This course provides an overview of the various design and fabrication techniques available to the optical engineer for micro / nano optics, diffractive optics and holographic optics. Emphasis is put on DFM (Design For Manufacturing) for wafer scale fabrication, Diamond Turning Machining (DTM) and holographic exposure. The course shows how design techniques can be tailored to address specific fabrication techniques’ requirements and production equipment constraints. The course will also address various current application fields such as display, imaging, sensing and metrology.

The course is built around 4 points: (1) design, (2) modeling, (3) fabrication/mass production and (4) application fields.

1) The course will review various design techniques used in standard optical CAD tools such as Zemax and CodeV to design Diffractive Optical Elements (DOEs), Micro-Lens Arrays (MLAs), hybrid optics and refractive micro-optics, Holographic Optical Element (HOE), as well as the various numerical design techniques for Computer Generated Holograms (CGHs).

2) Modeling single micro optics or complex micro-optical systems including MLAs, DOEs, HOEs, CGHs, and other hybrid elements can be a difficult or nearly impossible task when using classical ray tracing algorithms. We will review techniques using physical optics propagation to model not only multiple diffraction effects and their interferences, but also systematic and random fabrication errors, multi-order propagation and other effects which cannot be modeled accurately through ray tracing.

3) Following the design (1) and modeling tasks (2), the optical engineer usually needs to perform a DFM process so that his/her design can be fabricated by the target manufacturing partner/vendor on specific equipment. We will review such DFM for wafer fab via optical lithography (tape-out process), single point diamond turning (SPDT), or holographic optics recording specification. The course also reviews fracturing techniques to produce GDSS layout files for specific lithographic fabrication techniques and manufacturing equipment.

4) In order to point out the potential of such micro-optics for consumer products, this section reviews current application fields for which such elements are providing an especially good match, impossible to implement with traditional optics, such as depth mapping sensing (structured illumination or time of flight), Head tracking sensors (either IMU or camera based), Gaze tracking sensors, Display engines including microdisplay panels, scanner based light engines and diffractive phase panels, Optical combiners integrated either in free space or waveguide platforms.

Emphasis is put on the design and fabrication techniques to provide the best immersion and comfort to the end user, along the following guidelines: Wearable comfort (size/weight, center of gravity), Visual comfort (eye box size and IPD coverage, resolution, field of view, distortion, dynamic range, stereo overlay amount), Vergence / accommodation disparity (varifocal, multifocal, light fields and holographic displays), Foveated rendering and peripheral displays, Pupil swim and active distortion compensation.

The advantages and limitations of the various optical technologies addressing such specifications are reviewed and analyzed.

More specifically, emphasis will be put on eyebbox definition as an experienced spec, subsequent eyebbox replication and eyebbox enlargement techniques as well as alternative eyebbox generation techniques.

In order to design next generation head worn systems, one needs to fully understand the specifics and limitations of the human visual system, and design the optics and the optical architecture around such.

The course also lists the main challenges still lying ahead for next generation headworn systems, where immersion and comfort need to be addressed in concert. The course reviews how such drastic optomechanical specs may be addressed without compromising the features required to provide the user with the ultimate AR/VR experience.

Finally, the course reviews the major market analysts expectations for VR and AR, projected over the next 5 to 10 years, and lists the main actors (major consumer companies as well as start-ups and current investment rounds in such). Demonstration of some of the state of the art AR, MR and VR headsets will be offered to attendees at the end of the course.

### INSTRUCTOR

**Bernard Kress**

Over the past two decades, Bernard Kress has made significant scientific contributions as an engineer, researcher, associate professor, consultant, instructor, and author. He has been instrumental in developing numerous optical sub-systems for consumer and industrial products, generating IP, teaching and transferring technological solutions to industry. Application sectors include laser materials processing, optical anti-counterfeiting, biotech sensors, optical telecom devices, optical data storage, optical computing, optical motion sensors, digital displays systems, and eventually HUD and HMD displays (smart glasses, AR/MR/VR). Bernard has been specifically involved in the field of micro-optics, wafer scale optics, holography and nano-phononics. He has published half a dozen books and has more than 35 patents granted. He is a short course instructor for the SPIE and has been chair of various SPIE conferences. He is an SPIE fellow since 2015 and has been elected to the board of Directors of SPIE (2017-19). Bernard has joined Google [X] Labs in 2011 as the Principal Optical Architect on the Google Glass project, and is since 2015 the Partner Optical Architect at Microsoft on the Hololens project.
OPTICS is a true enabling technology, empowering applications in advanced manufacturing, communications and storage, safety and security, display technologies, energy, health and medicine, and test and measurement. At Edmund Optics®, we aim to ENABLE THE FUTURE by focusing on advancing all aspects of life and overcoming technological limitations with imaging.

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Photonics Europe Industry Programme

Strasbourg Convention Center • Location: Niveau/Level 1, Salon 12

Join your peers at these free sessions in which you will hear industry leaders speak to the markets and opportunities for photonics in Europe.

High-Speed Laser Microprocessing
Monday 23 April 2018 • 13:30 to 17:40
Location: Niveau/Level 0, Salon 12

Recent advances in high average power industrial ultrafast lasers have opened the way for new laser processing applications that combine high throughput with superior precision and quality. This industry session will explore some of the new processing strategies and beam engineering technologies that are required in order to take full advantage of these novel laser sources.

CHAIR:

Eric Mottay
President and CEO, Amplitude Systèmes

PRESENTATIONS:

13:35
Opening by Eric Mottay

13:45 to 14:20
The application of high-power ultrafast lasers to materials processing
Dr. Claus Schnitzler
Managing Director, Amphos GmbH (Germany)

14:20 to 14:55
High-speed polygon scanning
Ronny De Loor
CTO, Founding Partner, Next Scan Technology (Belgium)

14:55 to 15:30
Beam shaping systems for ultrafast laser processing
Dr. Jens Holtkamp
Co-Founder and Managing Partner, Pulsar Photonics GmbH (Germany)
INDUSTRY PROGRAMME

15:30 to 15:55  **Coffee**

**Scaling strategies for surface structuring using high-power ultrafast lasers**

Dr. Johannes-Thomas Finger  
Team Manager 3D-Structuring, Fraunhofer ILT (Germany)

16:30 to 17:05  **Increasing throughput for laser micromachining using ultrafast pulses**

Beat Jaeggi  
Application Lab Manager, Lasea (Switzerland)

17:05 to 17:40  **Selective laser-induced etching (SLE): A scalable subtractive 3D printing process for glasses**

Dr. Jens Gottmann  
CEO and Managing Partner, LightFab (Germany)

**Global Industry Update**  
Tuesday 24 April 2018 • 8:30 to 9:00  
Location: Niveau/Level 1, Salon 12

**SPEAKER**

Stephen G. Anderson  
Director, Industry Development, SPIE

A new report from the SPIE Industry Team presents the third biennial assessment of the world’s core photonics components marketplace. Based on a detailed review of supplier revenues and technology trends, this presentation delivers a unique global perspective of the photonics business, its key players, and its markets.

**Navigating the Funding Landscape in Europe**  
Tuesday 24 April 2018 • 9:00 to 12:35  
Location: Niveau/Level 1, Salon 12

The funding landscape in Europe is complex and potentially overwhelming with a multitude of pan-European and national funding mechanisms available. This session explores some of the options available to those seeking funds and suggests strategies for navigating them.

**SESSION CHAIR**

Dr. Thomas Rettich  
Head of Research Coordination, Trumpf and Member of Photonics21 Executive Board

**PRESENTATIONS:**

9:00 to 9:30  **Horizon 2020 – Current funding opportunities**

Dr. Jean-Jacques Bernardini  
Head of Department – National and European Innovation Funding Programs (France)

9:30 to 10:00  **ERC Funding opportunities for creative minds of Europe and of anywhere in the world**

Dr. Anna G. Mignani  
European Research Council Executive Agency (ERCEA) and National Research Council of Italy (CNR)

10:00-10:25  **COST: Networking for success**

Dr. Sinéad O’Keeffe  
Research Fellow, University of Limerick (Ireland)

10:25 to 10:55  **Coffee**

10:55 to 11:20  **Innovative training network FINESSE (Fibre Nervous Sensing SystEms)**

Dr. Kenny Hey Tow  
Project Manager, FINESSE (Switzerland)

11:20-11:45  **Overview: Photonics funding in Germany**

Lars Unnebrink  
Technology Consultant, VDI Technologiezentrum GmbH, Quantentechnologien (Germany)

11:45 to 12:10  **Overview: Photonics funding in the United Kingdom**

Dr. John Lincoln  
Director, Harlin Ltd. (United Kingdom)

12:10 to 12:35  **Bpifrance, a public investment bank – A financing continuum, in every key phase of business development**

Dr. Sébastien Montusclat  
Manager, Industrial Sectors, BPIFrance (France)
INDUSTRY PROGRAMME

Biophotonics
Wednesday 25 April 2018 • 8:30 to 12:40
Location: Niveau/Level 1, Salon 12

Photonics has been recognized by the European Union as one of (six) Key Enabling Technologies and is a source of numerous new applications in the life sciences. This industry session will provide an overview of recent innovative industrial developments in biophotonics that promise significant health benefits and market potential.

CHAIR
Eric Mottay
President and CEO, Amplitude Systèmes

PRESENTATIONS
8:30 Opening by Eric Mottay
8:40 to 9:15 Near-infrared fluorescence imaging in surgery, a short overview
Dr. Philippe Rizo
Co-founder Fluoptics (France)

9:15 to 9:50 Ultrafast Fiber Lasers for Microscopy and Spectroscopy
Maximilian Breuer
Application Specialist Ultrafast, TOPTICA Photonics AG (Germany)

Samuel Bucourt
CEO, Imagine Optics (France)

10:25 to 10:55 Coffee

10:55 to 11:30 Laser-assisted bioprinting
Dr. Bertrand Viellerobe
CTO at Poietis (France)

11:30 to 12:05 X Pulse Project, laser-driven plasma X-ray source for breast cancer imaging
Dr. Aboubakr Bakkali
Project Manager, ALPhANOV (France)

12:05 to 12:40 Cataract surgery: past and future
Dr. Aurélien Bernard
Scientific Director, Keranova (France)

Properties of Optical Glass and Special Optical Materials
Thursday 26 April 2018 • 10:45 to 13:15
Location: Niveau/Level 1, Salon 12

Optical glass is a key material for general technology. It is the material providing the essential function of imaging in precision optics, a ubiquitous discipline in scientific research, development, diagnosis and metrology in production processes. SCHOTT offers an introduction to optical materials such as optical glass, special optical glass, filters from colored glasses or made by coating and the zero-expansion glass ceramic Zerodur.

SPEAKERS
Dr. Peter Hartmann
SCHOTT AG, (Germany)

Dr. Ralf Biertümpfel
SCHOTT AG, (Germany)

Hands-on VR, AR, MR Headset Demo Sessions
Location: Niveau/Level 1, Salon 14

Reserve a session at http://spie.simplybook.me or visit Salon 14 to enquire about the waiting list.

Monday 23 April . . . . . . . . . . . . . . . . . . . . . . . . . . 13:00 to 17:00
Tuesday 24 April . . . . . . . . . . . . . . . . . . . . . . . . 8:30 to 17:00
Wednesday 25 April . . . . . . . . . . . . . . . . . . . . . . . 8:30 to 17:00

Take this opportunity to test-drive the hottest new virtual reality hardware currently (or soon to be) on the market.

You must reserve a time slot. Time slots are 30 minutes. You may sign up for a maximum of 4 sessions.
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Photonics Europe Exhibition

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- Ion-beam, x-ray, EUV, electron-beam
- Clinical, chemical, and biological instrumentation
- Lasers and other light sources
- Laser systems and accessories
- Cameras and CCD components
- Metrology, inspection, process control
- Infrared sources, detectors, and systems
- Optical components, fibres, materials, substrates
- Displays
- Communications
- Optical test and measurement equipment
- Electronic imaging components, equipment, and systems
- Finished optics, filters and coatings, optical fabrication equipment
- Signal analysis equipment
- Optics manufacturing
- Software for simulation and design
- Photonics equipment manufacturing
- Sensors and detectors

EXHIBITION HOURS
TUESDAY 24 APRIL . . . . . . . . 10:00 TO 17:00
WEDNESDAY 25 APRIL . . . . . 10:00 TO 16:00

Special Showcase
On Exhibition Floor

SEE STARTUPS IN MOTION AND CONNECT WITH FUNDING ORGANISATIONS
 Photonics Innovation Village
Showcasing developments from universities, nonprofits, and research centres
European Village
Meet Network representatives and discover more about links between groups across Europe in the field of Optics and Photonics.
STUDENT OPTICAL DESIGN CHALLENGE

Wednesday 25 April • 8:30 to 12:30 • Location: Etoile C

SPIE is joining with the world leading companies in VR, AR, and MR head-mounted display hardware development to organize the first Student Optical Design Challenge at the Digital Optics for Immersive Displays (DOID) conference.

See students apply their creativity and university optics education to challenging, tangible industry specifications for today’s immersive display products in these areas:

1. Designing a limited FOV monocular see-through smart glass imaging system.
2. Designing a compact Virtual Reality (VR) binocular display system with fixed optical foveation.
3. Designing a compact Vergence-Accommodation conflict (VAC) mitigation display architecture for AR, VR HMDs, HUD or desktop display.

Over €50,000 in cash and prizes awarded throughout the competition.

ORGANIZED BY

Bernard Kress
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EQUIPMENT AND SOFTWARE

Hands-on VR, AR, MR Headset Demo Sessions
See page 20 for information.
Visit the Photonics Innovation Village

Showcasing developments from universities, nonprofits, and research centres.

Located in a special section of the exhibition

**PURPOSE OF THE INNOVATION VILLAGE**

- Support and publicise research teams from universities, non-profit institutions and research centres who are working on research, new applications, and product development.
- Provide free exhibition space together with broad exposure and publicity to the young innovators who are developing the photonics-based products of the future.
- Showcase Europe’s (and the world’s) finest research programmes and to encourage the transfer of optics/photonics research and technology into new and useful products.

**2018 Competitors**

**INNOVATION VILLAGE**

This special section of the exhibition showcases the finest developments from universities, nonprofits, and research centres. The innovative researchers taking part in the programme participate in a competition for prizes by sharing their latest findings to industry innovators and other photonics visionaries.

**CESNET association of univ. of the Czech Republic and the Czech Academy of Sciences**

**CLDS-PHIOTDR**  
Modular effective distributed fiber optic sensing system for acoustic/mechanical vibrations sensing  

**DAMAE and Charles Fabry Lab., Paris France**

**OCTAV**  
New approach to dermatological diagnostic through a novel handheld diagnostic imaging device.

**Dublin City University, APT (Advanced Processing Technology Research Centre)**

**LASFIT**  
Laser-textured Interference-fit Fasteners with Highly Controlled Bond Strength

**Empa, ETH Zurich and FHNW Swiss labs**

**MIRO ANALYTICAL TECHNOLOGIES**  
Multi-component gas sensor based on dual-wavelength quantum cascade lasers.

**ETH Zurich**

**POLARNON**  
High Resolution Nonscanning Multiphoton Polarimetric Microscope

**ETH Zurich**

**MICPULSE**

Holografika Ltd. (a private company, SME Hungary)

**3D LIGHT FIELD LED WALL**

Glasses-free 3D LED wall demonstrator

**ICube laboratory (Strasbourg, France)**

**DERMAPOL**

Real time spectro-polarimetric optical Biopsy tool: application to dermatology.

**Irish Photonic Integration Centre, Tyndall National Institute, Univ Cork**

**PICCAD**

Software package, which can design the complex structure of the photonics components and PICs.

**King’s College London**

**NU-RISE spin-off from the University of Aveiro (Portugal)**

**NU-RISE**

Software and dosimeter to help doctors to deliver better and safer radiation therapy by ensuring the proper radiation dose at the right place.
Physics Department of Politecnico di Milano, Italia

**NIREOS**  IV 2
VIS/NIR spectrometer and more

Saint Petersburg Electrotechnical University

**“LETI”**  IV 6
Design and research of bidirectional surface acoustic wave delay line fabricated using laser ablation method.

Start-up from NTNU - Norwegian University of Science and Technology

**ATLA LASERS**  IV 11
Three prototypes of ultrashort-pulse mode-locked fiber-based lasers emitting in the mid-infrared spectral region between 2 and 3 microns.

TU Delft, the Netherlands

**ROLLANDDETECT**  IV 1
Optical detection of small defects, particles and contamination on surfaces.

University of Arad, Romania

**BRIDGE GRANT (BG) 297/2016**  IV 4
Eclipse choppers and choppers with rotational shaft.

University of Bern and FBK, private, non-profit research institute, Trentino, Italy

**SUPERELLEN**  IV 10
Time-Resolved Single-Photon Imaging System for Quantum Optics Applications.

Warsaw University of Technology, Poland

**OPTO-SPARE**  IV 9
Optoelectronic system for monitoring physiological parameters of patients under MRI diagnosis.

**EUROPEAN NETWORK**

See projects and related prototypes in a special section of the exhibition. Meet network representatives and discover more about links between groups across Europe in the field of optics and photonics.

**IT-ELLI**  EN4
A European partnership program dedicated to training in optics, photonics and lasers based on 3D virtual and augmented reality

**EPRISE PROJECT**  EN1
Centre for Process Innovation Limited (CPI)

**PHOTONICSYS LTD**  EN2
Compact self-referenced SPR biosensing system

**PICS4ALL**  EN3
Berenscho
EXHIBITOR FLOOR PLAN

Hands-on VR, AR, MR Headset Demo Sessions
Location: Niveau/Level 1, Salon 14
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Wednesday 25 April .................... 8:30 to 17:00

Take this opportunity to test-drive the hottest new virtual reality hardware currently (or soon to be) on the market.
You must reserve a time slot. Time slots are 30 minutes. You may sign up for a maximum of 4 sessions.
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Exhibiting companies will be showcasing products in half-hour demonstrations.

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<th>TUESDAY 24 APRIL</th>
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| 10:30 | Large LBO Crystal Applications  
Cristal Laser  
Ophelie Wagner  
>100 mm dia. LBO crystal now available for high intensity and high power lasers. |
| 11:30 | Miniature Fast Highly Sensitive Surface Plasmon Resonance Systems  
Photonicsys  
Prof. Ibrahim Abdulhalim  
Photonicsys was established based on several innovative plasmonic biosensing concepts which improve the detection limit, enhance the penetration depth so that small and large bioentities can be detected using the same system with visible light and make self referenced measurement of higher stability. A simple and highly accurate reading methodology was developed which makes the system compact that can be fit under a microscope or easily integrated with spectroscopic measurement instruments. In this presentation we shall review all these concepts and the related products. |
| 12:30 | High Voltage for Miniature, Low Noise and Precision Applications  
XP Power  
Hafiz M. Khalid  
This presentation will go over our high voltage products for low noise, precision and size constrained applications. |
| 13:30 | Optical Characterization of thin films using Agilent Cary Universal Measurement System (UMS)  
Agilent Technologies  
Dr. Marcus Schulz  
In this presentation it will be shown how the Agilent Cary UMS can be used to characterize thin film coatings by measuring transmittance and absolute reflectance under oblique angle. Moreover the technical aspects of the UMS will be presented to show how the UMS can be modified to cover a wide range of sample types and applications (bandpass filter, Cube beam splitter, diffraction gratings). |
| 15:00 | INNOVATION AWARD CEREMONY  
SPIE |
| 15:30 | Tunable and Swept Lasers for Industrial Test and Medical Imaging  
Santec Europe  
Andrea Geltrude  
Santec Lasers have demonstrate high level of reliability and peculiar performances in the past 20 years, across several fields of application. Tunable Lasers have been developed to streamline photonic testing, providing a complete solution where high-speed analysis, high resolution and accuracy are key. Combining one of Santec’s tunable lasers (TSL-550) with a Santec optical power meter (MMP-200) and custom software, the complete Swept Test System optimizes WDL measurement for use in both R&D and production environments. Swept Lasers are the core of Santec OCT Technology. Developed in our Labs in collaboration with top Universities, Santec Swept sources are widely appreciated in the OCT world and have been integrated in medical devices (e.g. Biometers and Surgical systems) and industrial metrology systems (non invasive imaging). Combining our swept source together with Santec OCT instrumentation, the Santec IVS-2000 OCT Systems is able to perform fine measurements and provide clear surface and cross section images. |
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Following the highly successful International Year of Light and Light-based Technologies 2015, The International Day of Light was proclaimed at the General Conference of UNESCO in November 2017 and the first celebration will take place on 16 May 2018.

The broad theme of light will allow many different sectors of society around the world to participate in activities every 16 May to raise awareness of science and technology, art and culture, and their importance in achieving the goals of UNESCO — education, equality and peace.

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Photonic Technologies
Holografika is a Hungarian venture active in the field of emerging photonic technologies that invented and developed a proprietary light-field technology in glasses-free 3D visualisation, including real 3D display devices, software applications, cameras and 3D data compression solutions and holds several patents and trademarks. The R&D activities supported by EU FP-7 focus on next generation holographic 3D displays and applications in different industries e.g. healthcare, digital signage, etc. Contact: Zsuzsa Dobranyi, Sales Director, zs.dobranyi@holografika.com; Tibor Balogh, CEO, t.balogh@holografika.com

AdlOptica works in field of multifocus and Laser Beam Shaping Optics finding numerous industrial and scientific applications. Multi-year developments are realized in family of piShaper systems, >70 models: almost 100% efficiency, spectrum from UV to IR, power from mW to kW, CW or pulse lasers, achromatic design, variety of flat-top spot sizes, low sensitivity to misalignment. AdlOptica is located in Adlershof, Berlin, Germany’s leading science and technology park. Contact: Alexander Laskin, Project Manager, alex@adloptica.com; Vadim Laskin, General Manager, vadimus@adloptica.com

Agilent is a leader in Pharmaceutical, Life Sciences, Diagnostics, and applied markets. The company provides laboratories worldwide with instruments, services, consumables, applications and expertise, enabling customers to gain the insights they seek. Agilent has about 13500 employees globally and had revenues of $4.47 billion in fiscal year 2017.

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FEATURED PRODUCT: foXXus - multi-focus optics for multi-kW lasers
AdlOptica Optical Systems GmbH
Rudower Chaussee 29, Berlin, 12489 Germany
+49 30 5 6590 8880
info@adloptica.com; www.adloptica.com

FEATURED PRODUCT: New glasses-free light field 3D LED wall display for large-scale digital signage and 3D applications
Holografika is a Hungarian venture active in the field of emerging photonic technologies that invented and developed a proprietary light-field technology in glasses-free 3D visualisation, including real 3D display devices, software applications, cameras and 3D data compression solutions and holds several patents and trademarks. The R&D activities supported by EU FP-7 focus on next generation holographic 3D displays and applications in different industries e.g. healthcare, digital signage, etc. Contact: Zsuzsa Dobranyi, Sales Director, zs.dobranyi@holografika.com; Tibor Balogh, CEO, t.balogh@holografika.com

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Featured Product: APL Photonics, Journal of Applied Physics
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ATA Lasers
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Applied Surface Technologies
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EXHIBITOR LISTING

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**BKtel photonics #109S**
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photons@bktel.com; www.bktel.com/bktel_gb/common/home.html
BKtel photonics is the leading manufacturer of fiber amplifiers and fiber lasers for LiDAR, telecommunication, cable TV, FTTH, military, medical, aerospace and laboratory applications. With over 20 years of activity, BKtel products include a wide range of platforms in the 1µm, 1.5µm and 2µm bands. Contact: Markus Ojutkangas, General Manager, ojutkangas@bktel.com

**Bridge Grant (BG) 297/2016 #41V**
3OM Optomechatronics Group, B-dul Revolutiei nr 77, Arad, 310130 Romania
+40-751511451
duma.virgil@osamember.org; https://3om-group-optomechatronics.ro/
**Featured Product: Optical choppers: eclipse (Romanian Patent RO 126505/20); with shafts (Romanian Patent RO129610-A0).**
The Bridge Grant BG 297 of The Romanian National Authority for Scientific Research (ANCS-UEFISCDI) develops optical choppers with shafts (Romanian Patent RO129610-A0) and eclipse (Romanian Patent RO 126505/2016). It is carried out by the 3OM Optomechatronics Group (founded in 2008 by Prof. Duma), that has been carrying out projects focused on optomechatronic systems with applications in Optical Coherence Tomography (OCT) and optical metrology: IDEAS 1896, PCCA 1682, PTE 181, BG 297, and PED1937. Contact: Virgil-Florin Duma, Professor, duma.virgil@osamember.org

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marc.sciamanna@centralesupelec.fr; www.chairphotonics.eu
The “Chaire Photonique” (Chair in Photonics) is a unique structure in France dedicated to education and training, scientific excellence and innovation in photonics. Created in Metz as part of the Lab. LMOPS of CentraleSupélec and University of Lorraine, this Chaire Photonique is financially supported by CentraleSupélec, Fondation Supélec, AIRBUS group GDI Simulation, FEDER (Europe), the French Republic, Region Grand-Est, Department of Moselle and Metz Métropole.

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EXHIBITOR LISTING

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europe@chroma.com; www.chroma.com

Chroma Technology Corp. is an employee-ownend company that specialises in the design and manufacture of precision optical filters and coatings. The most advanced coating techniques have been developed to provide the greatest accuracy in color separation, optical quality and signal purity exclusively for our customer's applications. We provide application engineering support, short cycle times and are as comfortable designing and manufacturing custom filters as producing our catalog items. The engineering team from Chroma's instrumentation subsidiary 89North is focused on production of light sources and opto-mechanical products for OEM and end-users.

CLDS-PhiTDR #151IV
Zikova 1903/4, Praha 6, 160 00 Czech Republic
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Featured Product: Open distributed acoustic sensing system using telecommunication fibers.

CESNET is an association of public universities and the Academy of Sciences of the Czech Republic. It operates and develops the national e-infrastructure for science, research and education which encompasses a computer network, computational grids and data storage and environment for remote collaboration. The Association has a status of a research organisation and over its twenty-year history; it has reached significant milestones in the area of research. Contact: Josef Vojtech, Head of Optical networks department, vojtech@cesnet.cz; Petr Münster, Senior Researcher, munster@cesnet.cz

CLUB LASER ET PROCÉDÉS #204G
5, c/o IREPA LASER, Parc d’Innovation - Pôle API, 320 Boulevard Sébastien Brant 67400 ILLKIRCH – France
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The CLUB LASER & PROCÉDÉS is the French association of industrial laser users. It gathers : manufacturers, suppliers, public / private researchers, technical and technology transfer centers and end-users. The CLP disseminates information related to industrial laser technologies and processes as well as the animation of a network of experts. It is a non-profit entity and offers a broad portfolio of services to its members.

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Cristal Laser S.A. #112B
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Cristal Laser has been manufacturing top quality non-linear crystals for more than 25 years. We propose low absorption LBO, KTP / KTP.fr and KTA crystals for frequency conversion as well as RTP Pockels Cells for EO applications (Qswitches or Pulsepickers). We are supplying crystals to industrial and military laser manufacturers as well as research centers. Cristal Laser is also involved in several space programs. Moreover, Cristal Laser also distributes Ceramic YAG in Europe. Contact: Ophelie Wagner, Sales manager, ophelie.wagner@cristal-laser.fr

CRYTUR spol s.r.o. #517B
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crytur@crytur.cz; www.crytur.com

Dermapol #171IV
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jhad.zallat@unistra.fr; https://icube.unistra.fr/

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Featured Product: mid infrared optics, lenses, blanks in chalcogendie material

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Cristal Laser S.A.
Parc d’Activités du Breuil, 32 rue Robert Schuman, Messein, 54850 France
+33 3 8347 0101; fax +33 3 8347 2272
mail@cristal-laser.fr; www.cristal-laser.com

Featured Product: 100mm low absorption LBO crystals for SHG or OPA applications

Cristal Laser has been manufacturing top quality non-linear crystals for more than 25 years. We propose low absorption LBO, KTP / KTP.fr and KTA crystals for frequency conversion as well as RTP Pockels Cells for EO applications (Qswitches or Pulsepickers). We are supplying crystals to industrial and military laser manufacturers as well as research centers. Cristal Laser is also involved in several space programs. Moreover, Cristal Laser also distributes Ceramic YAG in Europe. Contact: Ophelie Wagner, Sales manager, ophelie.wagner@cristal-laser.fr

Crytur spol s.r.o.
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Featured Product: mid infrared optics, lenses, blanks in chalcogenide material

Diafir has a unique expertise in high volume infrared components. Its first application is the SPIF platform, a tool based upon patented infrared fiber optic sensors, and a proprietary analysis software to deliver a result within minutes. Diafir is developing a competitive manufacture chalcogenide blanks and optics. It allows a shorter manufacturing cycle and an optimal material use. Diafir can supply optics or blanks from 5 to 60 mm dia, in various chalcogenide materials. Contact: Hugues Tariel, Founder, hugues.tariel@diafir.com

Cristal Laser S.A.
Parc d’Activités du Breuil, 32 rue Robert Schuman, Messein, 54850 France
+33 3 8347 0101; fax +33 3 8347 2272
mail@cristal-laser.fr; www.cristal-laser.com

Featured Product: 100mm low absorption LBO crystals for SHG or OPA applications

Cristal Laser has been manufacturing top quality non-linear crystals for more than 25 years. We propose low absorption LBO, KTP / KTP.fr and KTA crystals for frequency conversion as well as RTP Pockels Cells for EO applications (Qswitches or Pulsepickers). We are supplying crystals to industrial and military laser manufacturers as well as research centers. Cristal Laser is also involved in several space programs. Moreover, Cristal Laser also distributes Ceramic YAG in Europe. Contact: Ophelie Wagner, Sales manager, ophelie.wagner@cristal-laser.fr

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jhad.zallat@unistra.fr; https://icube.unistra.fr/

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**#524G**

Isaac-Fulda-Allee 5, Mainz, 55124 Germany  
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sales@edmundoptics.eu; www.edmundoptics.eu

**Featured Product: New Product: Divergence Adjustable Fixed YAG Beam Expanders With 7/10 Transmitted Wavefront Error**

Edmund Optics® (EO) is a leading global manufacturer and distributor of precision optics, optical assemblies and image processing components with headquarters in the USA and manufacturing facilities in the United States, Asia and Europe and sales representatives around the globe. EO has the world’s largest inventory of optical components for immediate delivery and offers products, standard or customised, in small quantities but also in volume for various industries. Contact: Dr. Stefan Schwarz, Solution Engineer, S.Schwarz@edmundoptics.de; Alexis Liagre, Regional Sales Manager South West Europe, A.Liagre@edmundoptics.fr

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EKSMAS OPTICS

**#421S**

c/o Optolita UAB, Mokslinkiu str 11, Vilnius, 08412 Lithuania  
+370 5 272 99 00; fax +370 5 272 92 99  
info@eksmoptics.com; www.eksmoptics.com

EKSMAS Optics is a manufacturer of laser components for high power laser applications. We produce laser optics, lenses, prisms, filters, laser media and nonlinear frequency conversion crystals, BBO, DKDP and KTP Pockels cells, ultrafast pulse picking systems and opto-mechanical mounts. Company owns IBS coatings facility, clean rooms for assembling of electro-optics, CNC spherical and aspherical lens production facility, flat optics production and nonlinear crystals polishing facilities. Contact: Daugirdas Kuzma, Director, Marketing and Business Development, d.kuzma@eksmoptics.com

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EKSPA

**#418S**

Savanoriu Av. 237, Vilnius, LT-02300 Lithuania  
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**Featured Product: Tunable wavelength fs, ps, ns pulse duration lasers featuring tunability range from 192 to 16000 nm**

Innovative manufacturer of solid state and fiber lasers, systems and components from unique custom system for basic research to small OEM series. In-house R&D team and more than 25 years’ experience enable to tailor products for specific applications and/or according to specific requirements. Main products are femtosecond, picosecond and nanosecond lasers, tunable wavelength systems, ultrafast fiber lasers, high energy laser systems, spectroscopy systems and laser electronics. Contact: Natalija Curkaniuk, area sales manager, n.curkaniuk@ekspa.com

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**#505S**

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k.rietveld@elsevier.com; www.elsevier.com

**Featured Product: Elsevier Optics Journals and Printed Materials**

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**E-PRISE PROJECT**

38, Rue Frédéric Joliot Curie, Marseille, 13388 France  
+33 4 91 055 969  
info@eprise.eu; https://eprise.eu/

**Featured Product: Providing solutions concerning Go2Market challenges & organising pre-arranged B2B meetings**

E-PRISE project supports SMEs working in the Photonics Industry to overcome market barriers and aims to promote and support Photonics as a key enabling technology. It focuses on life science applications in markets where Europe holds a leading position: medical technologies, pharmaceuticals, agriculture and food. As a part of the project, a series of 7 business events entitled “European Photonics Roadshow” will be organised from April 2018 onwards. Contact: Ziga Valic, Head of EU & International Affairs, ziga.valic@pole-optitec.com

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EuroPhotonics, a Photonics Media publication

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2nd Fl, 100 West St, Pittsfield, MA, 01202-4949 United States  
+1 413 499 0514; fax +1 413 442 3180  
info@photonics.com; www.photonics.com

**Featured Product: EuroPhotonics magazine**

EuroPhotonics magazine is the definitive information source for the photonics industry in Europe. EuroPhotonics provides a broad range of information about photonics products, research and news from the European marketplace. Stay current with a FREE print or digital subscription, and expand your knowledge through our extensive, industry-specific archives. Contact: Matthew Beebe, International Account Manager, matt.beebe@photonics.com; Justine Murphy, Senior Editor, justine.murphy@photonics.com

**EV Group (EVG)**

Di Erich Thallner Str 1, St Florian am Inn, 4782 Austria  
+43 7712 5311 0; fax +43 7712 5311 4600  
info@evgroup.com; www.EVGroup.com

**Featured Product: Nanoimprint Lithography, Lens Molding, Wafer Bonding, Mask Aligners, Coaters, Developers**

EV Group (EVG) is a leading supplier of equipment and process solutions for the manufacture of semiconductors, MEMS, compound semiconductors, power devices, and nanotechnology devices. Key products include wafer bonding, thin-wafer processing, lithography/nanoimprint lithography (NIL) and metrology equipment, as well as photoresist coaters, cleaners and inspection systems. Founded in 1980, EV Group services and supports an elaborate network of global customers and partners all over the world. Contact: Christine Kaindlstorfer, info@evgroup.com

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Fibertech Optica Inc.
330 Gage Ave Ste 1, Kitchener, ON, N2M 5C6 Canada
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Polakweg 10-11, Rijswijk, 2288 GG Netherlands
+31 70 262 9420; fax +31 70 710 1400
de@haphit.com; www.haphit.com

Featured Product: Passive Fiber Components, Bandpass Filter, WDM, Isolator, Circulariser, Coupler, Splitter, Attenuator
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HinaLea Imaging, a division of Truflag Technologies, Inc., is a technology solutions provider that develops complete hyperspectral imaging solutions both directly and on behalf of strategic partners to address specific problems across a variety of industries, including medical diagnostics, precision agriculture and the quality assurance of food and consumer goods. HinaLea developed the world’s first high-resolution, handheld autonomous hyperspectral camera, which was awarded the SPIE Prism Award.

**ICube/Conectus Technology Transfer**

**#301G**
ICube Laboratory, 300 Boulevard Sébastien Brant, 67412 Illkirch, France  
+33 6 38 85 45 54  
contact@icube.unistra.fr; icube-ipp.unistra.fr/en/index.php/Home  
The ICube lab brings together researchers of the University of Strasbourg and the CNRS in the fields of engineering science and computer science, with imaging as the unifying theme. With around 650 members, I-Cube is a major driving force for research in Strasbourg whose main areas of application are biomedical engineering and sustainable development and a significant activity in photonics. Many academic projects are in the process of technology transfer through SATT Conectus Alsace.

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**Featured Product:** Laser seeder, Fiber sensors, Photonic doppler velocimeter, Custom passive component & integration  
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**Imagine Optic**

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18 rue Charles de Gaulle, Orsay, 91400 France  
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Imagine Optic is the worldwide leading providers of wavefront sensors & adaptive optics solutions for optical metrology, lasers and microscopy. The company offers high performance wavefront sensors for optical metrology/laser diagnostic for applications in the X-EUV, UV, VIS and NIR. For AO applications, the company has developed 2 innovative technologies of deformable mirror and turn key software to address cutting edge challenges in microscopy(MIRA)and ultra high intensity lasers (ILAO Star).

**Innoptics**

**#110B**
Institut d’Optique d’Aquitaine, Rue François Mitterrand, Talence, 33400 France  
+33 5 57 01 73 73  
contact@innoptics.com; www.innoptics.com  
**Featured Product:** Low Noise Widely Tunable VECSEL Laser @2.3 µm  
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**HÜBNER Photonics**

**#309B**
Heinrich-Hertz Str 2, Kassel, 34123 Germany  
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photronics@hubner-germany.com; www.hubner-photonics.com  
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info@opto-index.de; www.optoindex.com

### Featured Product: International OptoIndex

The proliferation of photonics creates the imperative need for an index. This work of reference – International OptoIndex – offers a comprehensive data source for companies and products in the sector. The catalogue and website www.optoindex.com will help you to find the answers. The unique keyword register with more than 600 keywords makes your search simple! Updated annually, published in English and distributed worldwide! Contact: Constanze Classen, Media Consultant, constanze.classen@opto-index.com

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contact@isp-system.fr; www isp-system fr

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Konica Minolta Sensing offers measurement instruments to check/ control performance of materials, lightings and displays: Illuminance meters, luminance meters, illuminance colour meters, luminance colour meters, spectroradiometers, display colour analyser, etc. Konica Minolta solutions are widely used for quality control (NDC) and research in many industries. The instruments are suitable for all kind of applications such as: dashboard, lighting exterior and interior, signage, headlight, etc.

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+33 1 30 08 88 88  
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**King’s College London Photonics and Nanotechnology**  
7th Fl/Dept of Physics, The Strand, London, WC2R 2LS United Kingdom  
+44 20 7848 2148; fax +44 20 7848 2420  
RPLAS@kcl.ac.uk; www.kcl.ac.uk/nms/depts/physics/index.aspx

### Featured Product: Ultrasonic metamaterial sensor for the optical detection of gases.

King’s College London is one of the top 25 universities in the world, with the Department of Physics situated in the heart of London. The Photonics & Nanotechnology Group works on the development and applications of advanced photonic technologies and of novel nanomaterials to address modern challenges in photonic and quantum technologies, new nanostructured materials, sensing, imaging and clean energy. Contact: William Wardley, Postdoctoral Research Associate, william.wardley@kcl.ac.uk; Megan Grace-Hughes, Research Project Manager, megan.grace-hughes@kcl.ac.uk

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**L2n team, Charles Delaunay Institute, CNRS, University of Technology of Troyes**  
2 rue Marie Curie CS 42060 10004 Troyes Cedex, France former “LNOI”  
+33 3 25715665, fax: +33 3 25718456  
renaud.bachelot@utt.fr; http://lino.utt.fr

The L2n team (Light, nanomaterials, nanotechnologies, former “LNOI”) is tasked with the development of nano-optics, which addresses a number of technological, scientific and socio-economic challenges, including innovative nanocharacterization and nanomanufacturing methods. UTT and URCA Universities have combined their equipment and their skills to create the Nano/lat platform that is particularly devoted to nanomaterials for optics and photonics.
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**Featured Product:** Photoniques is a bi-monthly journal dedicated entirely to optical solutions

Photoniques is a bi-monthly journal dedicated entirely to optical solutions, covering both product design and implementation. Linking the French speaking community of photonic optics, this journal is aimed at decision-makers, project managers, R & D engineers, scientists. Photoniques is distributed to companies (from SMEs to large corporations), laboratories and training centers in all fields of optics, as well as to decision-makers and leading figures from numerous organisations in Europe. Contact: Annie Keller, Salesperson, annie.keller@endpsciences.org; Aurelie Nardin, Marketing, aurelie.nardin@endpsciences.org

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**PI France**

#525G

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**PolarNon**

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mtimo@phys.ethz.ch; www.ong.ethz.ch/

**Featured Product:** High Resolution Nonscanning Multiphoton Polarisometric Microscope

We are presenting a plug & play multiphoton microscopy solution to perform polarization-dependent measurements of nonlinear responses from investigated materials and structures. The developed fully automated multiphoton microscopy allows to perform sensitive measurements of nonlinear optical responses in wide wavelength range with a high resolution. The prototype was developed in Optical Nanomaterial Group (ONG) in ETH Zurich. Contact: Rachel Grange, ONG group leader, rrange@phys.ethz.ch; Maria Timofeeva, Researcher, mtimo@phys.ethz.ch

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**Polytec France S.A.S.**

#209G

Technosud II Bâtiment A, 99 rue Pierre Semard, Chatillon, 92320 France

+33 1 49 65 69 00; fax +33 1 57 19 59 60
info@polytec.fr; www.polytec.fr

**Featured Product:** Reflectometer, IR sensors, SWIR & Linescan camera, long distance microscope, hyperspectral imaging

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+33 5 57 01 74 00

contact@pyla-routedeslasers.com; www.pyla-routedeslasers.com/en

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#521S

Willowbank Business Park, Larne N Ireland, BT40 2SF United Kingdom

+44 2828 270141; fax +44 2828 275685

sales@raptorphotonics.com; www.raptorphotonics.com

**Featured Product:** Falcon III next generation EMCCD camera

Raptor Photonics aims to provide world class low light level camera solutions to industrial, research and governmental organisations around the globe. Raptor Photonics Limited is a high tech company based in Northern Ireland, which was established in September 2006. Our main focus is to design, manufacture and sell the next generation of high performance, cutting edge, low light level digital cameras. Contact: Derek Craig, sales@raptorphotonics.com
Delft University of Technology (TU Delft) provides technical and scientific education in a number of technical disciplines. It has about 20,000 bachelor and master students and 2,500 PhD students, with a scientific staff of about 2,000 scientists. The funding in 2016 was about 650 Million euro’s. The Optics Research Group is part of the Imaging Physics Department, Faculty of Applied Sciences. The aim is to pursue research in the field of optical instrumentation and optical technology. Key areas are next-generation lithography, sub-wavelength optics, optical metrology, optical design.

Saint Petersburg Electrotechnical University

Prof. Povova Street 5, St Petersburg, 1917376 Russian Federation
+7 951 645 76 19
ASKukaev@gmail.com

Featured Product: Bidirectional surface acoustic wave delay line fabricated using laser ablation method

LETI (ETU) is the oldest electrotechnical university in Europe, entering top-3 engineering universities in Russia. Department of Laser measurement and navigation systems performs research and development in areas of inertial navigation sensors and systems of different grades and optical devices for measurement and communication. Contact: Alexander Kukaev, Assistant Professor, ASKukaev@gmail.com

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57 rue de la Grolle, Bruz, 35170 France
+33 2 23 23 65 71
laurent.brilland@selenoptics.com; www.selenoptics.com

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gasparini@fbk.eu; https://iris.fbk.eu

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tectra GmbH #304S
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About Thorlabs: Thorlabs, a vertically integrated photonics products manufacturer, was founded in 1989 to serve the laser and electro-optics research market. As that market has spawned a multitude of technical innovations, Thorlabs has extended its core competencies in an effort to play an ever increasing role serving the Photonics Industry at the research end, as well as the industrial, life science, medical, and defense sectors.
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Featured Product: Frequency-comb-stabilized laser system: DFC SDL
TOPTICA provides diode lasers, ultrafast fiber lasers, terahertz systems and frequency combs for scientific and industrial applications. The products cover a wavelength range: 190 nm - 0.1 THz. They enable applications in quantum optics, spectroscopy, biophotonics, microscopy, test & measurement and materials inspection. Opton Laser is a specialized distributor in the photonics area. Opton main product lines are lasers, laser instrumentation, spectroscopy, imaging and optomechanical components.

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VIALUX GmbH #320S
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Featured Product: New VIALUX V-9501 DLP® module with extra slim DMD board design enabling gapless DMD arrays.
VIALUX GmbH is a fully privately held company. It was established in 2000 in Chemnitz/Germany. The VIALUX team has long-term experience in optics, image processing, and optoelectronics. As a Design House Partner for the Texas Instruments DLP® line of products, VIALUX has been supporting new emerging DLP applications since more than 12 years. Our DLP subsystems enable customers to get full-scale access to the outstanding DLP performance and to step easily into the digital micro mirror technology. Contact: Roland Hoefling, CEO, dlp@vialux.de

Vmicro S.A.S. #313B
CS 60069, IEMN Ave Poincare, Villeneuve d Asq, 59650 France +33 3 20 19 78 32 info@vmicro.fr; www.vmicro.fr

Featured Product: AFM & SNOM Probes - Photonics on Silicon - Terahertz Devices - On-demand Micro-fabrication
Vmicro is a CNRS spin-off specialized in MEMS, micro-nanosystems, and clean-room fabrication. Vmicro is manufacturing near-field probes based on a new vertical concept unlocking AFM and SNOM applications in the IR->THZ range. The company offers on-demand micro and nanofabrication services: e-beam/optical lithography, plasma etching, and many others process sequences applicable to photonics were advanced design rules are required. Contact: Benjamin Walter, CEO and SPM Product Manager, benjamin.walter@vmicro.fr; Estelle Mairiaux, micro-fabrication manager, estelle.mairiaux@vmicro.fr

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VM-TIM GmbH is the manufacturer of the precision optics in the wavelength range from 120nm up to 12µm. VM-TIM GmbH works in cooperation with EssentOptics GmbH, the manufacturer of the spectrophotometers (185-5200nm), and with OEM-TECH GmbH, the manufacturer of laser- and Pockels-cell- drivers as well as charger capacitors. All three partner manufacturers are located in Jena, Germany.

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DISPLAYS
3D Light Field LED Wall
HOLOEYE Photonics AG

DISPLAYS: CONSUMER, INFORMATION, ENTERTAINMENT
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MONDAY 23 APRIL

LOCATION: SCHWEITZER AUDITORIUM ....................... MON 9:00 TO 11:00

Hot Topics Session I

9:00 to 9:15: Opening Remarks and Awards Presentation
Paul Montgomery, Univ. of Strasbourg, France

9:15 to 9:25: Welcome

9:25 to 9:30: Introduction to Hot Topics
Thierry Georges, Oxxius, France

9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France

10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

For additional details please visit page 6.

Coffee Break............................................. Mon 11:00 to 11:25

SESSION 1

LOCATION: SCHUMAN ........................................... MON 11:25 TO 12:30

2D Materials

Session Chair: Anatoly V. Zayats, King’s College London (United Kingdom)

11:25: Potential and limitations of graphene photonicsones (Invited Paper), Philippe Tassin, Chalmers Univ. of Technology (Sweden) ................ [10671-1]

11:50: Radiation-reaction electric fields in 2D crystals and metasurfaces, Michele Merano, Univ. degli Studi di Padova (Italy) ................ [10671-2]

12:05: Current-driven “one-way” surface plasmons in graphene (Invited Paper), Tiago Morgado, Instituto de Telecomunicações (Portugal) and Univ. de Coimbra (Portugal); Mário Silveirinha, Instituto de Telecomunicações (Portugal) and Univ. de Lisboa (Portugal) and Instituto Superior Técnico (Portugal) ................ [10671-3]

Lunch Break ............................................. Mon 12:30 to 13:30

SESSION 2

LOCATION: SCHUMAN ........................................... MON 13:30 TO 15:30

Nonlinear Metamaterials

Session Chair: Carsten Rockstuhl, Karlsruher Institut für Technologie (Germany)

13:30: Highly nonlinear all-dielectric metasurfaces (Invited Paper), Igal Brener, Sandia National Labs. (United States) .................................................. [10671-4]


14:20: Noncross metasurface for controlling four-wave mixing processes, Giovanni Sartorello, King’s College London (United Kingdom); Guixin Li, Southern Univ. of Science and Technology of China (China); Shumei Chen, The Univ. of Birmingham (United Kingdom); Luke H. Nichols, King’s College London (United Kingdom); King Fai Li, Southern Univ. of Science and Technology of China (China); Thomas Zentgraf, Univ. Paderborn (Germany); Shuang Zhang, The Univ. of Birmingham (United Kingdom); Anatoly V. Zayats, King’s College London (United Kingdom) ....... [10671-6]

14:35: Local field coupling effects in silicon oligomers revealed by third-harmonic generation microscopy, Maria Kroychuk, Damir Yagudin, Alexander S. Shorokhov, Maxim R. Shcherbakov, M.V. Lomonosov Moscow State Univ. (Russian Federation); Dragomir N. Neshev, Yuri S. Kivshar, The Australian National Univ. (Australia); Andrey A. Fedyanin, M.V. Lomonosov Moscow State Univ. (Russian Federation) .......................... [10671-7]

14:50: Third-order nonlinear processes at anapole modes in all-dielectric germanium nanoantennas, Yi Li, Gustavo Grinblat, Michael P. Nielsen, Rupert F. Oulton, Imperial College London (United Kingdom); Stefan A. Maier, Imperial College London (United Kingdom) and Ludwig-Maximilians-Univ. München (Germany) .......................... [10671-8]

15:05: Ultrafast pulse design in anisotropic metamaterials through nonlinear optical control (Invited Paper), Luke H. Nichols, Francisco J. Rodríguez-Fortuño, Mazhar E. Nasir, R. Margoth Córdova-Castro, King’s College London (United Kingdom); Tomasz Stefaniuk, Univ. of Warsaw (Poland); Nicolas Olivier, Enov Polytechnique (France); Gregory A. Wurtz, Univ. of North Florida (United States); Anatoly V. Zayats, King’s College London (United Kingdom) .......................... [10671-9]

Coffee Break ............................................. Mon 15:30 to 15:55

SESSION 3

LOCATION: SCHUMAN ........................................... MON 15:55 TO 17:50

Metamaterials Applications

Session Chair: Igal Brener, Sandia National Labs. (United States)

15:55: Active, nonlinear, and tunable Mie-resonant semiconductor metasurfaces (Keynote Presentation), Isabelle Staude, Friedrich-Schiller-Univ. Jena (Germany) .......................... [10671-10]

16:40: Wavefront control for flat optics using subwavelength dielectric metasurfaces, Chan-Wook Baik, Samsung Advanced Institute of Technology (Korea, Republic of); Heejeong Jeong, Hong Kong Univ. of Science and Technology (Korea, Republic of); Jeong Won Lee, Hanbat National Univ. (Korea, Republic of); Jong Yub Lee, Jae Kwan Kim, Byunggwoon Song, Jang Hwan Tae, Kyung-Sang Cho, Hong-Seok Lee, Samsung Advanced Institute of Technology (Korea, Republic of) .......................... [10671-11]
CONFERENCE 10671

MONDAY POSTER SESSION
LOCATION: HALL RHIN .......................... MON 17:30 TO 19:00
Conference attendees are invited to attend the Photonics Europe poster session on Monday 17:30 to 19:00. Posters will be on display after 10:00 Monday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.
Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Nonlocal computing metasurfaces performing mathematical operations. Andrea Cordero, Univ. of Amsterdam (Netherlands) and FOM Institute for Atomic and Molecular Physics (Netherlands); Huyseong Kwon, Dimitrios Soukas. The Univ of Texas at Austin (United States); Austin Butun, Bilkent Univ. (Turkey); Guy A. E. Vandenbosh, KU Leuven (Belgium); Ekmel Ozbay, Bilkent Univ. (Turkey).

Nonlocal and quantum resonance behavior in plasmonic nanostripes. Syamal Das, Pedro L. Daranciang, Abhijeet Saha, Ioannis Tourkoly. Technologial Inst. of the University of Crete (Greece); Prokhorov Fedor, The Univ. of Texas at Austin (United States); John礙u, The Univ. of Oxford (United Kingdom).

Far-infrared plasmon-photon coupling enhances modal characteristics of graphene-LIF waveguides. Hodjat Hajian, Bilkent Univ. (Turkey); Andry E. Serebryannikov, Technische Univ. Hamburg-Harburg (Germany); Amir Ghobadi, Yiğit Demirğaç, Bayram Butun, Bilkent Univ. (Turkey); Guy A. E. Vandenbosh, KU Leuven (Belgium).

Micron-scale light structuring via flat nanodevices. Nasir Mahmood, Information Technology Univ. of the Punjab (Pakistan) and National Univ. of Sciences and Technology (Pakistan); Muhammad Qasim Mehmoond, Information Technology Univ. of the Punjab (Pakistan); Inki Kim, Heongyeong Kwon, Dimitrios Soukas, The Univ. of Texas at Austin (United States); Antonio Fung, National Univ. of Sciences and Technology (Pakistan); Junsuk Rho, Pohang Univ. of Science and Technology (Korea, Republic of).

UV near-infrared broadband pyramidal absorbers via a genetic algorithm optimization approach. Rucha A. Deshpande, Vladimir A. Znin, Sergey I. Bozhevolnyi, Univ. of Southern Denmark (Denmark).

Polarization tomography of the spin-orbital angular momentum coupling of light with a chiral plasmonic lens, Airong Zhao, Nessim Jebali, Alexandre Mayer, Univ. of Namur (Belgium); Michaelis Lolbet, Harvard Univ. (United States).

The photo-sensitization of zinc oxide by the localized-surface-plasmon-generated hot electron tunneling from the nanostructured titanium nitride nanodisk array. Yue Bian, Zhonghua Xu, Jiandong Ye, Shunming Zhu, Shulin Gu, Kun Tang, Nanjing Univ. (China).

Efficient vortex generation in subwaveband epsilon-near-zero slabs. Alessandro Ciattoni, CNR-SPIN (Italy); Andrea Marin, Istituto dei Sistemi Complessi (Italy); Carlo Rizza, CNR-SPIN (Italy) and Univ. degli Studi dell’Aquila (Italy).

Bifunctional metamirrors for simultaneous polarization splitting and focusing. Sergey Borovik, Rucha A. Deshpande, N. Asger Mortensen, Sergey I. Bozhevolnyi, Univ. of Southern Denmark (Denmark).

Optical filters through plasmonic metamaterials, Francesco Lotti, Optical V. Zayats, King’s College London (United Kingdom).

Optical planar filter for visible RGB resonance, Iker Leonidas Gomez de Souza, Univ. Federal da Bahia (Brazil); Davi Franco Rego, Univ. Federal da Bahia (Brazil); Ivan Khrabustovskyi, Martin W. McCall, Imperial College London (United Kingdom).
Hyperbolic Metamaterials
Session Chair: Sergei Tretyakov, Aalto Univ. School of Science and Technology (Finland)
10:55: Nonlinear waves in hyperbolic metamaterials with a focus on solitons and rogue waves (Invited Paper), V. N. Korobko, A. D. Boardman, Univ. of Salerno (United Kingdom); Bertrand Kibler, Univ. de Bourgogne (France); James McNiff, Univ. of Salford (United Kingdom); Igor Nefedov, Aalto Univ. (Finland); Yuri G. Rapoport, Taras Shevchenko National Univ. of Kyiv (Ukraine); Costas Valagiannopoulos, Nazarbayev Univ. (Kazakhstan); Christos Argyropoulos, Univ. of Nebraska-Lincoln (United States) 
10:65: Transparent conducting and phase-change oxides: new classes of plasmonic and hyperbolic metamaterials (Invited Paper), Aringo Calzolari, Alessandra Catelani, Istituto Nanoscienze (Italy) 
11:00: Into the deep UV: self-assembled hyperbolic metamaterials for the ultraviolet range, William P. Wardle, Francisco J. Rodriguez-Portuño, Luke H. Nichols, Serena S. Campbell, Mazhar E. Nasir, Anatoly V. Zayats, Wayne Dickson, King’s College London (United Kingdom) 
11:10: Structured hyperbolic metamaterials for control of spontaneous emission, Diane Roth, Mazhar E. Nasir, Alexander V. Krasavin, Anatoly V. Zayats, Wayne Dickson, King’s College London (United Kingdom) 
11:20: Dispersion management in nanorod metamaterials, Tomasz Stefanuk, King’s College London (United Kingdom) and Univ. of Warsaw (Poland); R. Margoth Córdova-Castro, Mazhar E. Nasir, Anatoly V. Zayats, King’s College London (United Kingdom) 
12:00: Nano fabrication and synthesis of metamaterials based on binary semiconductor compounds, on M. Tiggiryan, Academy of Sciences of Moldova (Moldova) 
Lunch/Exhibition Break 

Analytical and Numerical Modelling of Metamaterials
Session Chair: Philippe Tassin, Chalmers Univ. of Technology (Sweden)
13:50: Extreme properties meta-atoms with compensated loss (Invited Paper), Sergei A. Tretyakov, Aalto Univ. (Finland); M. Albooyeh, Univ. of California (United States); M. Safari, Iran Univ. of Science and Technology (Iran, Islamic Republic of); Constantin R. Simovski, Aalto Univ. School of Electrical Engineering (Finland) 
14:15: Breaking time-reversal symmetry with nonlinear nanophotonics (Invited Paper), Andrea Alù, Dimitrios Sounas, The Univ. of Texas at Austin (United States) 
14:45: Dynamics of slowly varying fields in bianisotropic media, Stanislav I. Maslovski, Instituto de Telecomunicações (Portugal) 
15:45: On the Aharonov-Bohm effect and generation of electromagnetic potentials in the context of dynamic anapoles, Nikita Nemkov, Alexey A. Basharin, National Univ. of Science and Technology “MISIS” (Russian Federation); Vassily Fedotov, Optoelectronics Research Centre, Univ. of Southampton (United Kingdom) 
15:00: Anomalous localization behaviors in pseudospin systems (Invited Paper), Che Ting Chan, Anan Fang, Zhao-Qing Zhang, Hong Kong Univ. of Science and Technology (Hong Kong, China); Steven G. Louie, Hong Kong Univ. of Science and Technology (Hong Kong, China) and Univ. of California, Berkeley (United States) 
15:35: Analogues of spoof plasmons in elastodynamics and design of seismic metamaterials (Invited Paper), Sebastien Guenneau, Ctr. National de la Recherche Scientifique (United States) 
Coffee Break. 

TUESDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM 
16:30 to 16:55: Introduction
Francis Berghmans, Vrije Univ. Brussels, Belgium
16:55 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Tamas Shevchenko, Applied Physics, Friedrich Schiller Univ. Jena, Germany
17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain
For additional details, please see page 7.
SESSION 9
LOCATION: SCHUMAN ............................ WED 13:30 TO 15:25
Metasurface Functionalities
Session Chair: Tal Ellenbogen, Tel Aviv Univ. (Israel)
13:30: Multifunctional gap plasmon-based metasurfaces (Invited Paper), Sergey I. Bozhevolnyi, Univ. of Southern Denmark (Denmark) .................................................. [10671-43]
13:55: Broadband Laguerre-Gaussian metasurfaces and direct phase mapping, Alexander Fallbinder, Rheinische Friedrich-Wilhelms-Univ. Bonn (Germany) ................................................................. [10671-44]
14:10: Nonlinear dynamics limiting the reconfiguration time of optomechanical metasurfaces, Sophie Vaene, Vrije Univ. Brussel (Belgium) and Chalmers Univ. of Technology (Sweden); Vincent Ginis, Jan Danckaert, Vrije Univ. Brussel (Belgium); Philippe Tassin, Chalmers Univ. of Technology (Sweden) ................................................................. [10671-45]
14:25: The physics of resonant waveguide-gratings and the development of meta-resonant waveguide gratings, Guillaume Basset, Ctr. Suisse d'Electronique et de Microtechnique SA (Switzerland) ........................................... [10671-46]
14:40: Hot electrons in electrically driven plasmonic nanorod metasurfaces, Pan Wang, Alexey V. Krasavin, Mahzad M. Nasir, Wayne Dickson, Anatoly V. Zayats, King’s College London (United Kingdom) ................................................................. [10671-47]
14:55: Dielectric resonator surfaces for infrared filters and photorecords, Fabrizio Silvestri, TNO (Netherlands); Zuzanna K. Deutschman, Wrocław Univ. of Science and Technology (Poland) and TNO (Netherlands); Jonas Berzins, TNO (Netherlands) and Friedrich-Schiller-Univ. Jena (Germany); Giampiero Gerini, TNO (Netherlands) and Technische Univ. Eindhoven (Netherlands); Stefan M. B. Bäumer, TNO (Netherlands) ................................................................. [10671-48]
15:10: Color filter arrays based on dielectric metasurface elements, Jonas Berzins, Friedrich-Schiller-Univ. Jena (Germany) and TNO (Netherlands); Fabrizio Silvestri, TNO (Netherlands); Giampiero Gerini, TNO (Netherlands) and Technische Univ. Eindhoven (Netherlands); Frank Setzpfandt, Thomas Pertsch, Friedrich-Schiller-Univ. Jena (Germany); Stefan M. B. Bäumer, TNO (Netherlands) ................................................................. [10671-49]
Coffee Break ...................................... Wed 15:25 to 15:50
SESSION 10
LOCATION: SCHUMAN ............................ WED 15:50 TO 18:00
New Materials for Metamaterials
Session Chair: Ekmel Özbay, Bilkent Univ. (Turkey)
15:50: Control of perovskite luminescence with metamaterials (Invited Paper), Giorgio Adamo, Harish N. S. Krishnamoorthy, Nanyang Technological Univ. (Singapore); Behrang Mahjoub, Univ. of Southampton (United Kingdom); Daniele Cortecchia, Jin-Kyu So, Mohammad D. Birowosuto, Nanyang Technological Univ. (Singapore); Nikolay I. Zhleudev, Univ. of Southampton (United Kingdom) and Nanyang Technological Univ. (Singapore); Cesare Saci, Nanyang Technological Univ. (Singapore) ................................................................. [10671-50]
16:15: Characterization of the phase transition of a vanadium dioxide film on a silicon substrate through radiative emission in the mid-infrared, Gianmarco Cesarini, Grigore Leahu, Roberto Li Voti, Concita Sibilia, Mario Bertolotti, Sapienza Univ. di Roma (Italy) ................................................................. [10671-51]
16:30: Exploiting hot electron dynamics for nanoscale molecular self-assembly control on plasmonic nanoantennas (Invited Paper), Yi Li, Sabrina Simoncelli, Emilianio Cortés, Stefan A. Maier, Imperial College London (United Kingdom) ................................................................. [10671-52]
16:55: Digitally tunable metasurfaces based on phase-change material, Qian Wang, Institute of Materials Research and Engineering (IMRE) (Singapore); Shengtao Mei, National Univ. of Science and Technology (Poland) and TNO (Netherlands); Guanghui Yuan, Nanyang Technological Univ. (Singapore); Kian Shen Kiang, Univ. of Southampton (United Kingdom); Nikolay I. Zhleudev, Nanyang Technological Univ. (Singapore) and Univ. of Southampton (United Kingdom); Jinghua Teng, Institute of Materials Research and Engineering (IMRE) (Singapore) ................................................................. [10671-53]
17:10: Topological and tunable metasurfaces (Invited Paper), Harry A. Atwater, Caltech (United States) ................................................................. [10671-96]
17:35: New materials for metamaterials: plasmonic and ENZ chalcogenides (Invited Paper), Kevin F. MacDonald, Davide Piccinotti, Behrad Gholiipour, Jin Yao, Brian E. Hayden, Univ. of Southampton (United Kingdom); Nikolay I. Zhleudev, Univ. of Southampton (United Kingdom) and Nanyang Technological Univ. (Singapore) ................................................................. [10671-54]
CONFERENCE 10671

15:05: Enhanced magneto-optical effects in dielectric Mie-resonant metasurfaces, Maria Barsukova, Alexander S. Shorokhov, Alexander I. Musorin, M.V. Lomonosov Moscow State Univ. (Russian Federation); Maxim R. Shcherbakov, M.V. Lomonosov Moscow State Univ. (Russian Federation) and Cornell Univ. (United States); Dragomir N. Neshev, The Australian National Univ. (Australia); Boris S. Luk’yanchuk, M.V. Lomonosov Moscow State Univ. (Russian Federation) and A*STAR - Data Storage Institute (Singapore); Yuri S. Kivshar, The Australian National Univ. (Australia); Andrey A. Fedyanin, M.V. Lomonosov Moscow State Univ. (Russian Federation) ........... [10671-65]

Coffee Break ...................................... Thu 15:20 to 15:40

SESSION 13

LOCATION: SCHUMAN ............................... THU 15:40 TO 17:30

Metamaterial Device Applications

Session Chair: Kevin F. MacDonald, Univ. of Southampton (United Kingdom)

15:40: Application of metamaterial concepts to chipless RFID (Invited Paper), Ferran Martin, Cristian Herrojo, Javier Mata-Contreras, Univ. Autónoma de Barcelona (Spain); Alba Núñez, Instituto de Microelecónica de Barcelona (Spain); Ferran Paredes, Univ. Autònoma de Barcelona (Spain); Eloi Ramon, Instituto de Microelecónica de Barcelona (Spain). . . . [10671-66]

16:05: Integration of subwavelength nanostructures in silicon waveguides: new phenomena and applications (Invited Paper), Alejandro Martinez, Univ. Politècnica de València (Spain) . . . . . . . . . . . . . . [10671-71]

16:30: High rejection ratio silicon membrane Bragg filters, Carlos A. Alonso-Ramos, Xavier Le Roux, Daniel Benedikovic, Vladyslav Vakarin, Elena Durán-Valdeiglesias, Dorian Oser, Ctr. de Nanosciences et de Nanotechnologies (France); Diego Pérez-Galacho, Ctr. de Nanosciences et de Nanotechnologies (France) and Univ. Politécnica de Valencia (Spain); Florent Mazeas, Sébastien Tanzilli, Laurent Labonté, Lab. de Physique de la Matière Condensée (France); Eric Cassan, Delphine Marris-Morini, Ctr. de Nanosciences et de Nanotechnologies (France); Pavel Cheben, National Research Council Canada (Canada); Laurent Vivien, Ctr. de Nanosciences et de Nanotechnologies (France) . . . . . . . . . . . . . . [10671-67]

16:45: All dielectric and plasmonic cross-grating metasurface for efficient perovskite solar cells, Omar A. M. Abdelraouf, The American Univ. in Cairo (Egypt) and Ain Shams Univ. (Egypt); Ahmed Shaker, Ain Shams Univ. (Egypt); Nagah K. Allam, The American Univ. in Cairo (Egypt) . . . . . . . . . . . . . . [10671-68]

17:00: Fibre-optic metadevice for signal processing with 1 THz bandwidth, Angelos Xomalis, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom) and Ctr. for Photonic Metamaterials, Univ. of Southampton (United Kingdom); Iosif Demirtzoglou, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom); Eric Plum, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom) and Ctr. for Photonic Metamaterials, Univ. of Southampton (United Kingdom); Yong Min Yung, Cosimo Lacava, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom); Kevin F. MacDonald, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom) and Ctr. for Photonic Metamaterials, Univ. of Southampton (United Kingdom); Periklis Petropoulos, David J. Richardson, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom); Nikolai I. Zheludev, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom) and Ctr. for Photonic Metamaterials, Univ. of Southampton (United Kingdom) and Ctr. for Disruptive Photonic Technologies, Nanyang Technological Univ. (Singapore) . . . . . . . . . . . . . . [10671-69]

17:15: Metasurface-enhanced AFM cantilevers, Bart G. Speet, TNO (Netherlands); Giampiero Gerini, TNO (Netherlands) and Technische Univ. Eindhoven (Netherlands); Samaneh Mashaghi Tabari, Hamed Sadeghian Marnani, TNO (Netherlands) . . . . . . . . . . . . . . [10671-70]
CONFERENCE 10672
LOCATION: MARIE CURIE A

Sunday-Thursday 22–26 April 2018 • Proceedings of SPIE Vol. 10672

Nanophotonics

Conference Chairs: David L. Andrews, Univ. of East Anglia (United Kingdom); Angus J. Bain, Univ. College London (United Kingdom); Jean-Michel Nunzi, Queen’s Univ. (Canada); Andreas Ostendorf, Ruhr-Univ. Bochum (Germany)

Programme Committee: Mario Berberan-Santos, Univ. de Lisboa (Portugal); Renato Bozio, Univ. degli Studi di Padova (Italy); Mark L. Brongersma, Geballe Lab. for Advanced Materials (GLAM) (United States); Céline Fiorini-Debuisschert, Commissariat à l’Énergie Atomique (France); Vincent Ginis, Vrije Univ. Brussel (Belgium); Theodore Goodson III, Univ. of Michigan (United States); Rachel Grange, ETH Zurich (Switzerland); Yasushi Inouye, Osaka Univ. (Japan); Martti Kauranen, Tampere Univ. of Technology (Finland); Arseniy I. Kuznetsov, A’STAR - Data Storage Institute (Singapore); Francois Lagugné-Labarthet, The Univ. of Western Ontario (Canada); Christoph Liebau, Carl von Ossietzky Univ. Oldenburg (Germany); Robert Lipson, Univ. of Victoria (Canada); Wolfgang Löfler, Leiden Univ. (Netherlands); Raul J. Martin-Palma, Univ. Autónoma de Madrid (Spain); Jesper Mork, Technical Univ. of Denmark (Denmark); Jean-Luc Pelouard, Ctr. de Nanosciences et de Nanotechnologies (France); Manijeh Razeghi, Northwestern Univ. (United States); Anatoly V. Zayats, King’s College London (United Kingdom)

SUNDAY 22 APRIL

OPENING REMARKS
LOCATION: MARIE CURIE A ................................. 13:05 TO 13:10

SESSION 1
LOCATION: MARIE CURIE A ................................. SUN 13:10 TO 15:00
Surface Waves
Session Chair: Vincent Ginis, Vrije Univ. (Belgium)
13:10: Ultraslow waves on the nanoscale (Invited Paper), Ortwin Hess, Imperial College London (United Kingdom) ........................................... [10672-1]
13:40: Hyperbolic and dirac plasmons in topological insulators, Nahid Talebi, Max-Planck-Institut für Festkörperforschung (Germany); Mario Hentschel, Harald Giessen, Univ. Stuttgart (Germany); Robin Linstaedt, Max-Planck-Institut für Festkörperforschung (Germany). .............................. [10672-2]
14:00: Boosting nonlinearity of metasurfaces through decrease in number of particles, Robert Czaplicki, Tampere Univ. of Technology (Finland) and Nicolaus Copernicus Univ. (Poland); Antti Kiviniemi, Mikko J. Huttunen, Xiaorun Zang, Timo Stolt, Tampere Univ. of Technology (Finland); Ismo Vartiainen, Janne Laukkanen, Markku Kuituna, Univ. of Eastern Finland (Finland); Martti Kauranen, Tampere Univ. of Technology (Finland). .................................................. [10672-3]
14:40: Nonlinear dynamics of counter-propagating beams in epsilon-near-zero films, Maria A. Vincenti, Univ. degli Studi di Brescia (Italy); Domenico de Ceglia, The AEgis Technologies Group, Inc. (United States); Michael Scalora, U.S. Army Research, Development and Engineering Command (United States); Costantino De Angelis, Univ. degli Studi di Brescia (Italy). .......................................................... [10672-5]
Coffee Break. .................................................. Sun 15:00 TO 15:30

SESSION 2
LOCATION: MARIE CURIE A ................................. SUN 15:30 TO 17:30

Sensing
Session Chair: Jean-Luc Pelouard, Ctr. de Nanosciences et de Nanotechnologies (France)
15:30: Bottom-up approaches to ultrabright, photostable and non toxic luminescent nanoparticles for bioimaging (Invited Paper), Mireile Blanchard-Desce, Jonathan Daniel, Paolo Pagano, Guillaume Clermont, Michel Vauthier, Jean-Baptiste Verhac, Cristiano Mastrodonato, Univ. Bordeaux 1 (France) ........................................... [10672-6]
16:00: Membrane-encapsulated single nanoparticles, plasmon-based determination of macromolecular interactions and structural changes (Invited Paper), Paul Oshea, The Univ. of British Columbia (Canada); Joanna Richens, The Univ. of Nottingham (United Kingdom); Jonathan Bramble, The Univ. of British Columbia (Canada). .......................... [10672-7]
16:30: Sensing properties of grating-assisted novel surface plasmon resonance sensor, Manish Kumar, Sanjeev Kumar Raghuvanshi, Indian Institute of Technology (Indian School of Mines), Dhanbad (India) ... [10672-9]

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ............ MON 9:00 TO 11:00

Hot Topics Session I
9:00 to 9:15 Opening Remarks and Awards Presentation
9:15 to 9:25 Welcome
Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30: Introduction to Hot Topics
Thierry Georges, Oxiius, France
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

Coffee Break. .................................................. Mon 11:00 TO 11:30

For additional details please visit page 6.

Onsite News: www.spie.org/PEnews • #SPIEPhotonicsEurope
Molecular Photonics

Session Chair: Jean-Michel Nunzi, Queen’s Univ. (Canada)

14:00: Control of photophysical properties of organics by metamaterials (Invited Paper), Jeong Won Wu, Ewha Womans Univ. (Korea, Republic of).

14:15: Quadrupole and hexadecapole transition dipole moment alignment in fluorescent protein FRET, Angus J. Bain, Nicholas Robinson, Thomas Masters, Thomas Blacker, Richard J. Marsh, Davan A. Armoogum, Univ. College London (United Kingdom); Banafsheh Larijani, Unidad de Biofisica (Spain).

14:30: Light-mediated tuning of resonance energy transfer in quantum dot-bacteriorhodopsin nano-bio hybrid material, Victor Krivonov, Pavel S. Samokhvalov, Alexander A. Chistyakov, National Research Nuclear Univ. MEPhI (Russian Federation); Igor Nabiev, National Research Nuclear Univ. MEPhI (Russian Federation) and Univ. de Reims Champagne-Ardenne (France).

15:10: Chiroptical interactions between twisted light and chiral media, Kayn A. Forbes, David L. Andrews, Univ. of East Anglia (United Kingdom).

15:30: Mode-mismatched thermal lens experiment for fluorescence quantum yield measurement in silver nanoparticles-rodhamine b systems, Marco A. Ferreira, Vincent V. Piscitelli, Univ. Central de Venezuela (Venezuela).

15:50: Optical properties of pseudoscyanine molecular clusters embedded in a nanoporous alumina, Anton A. Starovoytov, Olga I. Lepeshova, ITMO Univ. (Russian Federation).

Coffee Break.

TUESDAY POSTER SESSION

SESSION 8

LOCATION: MARIE CURIE A  TUESDAY 14:00 TO 16:10

Molecular Photonics

Session Chair: Jean-Michel Nunzi, Queen’s Univ. (Canada)

14:00: Control of photophysical properties of organics by metamaterials (Invited Paper), Jeong Won Wu, Ewha Womans Univ. (Korea, Republic of).

14:15: Quadrupole and hexadecapole transition dipole moment alignment in fluorescent protein FRET, Angus J. Bain, Nicholas Robinson, Thomas Masters, Thomas Blacker, Richard J. Marsh, Davan A. Armoogum, Univ. College London (United Kingdom); Banafsheh Larijani, Unidad de Biofisica (Spain).

14:30: Light-mediated tuning of resonance energy transfer in quantum dot-bacteriorhodopsin nano-bio hybrid material, Victor Krivonov, Pavel S. Samokhvalov, Alexander A. Chistyakov, National Research Nuclear Univ. MEPhI (Russian Federation); Igor Nabiev, National Research Nuclear Univ. MEPhI (Russian Federation) and Univ. de Reims Champagne-Ardenne (France).

15:10: Chiroptical interactions between twisted light and chiral media, Kayn A. Forbes, David L. Andrews, Univ. of East Anglia (United Kingdom).

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15:50: Optical properties of pseudoscyanine molecular clusters embedded in a nanoporous alumina, Anton A. Starovoytov, Olga I. Lepeshova, ITMO Univ. (Russian Federation).

Coffee Break.
**Effect of plasmonic interaction between rhodamine 6G in polyvinyl alcohol film and rough silver surface: estimation of absorption energy to plasmon excitation transformation efficiency for fluorescence enhancement.**

Ivi S. Tchibulu, Nirmalya Ghosh, Arpita Mandal, Partha Mitra, Muhammad Z. Hossain, Samanta K. Majumdar, Amin Mortezaz-Jleanor, Ching-Chih Chang, Albert Goel, Muhammad N. Siddiqui, M. Shahid Qureshi, Mohamed A. El-Kady, Akhtar Ali, Indian Institute of Technology, Delhi, India (India) .................................................. [10672-121]

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**Exotic ultrafast optical nonlinearities in reduced graphene oxide via comprehensive dual beam approach.**

Yasuyuki Horiguchi, Takanori Fusano, Takayoshi Okuyama, Masatoshi Asaka, Taiki Yamashita, Koichi Iguchi, University of Science and Technology (Japan) and AIST National Institute of Materials Science (Japan); Tatsuya Hiyama, University of Science and Technology (Japan); Shinya Endo, University of Science and Technology (Japan); Hidetoshi Yamamoto, University of Science and Technology (Japan); Masahiro Ikeuchi, University of Science and Technology (Japan) ........................ [10672-118]

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**A simple three-layer dielectric structure for spatiotemporal differentiation of optical signals.**

Nikita V. Golovastikov, Olexiy V. Zalevsky, Artem V. Poddubny, Nonlinear Physics Ctr., The Australian National University (Australia) and Univ. of Technology, Sydney (Australia); Lei Xu, Quantum Electronics and Quantum Informatics Lab. (China); Lei Li, National Key Laboratory of Science and Technology on Opto-Electronic Materials and Devices (China); Shusong Liu, Lab. de Matériaux et Phénomènes de la matière condensée, Univ. de Versailles Saint-Quentin en Yvelines (France); Stéphane Loyau, Ctr. de Nanosciences et de Nanotechnologies (France) and Univ. Paris-Saclay (France); Ludivine Emeric, Fayçal Bai, ONERA (France) and Ctr. de Nanosciences et de Nanotechnologies (France) ........................ [10672-117]

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**Polarization studies of fano-interference in waveguiding plasmonic crystals.**

Ankit Kumar Singh, Shubham Chandra, Subir K. Ray, Abhishek Kumar, Ankur Chatterjee, Indian Institute of Technology, Roorkee (India); Vikas Ranjan, Indian Institute of Technology, Roorkee (India); Ritesh Kumar, Indian Institute of Technology, Roorkee (India); Saurabh Sinha, Indian Institute of Technology, Roorkee (India); Nikita Porwal, Shivam Raval, Tridib Sinha, Indian Institute of Technology, Roorkee (India) ........................ [10672-121]
In reverse Faraday effect mediated by surface plasmon-polaritons in graphene-dielectric-metal structure, Igor V. Bychkov, Chelyabinsk State Univ. (Russian Federation) and South Ural State Univ. (Russian Federation); Valentin A. Tokkachev, Chelyabinsk State Univ. (Russian Federation); Dmitry A. Kuzmin, Chelyabinsk State Univ. (Russian Federation) and South Ural State Univ. (Russian Federation); Pavel S. Plaksin, Chelyabinsk State Univ. (Russian Federation); Vladislav G. Sharyov, Kotel’nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences (Russian Federation) [10672-156].

Designing surface lattice resonances to enhance the luminescence from silicon nanocrystals, Frédéric Lau, Davy Gérard, Univ. de Technologie de Compiègne (France); Ilya Rodionov, Bauman Moscow State Technical Univ. (Russian Federation) and Institute of Applied Physics (Russia); Peter Kovanzhi, ITMO Univ. (Russian Federation) [10672-157].

Me resonances and Purcell effect in nanodiamonds, Daniił A. Shilkin, M.V. Lomonosov Moscow State Univ. (Russian Federation) and Immuan Kant Baltic Federal Univ. (Russian Federation); Dmitry V. Obydenkov, M.V. Lomonosov Moscow State Univ. (Russian Federation); Maxim R. Shcherbakov, M. V. Lomonosov Moscow State Univ. (Russian Federation) and Cornell Univ. (United States); Evgeny V. Lyubin, M.V. Lomonosov Moscow State Univ. (Russian Federation); Konstantin G. Katamadze, M.V. Lomonosov Moscow State Univ. (Russian Federation) and National Research Nuclear Univ. MEPhI (Russian Federation) and Institute of Physics and Technology, Russian Academy of Sciences (Russian Federation); Igor I. Vlasov, A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences (Russian Federation) and National Research Nuclear Univ. MEPhI (Russian Federation); Andrey A. Fedyanin, M.V. Lomonosov Moscow State Univ. (Russian Federation) [10672-158].

Highly directional plasmonic nanolaser based on high-performance noble metal film photonic crystal on transparent substrate, Alexander S. Baburin, Artem Ivanov, Alina Dobrotsnova, Bauman Moscow State Technical Univ. (Russian Federation); Pavel Melentiev, Victor Babykin, Institute of Spectroscopy (Russian Federation); Dmitry Moskalov, Bauman Moscow State Technical Univ. (Russian Federation); Anastasiya Pashchymova, Bauman Moscow State Technical Univ. (Russian Federation); Liutsiia Ganieva, Bauman Moscow State Technical Univ. (Russian Federation); Ilya Ryzhikov, Institute for Theoretical and Applied Electrodynamics (Russian Federation); Ilya Rodionov, Bauman Moscow State Technical Univ. (Russian Federation) [10672-159].

Enhanced SHG and DFG of GaAs inclusions in plasmonic resonators, Léna Soun, ONERA (France) [10672-160].

Indium phosphide nanostructures for solar cell application, Orest Kvitavičius, Tainan Laperashvili, Institute of Cybernetics (Georgia); Dai Lin, Lapherashvili, Georgian Technical Univ. (Georgia) [10672-161].

Diffusion by dispersed assemblies of nanotannens, Eslam El Shamy, Riad Haidar, Patrick Bouchon, Julien Jaecq, ONERA (France) [10672-162].

Diffusion of graphene with broken symmetry: complete photonic bandgap and defect modes, Michaël J. A. de Dood, Leiden Univ. (Netherlands) [10672-163].

Photoluminescence enhancement in nanoimprinted halide perovskite films, light low temperatures, Ektarina I. Tiginitsa, ITMO Univ. (Russian Federation); Yuriy Kapitonov, Saint Petersburg State Univ. (Russian Federation); Qing Gu, Walter Hu, The Univ. of Texas at Dallas (United States); Sergey Mar'yanov, ITMO Univ. (Russian Federation); Arvaz Zakirov, The Univ. of Texas at Dallas (United States); Andrey Bogdanov, ITMO Univ. (Russian Federation) [10672-164].

Ellipsometry of graphene-protected structures based on copper, Andrii Shcherbakov, Leonid V. Poperoenko, Iryna V. Yurgelutych, Taras Shevchenko National Univ. of Kyiv (Ukraine) [10672-165].

Automation of spectrotellometric measurements within range of 1-4.9 eV by Beatrice-Conn method, Ruslan Ryskulov, Peter Kovanzhi, Artem Sribniy, Yevhen Kovalevsky, Vadym Prokopets, Leonid V. Poperoenko, Tatiana Veresov, ITMO Univ. (Russian Federation) [10672-166].

Design of an efficient energy-harvesting metamaterial for WiFi signals, Gabin T. Gumbe Tekam, Vincent Ginis, Jan Danckaert, Vrije Univ. Brussel (Belgium); Philippe Tassin, Chalmers Univ. of Technology (Sweden) [10672-167].

Surface plasmon polariton generation in a single-walled carbon nanotube, Igor Zolotovskiy, Sergey Moseev, Alexey Kadochkin, Yulya Dadoenkov, Artem Sribniy, Ulyanov State Univ. (Russian Federation); KRassimir Panajotov, Chelyabinsk State Univ. (Russian Federation) [10672-168].


Analysis of localized resonances in nanodolmen plasmonic structures, Jiří Pirunček, Pavel Kwiecien, Ivan Richter, Czech Technical Univ. in Prague (Czech Republic) [10672-170].

Plasmonic trapping using special structure, Woorim Choi, Gwangju Institute of Science and Technology (Korea, Republic of) [10672-171].
CONFERENCE 10672

SESSION 12

LOCATION: MARIE CURIE A ............................... WED 16:00 TO 18:10
Novel Plasmonics and Surface Nanophotonics
Session Chair: Anatoly V. Zayats, King’s College London (United Kingdom)
16:00: Magnetoptoplasmonics: magnetic control of light in nanoscale landscapes (Invited Paper), Alexandre Dmitriev, Göteborga Univ. (Sweden) ................................................ [10672-25]
16:30: Near-field plasmonic beam engineering by complex amplitude modulation based on metasurface, Lingling Huang, Xu Song, Beijing Institute of Technology (China); Lin Sun, Xiaomei Zhang, Tsinghua Univ. (China); Ruizhe Zhao, Xiaowei Li, Beijing Institute of Technology (China); Jia Wang, Benfeng Bai, Tsinghua Univ. (China); Yongtian Wang, Beijing Institute of Technology (China); Thomas Zentgraf, Univ. Paderborn (Germany) ................................................ [10672-54]
16:50: Modified conical silicon nanowires for highly efficient light trapping, Salah S.A. Obaya, Fatma Korany, Zewail City of Science and Technology (Egypt); Mohamed Farahat, Zewail City of Science and Technology (Egypt) and Mansoura Univ. (Egypt); Mohamed Hussein, Zewail City of Science and Technology (Egypt); Ahmed Shaker, Helwan Univ. (Egypt); M. El-Azawy, Helwan Univ. (Egypt) ................................................ [10672-55]
17:10: What can we learn from the waves scattered off Mie particles trapped in an evanescent field?, Vincent Ginis, Harvard Univ. (United States) ................................................ [10672-56]
17:30: Faraday rotation induced by Bloch surface waves in magnetophotonic crystals, Maria N. Romodina, Irina V. Soboleva, Alexander I. Musorin, Ksenia A. Korzun, Andrey A. Fedyanin, M.V. Lomonosov Moscow State Univ. (Russian Federation) .................. [10672-57]
17:50: Applications of bioreplication in optics and photonics, Raul J. Martin-Palma, Univ. Autònoma de Madrid (Spain) ............................... [10672-58]

SESSION 13

LOCATION: MARIE CURIE A ............................... THU 11:00 TO 12:40
Quantum Systems
Session Chair: Martti Kaaranen, Tampere Univ. of Technology (Finland)
11:00: Routing thermal noise through quantum networks (Invited Paper), André Xuerub, Univ. of Malta (Malta); Matteo Aquilina, National Aerospace Ctr. (Malta); Shabir Barzanjeh, Institute of Science and Technology Austria (Malta) ................................................ [10672-59]
11:30: Temporal dynamics of strongly coupled exciton-localized surface plasmons beyond Rabi oscillations (Invited Paper), Elad Elzner, Katherine Akulov, Tal Schwartz, Tal Ellenbogen, Tel Aviv Univ. (Israel) ................................................ [10672-60]
12:00: Weak value amplification of geometric spin Hall shift of light beam, Mandira Pal, Antariksha Das, Sumit Goswami, Nirmalya Ghosh, Indian Institute of Science Education and Research Kolkata (India) ................................................ [10672-61]
12:20: Plasmon generation through electron tunneling in graphene, Sandra de Vega, F. Javier Garcia de Abajo, ICFD - Institut de Ciències Fotòniques (Spain) ................................................ [10672-62]

SESSION 14

LOCATION: MARIE CURIE A ............................... THU 15:30 TO 15:40
Waveguides and Nanoantennas
Session Chair: Angus J. Bain, Univ. College London (United Kingdom)
13:50: Nano-engineered high-confinement AGAsAs waveguide devices for nonlinear photonics (Invited Paper), Minhao Pu, Yi Zheng, Erikk Stassen, Ayman N. KameI, Pierre-Yves Bony, Luisa Ottaviano, Elizaveta Semenova, Kresten Yvind, Technical Univ. of Denmark (Denmark) .................. [10672-63]
14:20: Full-vector finite element model for waveguide-based 3D plasmonic sensors, Gilles Renversez, Institut Fresnel (France) ............................... [10672-64]
14:40: Resonant integrated nanophotonic structures for analog differentiation of optical signals, Leonid L. Doskolovich, Evgeni A. Bezu, Dmitry A. Bykov, Nikita V. Golovastikov, Image Processing Systems Institute, Russian Academy of Sciences (Russian Federation) .... [10672-65]
15:00: III-V nanoantennas fabricated from nanowires for enhanced nonlinear optical signal at the Mie resonances, Maria Timofeeva, ETH Zurich (Switzerland) and ITMO Univ. (Russian Federation); Lukas Lang, Claude Renant, Flavia Timpu, ETH Zurich (Switzerland); Igor Shtrum, Alexey Bouravleuv, George Cirlin, Saint Petersburg National Research Academic Univ. of the Russian Academy of Sciences (Russian Federation); Rainer Grange, ETH Zurich (Switzerland) ................................................ [10672-66]
15:20: All-optical modulation of single nanoantenna on vanadium dioxide, Bigeng Chen, Otto L. Muskens, Daniel Trivais, Univ. of Southampton (United Kingdom); Yudong Wang, Seagate Technology LLC (United Kingdom); C. H. de Groot, Univ. of Southampton (United Kingdom); David W. Sheel, Univ. of Salford (United Kingdom); Luca Bergamini, Univ. del Pais Vasco (Spain); Javier Aizpurua, Ctr. de Física de Materiales, Consejo Superior de Investigaciones Científicas (Spain) and Univ. del Pais Vasco (Spain); Jeffrey M. Gaskel, Univ. of Salford (United Kingdom) .... [10672-67]
16:00: Colloidal quantum dot spasers and plasmonic amplifiers (Invited Paper), David J. Norris, ETH Zurich (Switzerland) ................................................ [10672-68]
16:30: Nanophotonic enhanced two-photon excited fluorescence of perovskite quantum dots, Christiane Becker, David Eisenhauer, Grit Köppel, Heinlothz-Zentrum Berlin für Materialien und Energie GmbH (Germany); Pavel Chabera, Kalbo Zheng, Junsheng Chen, Tónu Pullerits, Lund Univ. (Sweden) ................................................ [10672-69]
16:50: The impact of nonbonding electrons on the spectroscopic properties of AgInS2 quantum dots, Adam Olejńczak, Institute of Low Temperature and Structure Research (Poland); Bartomiej Cichy, Institute of Low Temperature and Structure Research (Poland); Wiesław Stręk, Institute of Low Temperature and Structure Research (Poland) .... [10672-70]
17:10: Picosecond optical switching of the near-infrared localized surface plasmon resonances in colloidal doped metal oxide nanocrystals, Ilka Kriegel, Istituto Italiano di Tecnologia (Italy); Francesco Scotognella, Politecnico di Milano (Italy); Liberato Manna, Luca De Trizio, Istituto Italiano di Tecnologia (Italy); Daniele Viola, Politecnico di Milano (Italy); Carmine Urso, Istituto di Nanotecnologie di Milano (Italy); Giulio N. Cerullo, Politecnico di Milano (Italy) ................................................ [10672-71]
17:30: Self-organized aggregation of a triple of resonant nanoparticles into stable structures with various shapes controlled by a laser field, Viktoria Komienko, Institute of Computational Modeling (Russian Federation); Aleksey Tispotan, Viktor Tuchten, Vitaliy Stlabko, Aleksandr Aleksandrovsky, Kirensky Institute of Physics (Russian Federation); Vladimir Shaidurov, Institute of Computational Modeling (Russian Federation) .... [10672-72]
Advances in Ultrafast Condensed Phase Physics

Conference Chairs: Martin Schultzze, Max-Planck-Institut für Quantenoptik (Germany); Eleftherios Goulielmakis, Max-Planck-Institut für Quantenoptik (Germany); Thomas Brabec, Univ. of Ottawa (Canada)

Programme Committee: Dimitrios Charalambidis, Foundation for Research and Technology-Hellas (Greece); Peter Hommelhoff, Max-Planck-Institut für Quantenoptik (Germany); Gerhard G. Paulus, Helmholtz Institute Jena (Germany); Klaus Reimann, Max-Born-Institut für Nichtlineare Optik und Kurzzeitpektroskopie (Germany); Olga Smirnova, Max-Born-Institut für Nichtlineare Optik und Kurzzeitpektroskopie (Germany); Vladislav Yakovlev, Max-Planck-Institut für Quantenoptik (Germany)

MONDAY 23 APRIL

MONDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM ........................................... MON 9:00 TO 11:00

Hot Topics Session I

9:00 to 9:15: Opening Remarks and Awards Presentation
9:15 to 9:25: Welcome
9:25 to 9:30: Introduction to Hot Topics
   Thierry Georges, Oxius, France
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
   Alain Aspect, Lab. Charles Fabry, Institut d’Optique, Univ. of Paris, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
   Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

Coffee Break .......................................................... Mon 11:00 to 11:20

SESSION 1

LOCATION: AUDITORIUM CASSIN ............................................. MON 11:30 TO 12:20

Novel Tools for Ultrafast Spectroscopy

Session Chair: Martin Schultzze, Max-Planck-Institut für Quantenoptik (Germany)

11:30: Ultrafast magnetism and THz spintronics (Invited Paper)
   Markus Münzenberg, Georg-August-Univ. Göttingen (Germany) ... [10673-1]

12:00: Ultrafast dynamics of phase change material probed by frequency domain interferometry
   Jérôme Gaudin, Irene Papagiannouli, Max-Planck-Institut für Quantenoptik (Germany)

Lunch Break .......................................................... Mon 12:20 to 13:30

SESSION 2

LOCATION: AUDITORIUM CASSIN ............................................. MON 13:30 TO 15:30

Ultrafast Excitation Dynamics I

Session Chair: Eleftherios Goulielmakis, Max-Planck-Institut für Quantenoptik (Germany)

13:30: Optically excited structural transition in atomic wires on surfaces at the quantum limit: a femtosecond ultrafast surface electron diffraction study (Invited Paper)
   Michael Horn von Hoegen, Univ. Düsseldorf-Essen (Germany) ... [10673-4]

14:00: Ultrafast near-field dynamics of polariton-exciton in WS2 slab waveguides at room temperature
   Michael Mrejen, Lena Yadgarov, Assaf Levanon III, Hadar Greener, Haim Suchowski, Tel Aviv Univ. (Israel) ... [10673-5]

14:20: Ultrafast charge cooling and carrier multiplication in semiconductor nanocrystals and superlatice
   Laurens D. Siebbeles, Indian Institute of Technology Kharagpur (India) ... [10673-7]

15:00: Plasmonics at the space-time limit (Invited Paper)
   Martin Aeschlimann, Technische Univ. Kaiserslautern (Germany) ... [10673-8]

Coffee Break .......................................................... Mon 15:30 to 15:50

SESSION 3

LOCATION: AUDITORIUM CASSIN ............................................. MON 15:50 TO 18:00

Ultrafast Excitation Dynamics II

Session Chair: Martin Aeschlimann, Technische Univ. Kaiserslautern (Germany)

   Joachim Burgdörfer, Technische Univ. Wien (Austria) ... [10673-9]

16:20: Attosecond metrology of phase-coherent multi-PHz currents in bulk solids
   Manish Garg, Minje Cho, Hye-Yong Kim, Harshit Lakhotia, Eleftherios Goulielmakis, Max-Planck-Institut für Quantenoptik (Germany) ... [10673-10]

16:40: Relaxation dynamics of nonequilibrium electrons in noble metals, dielectrics and itinerant ferromagnets
   Baerbel Rethfeld, Sebastian T. Weber, Nils Brouwer, Technische Univ. Kaiserslautern (Germany) ... [10673-11]

17:00: Contrasted dynamics in the carrier relaxation in wide band gap oxides
   Stéphane Guizard, Commissariat à l’Energie Atomique (France) ... [10673-12]

17:20: The optical conductivity of dielectrics after ultrafast multiphoton excitation
   Vladislav S. Yakovlev, Michael S. Wismer, Max-Planck-Institut für Quantenoptik (Germany) ... [10673-13]

17:40: Attosecond energy transfer dynamics in transparent solids
   Florian Siegrist, Max-Planck-Institut für Quantenoptik (Germany) and Ludwig-Maximilians-Universität, München (Germany); Annkatrin Sommer, Max-Planck-Institut für Quantenoptik (Germany); Malte Schröder, Tobias Boaklee, Max-Planck-Institut für Quantenoptik (Germany) and Ludwig-Maximilians-Universität, München (Germany) ... [10673-14]
CONFERENCE 10673

TUESDAY 24 APRIL

SESSION 4

LOCATION: AUDITORIUM CASSIN .............................. TUE 8:30 TO 10:30

Electron Dynamics in Nanosystems
Session Chair: Markus Münzenberg,
Georg-August-Universität Göttingen (Germany)

8:30: Interaction of electron beams with nanostructures and light beyond adiabatic approximations, Nahid Talebi, Max-Planck-Institut für Festkörperforschung (Germany); Jan Vogelgesang, Johannes Gutenberg-Universität Mainz (Germany); Carl von Ossietzky Universität Oldenburg (Germany). [10673-15]

8:50: High harmonic generation in graphene, Shatha Kaassamani, Rana Nicolas, David Gauthier, Dominik Franz, Willem Boutu, Hamed Merdji, CEA-Crt. de Saclay (France); Stephan W. Koch, Max-Planck-Institut für Quantenoptik (Germany). [10673-16]

9:10: Ultrafast phase transitions and excited state dynamics at surfaces (Invited Paper), Martin Wolf, Fritz-Haber-Institut der Max-Planck-Gesellschaft (Germany). [10673-17]

9:40: Ultrafast carrier dynamics in AlGaN/GaN superlattices by time-dependent reflectivity measurements, Felix Mahler, Klaus Reimann, Jens W. Tomm, Michael Woerner, Thomas Elsässer, Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie (Germany); Veit Hoffmann, Markus Weyers, Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (Germany). [10673-18]

10:00: Ultrafast electron diffraction and microscopy using coherent electron sources (Invited Paper), Claus Gieß, Georg-August-Universität Göttingen (Germany). [10673-20]

Coffee Break ....................................... TUE 10:30 to 10:55

SESSION 5

LOCATION: AUDITORIUM CASSIN .............................. TUE 10:55 TO 12:55

High Harmonic Generation, Atosecond Physics in Solids
Session Chair: Vladislav Yakovlev,
Max-Planck-Institut für Quantenoptik (Germany)

10:55: Microscopic modeling of ultrafast pulse generation in semiconductor waveguide structures, Dominik Franz, Rana Nicolas, Willem Boutu, CEA-Ctr. de Saclay (France); Liping Shi, Leibniz Universität Hannover, Institut für Quantenoptik (Germany); Qinint Ripsaal, Maria Khodoltsyoa, Blanca Iwan, CEA-Ctr. de Saclay (France); Ugaltz Elu Etxano, ICFO – Institut de Ciències Fòtoniques (Spain); Mitutin Kovacev, Leibniz Universität Hannover (Germany); Jens Biegert, ICFO – Institut de Ciències Fòtoniques (Spain); Hans Jakob Woerner, ETH Zurich (Switzerland). [10673-22]

11:25: Amplification of high harmonics in semiconductor waveguides, Dominik Franz, Rana Nicolas, Willem Boutu, CEA-Ctr. de Saclay (France); Liping Shi, Leibniz Universität Hannover, Institut für Quantenoptik (Germany); Qinint Ripsaal, Maria Khodoltsyoa, Blanca Iwan, CEA-Ctr. de Saclay (France); Ugaltz Elu Etxano, ICFO – Institut de Ciències Fòtoniques (Spain); Mitutin Kovacev, Leibniz Universität Hannover (Germany); Jens Biegert, ICFO – Institut de Ciències Fòtoniques (Spain); Hans Jakob Woerner, ETH Zurich (Switzerland). [10673-23]

12:05: Extreme ultraviolet high harmonic generation and spectroscopy in condensed materials, Tran Trung Luu, Zhong Yin, Arohi Jain, Thomas Gaumnitz, Hans Jakob Woerner, ETH Zurich (Switzerland). [10673-24]

12:25: Attosecond soft-X-ray spectroscopy of semimetal charge dynamics (Invited Paper), Jens Biegert, ICFO – Institut de Ciències Fòtoniques (Spain); Hans Jakob Woerner, ETH Zurich (Switzerland). [10673-25]

Lunch/Exhibition Break ..................................... TUE 12:55 TO 13:50

SESSION 6

LOCATION: AUDITORIUM CASSIN .............................. TUE 13:50 TO 16:10

Ultrafast Excitation Dynamics III
Session Chair: Eleftherios Goulielmakis,
Max-Planck-Institut für Quantenoptik (Germany)

13:50: Attosecond electron pulse trains and applications to time-resolved diffraction and microscopy (Invited Paper), Yuya Morimoto, Peter Baum, Ludwig-Maximilians-Universität München (Germany) and Max-Planck-Institut für Quantenoptik (Germany). [10673-26]

14:20: Band structure modification of wide-band-gap crystals by nonmonochromatic electron oscillations driven by high-intensity ultrashort pulses: multi-band and nonparabolic effects, Vitaly E. Gruzdev, Olga Sergeeva, Univ. of Missouri (United States). [10673-27]

14:40: Ultrafast excited state dynamics of NHC-Fe(II) complexes designed for light harvesting, Stefan Haacke, Li Liu, Univ. de Strasbourg (France) and CNRS (France); Edoardo Domenichini, Univ. de Strasbourg (France); Philippe Gros, Xavier Assfeld, Antonio Monari, Antonio Frances Monerris, Marc Beley, Cristina Cebrian Avila, Kevin Magra, Mariachiara Pastore, Univ. de Lorraine (France) and CNRS (France). [10673-28]

15:00: Ab-initio simulation for propagation of ultrashort laser pulse in solids, Mitsuhiro Uemoto, K. Yabana, Univ. of Toksuka (Japan). [10673-29]

15:20: Optoelectronic measurements of light fields by subcycle carrier injection in dielectrics, Dmitry Zimin, Max-Planck-Institut für Quantenoptik (Germany). [10673-30]

15:40: ELI-ALPS status report and research opportunities (Invited Paper), Dimitris Charalambidis, ELI-HU Nonprofit Kft. (Hungary); Giuseppe Sansone, Politecnico di Milano (Italy). [10673-31]

Coffee Break ....................................... TUE 16:10 TO 16:30

TUESDAY HOT TOPICS

LOCATION: SCHWEIZER AUDITORIUM .......................... TUE 16:30 TO 18:05

Hot Topics Session II

16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussel, Belgium.

16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany.

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain.

For additional details, please see page 7.

TUESDAY POSTER SESSION

LOCATION: HALL RHIN ................................. TUE 18:00 TO 19:30

Conference attendees are invited to attend the Photonics Europe poster session on Tuesday 18.00 to 19.30. Posters will be on display after 18.00 Tuesday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Ultrafast dynamics of Bloch surface waves in one-dimensional photonic crystal, Anna A. Popkova, Vladimir O. Bessonov, Irina V. Soboleva, Andrei A. Fedyanin, M.V. Lomonosov Moscow State Univ. (Russian Federation).

Ultrafast structural dynamics of metallic materials studied by photoelectron spectroscopy, Manuel de Anda Villa, Anna Levy, Institut des Nanosciences de Paris (France); Jérôme Gaudin, Ctr. Laser Intenses and Applications (France) and Ctr. National de la Recherche Scientifique (France); Sophie Cervera, Institut des NanoSciences de Paris (France); Benoit Chimier, Univ. Bordeaux 1 (France); P. Combis, Commissariat à l’Énergie Atomique (France); D. Descamps, Univ. de Bordeaux (France); N. Fedorov, Univ. Bordeaux 1 (France); R. Grisenti, Goethe-Univ. Frankfurt am Main (Germany); E. Lamour, S. Macé, Institut des NanoSciences de Paris (France); P. Martin, S. Petit, Univ. Bordeaux 1 (France); G. Prigent, Institut des NanoSciences de Paris (France); V. Recoules, Commissariat à l’Énergie Atomique (France); J. P. Rozet, Institut des NanoSciences de Paris (France); L. Soulard, Commissariat à l’Énergie Atomique (France); S. Steydli, Martino Trassinelli, Institut des NanoSciences de Paris (France); K. Ueda, Tohoku Univ. (Japan); L. Videau, Commissariat à l’Énergie Atomique (France); S. Macé, Institut des NanoSciences de Paris (France); E. Lamour, S. Macé, Institut des NanoSciences de Paris (France); K. Ueda, Tohoku Univ. (Japan); L. Videau, Commissariat à l’Énergie Atomique (France).

Quantum entanglement, Kondo effect, and electronic transport in quantum dots system, Sahib Babaeo Tooski, Iran Elite Young Researcher Club, Islamic Azad Univ. (Iran, Islamic Republic of).
CONFERENCE 10674
LOCATION: CHURCHILL
Monday–Wednesday 23–25 April 2018 • Proceedings of SPIE Vol. 10674

Quantum Technologies

Conference Chairs: Jürgen Stuhler, TOPTICA Photonics AG (Germany); Andrew J. Shields, Toshiba Research Europe Ltd. (United Kingdom); Miles J. Padgett, Univ. of Glasgow (United Kingdom)

Programme Committee: Christoph Becher, Univ. des Saarlandes (Germany); Oliver Benson, Humboldt-Univ. zu Berlin (Germany); Rainer Blatt, Leopold-Franzens-Univ. Innsbruck (Austria); Kai Bongs, The Univ. of Birmingham (United Kingdom); Philippe Bouyer, Institut d’Optique Graduate School LP2N (France), Muquans Bordeaux (France); Eleni Diamanti, Télécom ParisTech (France); Saraucci, Univ. Paris 7-Diderot (France); Thomas Gerrits, National Institute of Standards and Technology (United States); Michael Jetter, Univ. Stuttgart (Germany); Christian Kurtis, National Univ. of Singapore (Singapore); Eugene S. Polzik, Niels Bohr Institute (Denmark); Valerio Pruneri, ICF - Instituto de Ciencias Fotónicas (Spain); Bruno Sanguinetti, id Quantique SA (Switzerland); Thomas Strohm, Max-Planck-Institut für Intelligente Systeme (Germany)

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ............... MON 9:00 TO 11:00

Hot Topics Session I
9:00 to 9:15
Opening Remarks and Awards Presentation
9:15 to 9:25
Welcome
Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30: Introduction to Hot Topics
Thierry Geoffroy, Oxxius, France
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

Coffee Break ...................................... Mon 11:00 to 11:25

OPENING REMARKS
LOCATION: CHURCHILL ................................. 11:25 TO 11:30

SESSION 1
LOCATION: CHURCHILL ................................. MON 11:30 TO 12:40

Atomic Spectroscopy and Clocks
Session Chair: Jürgen Stuhler, TOPTICA Photonics AG (Germany)
11:30: Quantum-enhanced spectroscopy of trapped ionic species (Invited Paper), Piet O. Schmidt, Physikalisch-Technische Bundesanstalt (Germany) . [10674-1]
12:00: A dual-frequency two-photon molecular clock with cold trapped HD + ions, Florin L. Constantini, Lab. de Physique des Lasers, Atomes et Molecules (France) . [10674-2]
12:20: Opticlock: towards an optical single-ion clock for applications beyond basic research, Nils Huntemann, Physikalisch-Technische Bundesanstalt (Germany); Stefan Brakhane, Dieter Meschede, Rheinische Friedrich-Wilhelms-Univ. Bonn (Germany); Michael Johannig, Christof Wunderlich, Univ. Siegen (Germany); Bassem Arar, Andreas Wicht, Ferdinand-Braun-Institut (Germany); Robert Jördens, QUARTIQ GmbH (Germany); Maximilian Biethahn, Michael Flämmich, VACOM Vakuum Komponenten & Messtechnik GmbH (Germany); Florian Karlewski, József Fortágh, HighFinesse GmbH (Germany); Enrico Vogt, Qubig GmbH (Germany); Maurice Lessing, Ronald Holzwarth, Menlo Systems GmbH (Germany); Christian Tamm, Ekehard Peik, Alexandre Didier, Tanja E. Mehlstäubler, Piet O. Schmidt, Physikalisch-Technische Bundesanstalt (Germany); Florian Kienle, Wilhelm Kaenders, TOPTICA Photonics AG (Germany) . [10674-3]
Lunch Break ...................................... Mon 12:40 to 13:50
TUESDAY 24 APRIL

SESSION 4

LOCATION: CHURCHILL  TUE 8:30 TO 10:10

Quantum Imaging

8:30: Quantum temporal imaging with squeezed light, Giuseppe Patra, Lab. de Physique des Lasers, Atomes et Molécules (France); Dmtry B. Horoshko, Lab. de Physique des Lasers, Atomes et Molécules (France) and B.J. Stepanov Institute of Physics (Belarus); Junheng Shi, Lab. de Physique des Lasers, Atomes et Molécules (France) and Univ. de Sciences et Technologies de Lille (France)  [10674-12]

8:50: Super-resolution quantum imaging at the Heisenberg limit, Bânse Bessire, Manuel Unternährer, Univ. Bern (Switzerland); Leonardo Gasparini, Majid Zarghami, Matteo Perenzoni, Fondazione Bruno Kessler (Italy); Andrea Stefanov, Univ. Bern (Switzerland)  [10674-13]

9:10: Progress in quantum optical lithography, Eugen Pavel, Storex Technologies Inc. (Romania)  [10674-14]

9:30: Correlation plenoptic imaging with entangled photons, Francesco Maria Di Lenia, Univ. degli Studi di Bari Aldo Moro (Italy); Alessia Avella, Istituto Nazionale di Ricerca Metrologica (Italy); Milena D’Angelo, Augusto Garuccio, Univ. degli Studi di Bari Aldo Moro (Italy) and Istituto Nazionale di Fisica Nucleare (Italy) and Istituto Nazionale di Ottica (Italy); Francesco Pepe, Univ. degli Studi di Bari Aldo Moro (Italy); Ivan Rau Berchera, Istituto Nazionale di Ricerca Metrologica (Italy); Giuliano Scarcelli, Univ. of Maryland, College Park (United States)  [10674-15]

9:50: The orbital angular momentum of light for quantum applications, Laurence Pruvost, Aurélien Chopinaud, Bruno Viairis de Lesegno, Ctr. National de la Recherche Scientifique (France); Marion Jacquey, Univ. Paris-Sud 11 (France) and Ctr. National de la Recherche Scientifique (France)  [10674-16]

Coffee Break  [10:10 to 10:40]

SESSION 5

LOCATION: CHURCHILL  TUE 10:40 TO 12:30

Quantum Components I

10:40: High-performance semiconductor single photon sources (Invited Paper), Loic Lanco, Lab. de Photonique et de Nanostructures (France)  [10674-17]

11:10: Single photon extraction from defects in hBN using a tapered fiber, Andreas W. Schell, ICFO - Institut de Ciències Fotòniques (Spain); Fabian Ripka, Harald Kübler, Robert Löw, Univ. Stuttgart (Germany)  [10674-21]

11:30: Metallic nanorings for enhanced extraction of light from single InAs/GaAs quantum dots, Oliver Trojak, Univ. of Southampton (United Kingdom); Jin D. Song, Korea Institute of Science and Technology (Korea, Republic of); Mikhail I. Kolobov, Univ. of Sciences et Technologies de Lille (France)  [10674-12]

11:50: Hybrid plasmonic waveguide coupled to a single organic dye molecule, Samuele Grandi, Andrea Stefanov, Univ. Bern (Switzerland); Majid Zarghami, Matteo Perenzoni, Fondazione Bruno Kessler (Italy); Sebastien Boissier, Kyle D. Major, Imperial College London (United Kingdom); Christopher Reardon, Thomas F. Krauss, Univ. of York (United Kingdom); Igan Coullon, E. A. Hinds, Alex Clark, Imperial College London (United Kingdom)  [10674-19]

12:10: On-demand single-photon source based on thermal rubidium, Fabian Ripka, Harald Kübler, Robert Löw, Univ. Stuttgart (Germany)  [10674-21]

Lunch/Exhibition Break  [12:30 to 13:30]

SESSION 6

LOCATION: CHURCHILL  TUE 13:50 TO 16:00

Quantum Technology


14:20: Alignment requirements of Fabry-Perot microresonators for ion trap quantum information processing, Dean Clarke, Peter Horak, Optoelectronics Research Ctr. (United Kingdom)  [10674-23]

14:40: Genetic quantum measurements, Ivo Pietro Degiovanni, Istituto Nazionale di Ricerca Metrologica (Italy); Salvatore Virzi, Istituto Nazionale di Ricerca Metrologica (Italy) and Univ. degli Studi di Torino (Italy); Enrico Rebufello, Istituto Nazionale di Ricerca Metrologica (Italy) and Politecnico di Torino (Italy); Alessia Avella, Fabrizio Piacentini, Giorgio Brigila, Marco Gramigna, Massimiliano Cottini, Istituto Nazionale di Ricerca Metrologica (Italy)  [10674-24]

15:00: \( L_{Y_{1}}\cdot H_{O_{1}}\cdot F_{F_{1}} \): a candidate material for the implementation of solid state qubits, Adrian Beckert, Paul Scherrer Institut (Switzerland); Joe Bailey, Paul Scherrer Institut (Switzerland) and Ecole Polytechnique Federale de Lausanne (Switzerland); Guy Matmon, London Ctr. for Nanotechnology (United Kingdom); Simon Gerber, Hans Sig, Paul Scherrer Institut (Switzerland); Gabriel Aeppli, Paul Scherrer Institut (Switzerland) and Ecole Polytechnique Federale de Lausanne (Switzerland)  [10674-25]

15:20: Bridging integrated waveguides with single photon emitters, Christophe Couteau, Stefano Pierini, Xiaolun Xu, Josslyn Beltram-Madrigal, Renaud Bachelot, Sylvain Blaize, Univ. de Technologie Troyes  [10674-26]

15:40: On-chip excitation of diamond colour centres using low-loss dielectric-loaded surface plasmon polarization waveguides, Szamper, Shalesh Kumar, Sergey I. Bozhevolnyi, Univ. of Southern Denmark (Denmark)  [10674-27]

Coffee Break  [16:00 to 16:30]

SESSION 7

LOCATION: SCHWEITZER AUDITORIUM  TUE 16:30 TO 18:05

Quantum Components II

16:30 to 16:35: Introduction, Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain

16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses, Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany  [10674-49]

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes, Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain

For additional details, please see page 7.

TUESDAY POSTER SESSION

LOCATION: HALL RHIN  TUE 18:00 TO 19:30

Conference attendees are invited to attend the Photonics Europe poster session on Tuesday 18.00 to 19.30. Posters will be on display after 10.00 Tuesday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/34963.xml and on page 10.

Complete security model for authentication of OOK protocols, Aleksandar D. Stojanovic, Instituto de Telecomunicaciones (Portugal)  [10674-48]

Quantum state comparison amplifier with feedforward state correction, Luca Mazzarella, Univ. of Strathclyde (United Kingdom); Ross Donaldson, Robert Collins, Ugo Zanforlin, Heriot-Watt Univ. (United Kingdom); Gian Tarsi, Univ. of Strathclyde (United Kingdom); Gerald Buller, John Jeffers, Heriot-Watt Univ. (United Kingdom)  [10674-49]

Zerodur-based optical benches for quantum sensor technology, Patrick Windpassinger, André Wenzlawski, Moritz Mihm, Pierre Marburger, Johannes Gutenberg Univ. Mainz (Germany)  [10674-50]

Enhanced time-bin quantum channels by use of migrated spatial or polarization quantum states, Salem F. Hegazy, Cairo Univ. (Egypt); Salah S. A. Obayya, Zewail City of Science and Technology (Egy)  [10674-50]

Measuring orbital angular momentum of light by using a trapped atom, Naemeh Mohseni, Institute for Advanced Studies in Basic Sciences (Iran, Islamic Republic of)  [10674-52]

Time-integrated and time-resolved VUV LIBS: a comparative study, Syed sadaf Zehra, Dublin City Univ. (Ireland); Pernigotti Nicolaos, Univ. degli Studi di Padova (Italy); John Costello, Paddy Hayden, Dublin City Univ. (Ireland)  [10674-53]

In THz band Josephson junction can work as the superwide receiver, the frequency meter and the tuner of generators, Alexander G. Denisov, Qiu Jinghui, Harbin Institute of Technology (China)  [10674-54]

Single- and multidimensional integrated optic photon sources for quantum communication, Rohit K. Ramakrishnan, Varun Raghunathan, Praveen Natarajan, Srinivas Talapatra, Indian Institute of Technology Madras (India)  [10674-55]

European coordinated metrological effort for quantum cryptography, Marco Gramigna, Istituto Nazionale di Ricerca Metrologica (Italy)  [10674-57]

For additional details, please see page 7.

Onsite News: www.spie.org/PEnews  •  #SPIEPhotonicsEurope
CONFERENCE 10674

10:00: Semiconductor quantum dots as photon sources in quantum communication networks (Invited Paper), Dirk R. Englund, Massachusetts Institute of Technology (United States) ............................................... [10674-47]  10:20: Quantum components II Session Chair: Dirk R. Englund, Massachusetts Institute of Technology (United States)

10:30: Semiconductor quantum dots as photon sources in quantum networks (Invited Paper), Tim Kroh, Andreas Ahirch, Chris Müller, Humboldt-Univ. zu Berlin (Germany); Andreas W. Schell, IFI – Institut für die Künstliche Intelligenz und die Grenzgebiete der Informatik und Mathematik (Istituto Italiano di Tecnologia) (Italy) .................................................. [10674-28]  10:50: Coffee break .......................................... Wed 10:20 to 10:50

SESSION 8 LOCATION: CHURCHILL .......................... WED 10:50 to 12:40

Quantum Communications I

Session Chair: Christopher J. Chunnilall, National Physical Lab. (United Kingdom)

10:50: Quantum communication across deployed fibre (Invited Paper), Wolfgang Tittel, Univ. of Calgary (Canada) .................................................. [10674-33]  11:20: All-optical synchronization for quantum communication networks, Bruno Fedrici, Sébastien Tanzilli, Virginia D’Auria, Laurent Labonté, Olivier Ailbert, Lab. de Physique de la Matière Condensée (France) .................................................. [10674-36]  11:40: Quantum interference with frequency-locked dissimilar light sources, Chris Müller, Tim Kroh, Humboldt-Univ. zu Berlin (Germany); Yanling Teng, Univ. of Illinois (United States); Andreas Ahirch, Oliver Benson, Humboldt-Univ. zu Berlin (Germany) .................................................. [10674-34]  12:00: Optical injection locking applied to quantum key distribution protocols, George L. Roberts, James F. Dynes, Toshiba Research Europe Ltd. (United Kingdom); Seb J. Savory, Univ. of Cambridge (United Kingdom); Zinjirou L. Yuan, Andrew J. Shields, Marco Lucamarini, Toshiba Research Europe Ltd. (United Kingdom) .................................................. [10674-35]  12:20: Quantum optical state comparison amplification of coherent states, Ross Donaldson, Heriot-Watt Univ. (United Kingdom); Luca Mazzarella, Univ. of Strathclyde (United Kingdom); Robert Collins, Ugo Zanforlin, Heriot-Watt Univ. (United Kingdom); John Jeffers, Univ. of Strathclyde (United Kingdom); Gerald Buller, Heriot-Watt Univ. (United Kingdom) .................................................. [10674-37]  12:40: Lunch/Exhibition Break ............................. Wed 12:40 to 13:50
CONFERENCE 10675
LOCATION: SALON 2
Monday–Tuesday 23–24 April 2018 • Proceedings of SPIE Vol. 10675
3D Printed Optics and Additive Photonic Manufacturing

Conference Chairs: Alois M. Herkommer, Univ. Stuttgart (Germany); Georg von Freymann, Technische Univ. Kaiserslautern (Germany); Manuel Flury, Institut National des Sciences Appliquées de Strasbourg (France)
Programme Committee: Klaus Bade, Karlsruher Institut für Technologie (Germany); Alain Bosseboeuf, Univ. Paris-Sud 11 (France); Thierry Engel, IREPA LASER (France); François Geiskopf, Institut National des Sciences Appliquées de Strasbourg (France); Harald Giessen, Univ. Stuttgart (Germany); Kevin J. Heggarty, Télécom Bretagne (France); Hans Peter Herzig, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Christian Koos, Karlsruher Institut für Technologie (Germany); Pierre Renaud, Institut National des Sciences Appliquées de Strasbourg (France); Michael Thiel, Nanoscope GmbH (Germany); Michael Totzeck, Carl Zeiss SMT GmbH (Germany); Reinhard Voelkel, SUSS MicroOptics SA (Switzerland); Ricky D. Wildman, The Univ. of Nottingham (United Kingdom)

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM .......... MON 9:00 TO 11:00
Hot Topics Session I
9:00 to 9:15: Opening Remarks and Awards Presentation
9:15 to 9:25: Welcome
Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30: Introduction to Hot Topics
Thierry Georges, Oxilux, France
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom
For additional details please visit page 6.

Coffee Break ................................................ Mon 11:00 to 11:25

OPENING REMARKS
LOCATION: SALON 2 .......... MON 11:25 TO 11:30

SESSION 1
LOCATION: SALON 2 .......... MON 11:30 TO 12:40
Hype Technology in 3D Printing
Session Chair: Georg von Freymann, Technische Univ. Kaiserslautern (Germany)
11:30: 3D printing for versatile optics (Invited Paper), Jyrki Saarinen, Birat G. Assafa, Markku Pekkarinen, Univ. of Eastern Finland (Finland); Joris Biskop, Luxelux Group B.V. (Belgium). .................. [10675-1]
12:00: Optimized ceramic mirror made by 3D printing, Nicolas Rousselet, 3DCeram (France). .................. [10675-2]
12:20: 3D printing for astronomical mirrors, Carolyn Atkins, UK Astronomy Technology Ctr. (United Kingdom); Sabri Lemained, Ctr. National de la Recherche Scientifique (France) and Lab. d’Astrophysique de Marseille (France). .................. [10675-3]
Lunch Break ........................................ Mon 12:40 to 13:40

SESSION 2
LOCATION: SALON 2 .......... MON 13:40 TO 15:10
Integrated Optics and 3D Printing
Session Chair: Alois M. Herkommer, Univ. Stuttgart (Germany)
14:10: Inkjet printing from waveguiding to plasmonics, Fabian Lütolf, Ctr. Suisse d’Electronique et de Microtechnique SA (Switzerland); Pius Theiler, ETH Zurich (Switzerland); Luc Dümpelmann, Ctr. Suisse d’Electronique et de Microtechnique SA (Switzerland); Judith Müller, Univ. Basel (Switzerland); Saleh Aghajani, Politecnico di Milano (Italy); Benjamin Gallinet, Rolando Ferrini, Ctr. Suisse d’Electronique et de Microtechnique SA (Switzerland). .................. [10675-5]
14:30: Out of plane couplers for direct laser-written polymer waveguides on optical chips, Alexander Landowski, State Research Ctr. for Optics and Material Sciences, Technische Univ. Kaiserslautern (Germany) and Graduate School Materials Science in Mainz (Germany); Stefan Guckenbieli, Marius Schönberg, Jonas Gutsche, State Research Ctr. for Optics and Material Sciences, Technische Univ. Kaiserslautern (Germany); Georg von Freymann, State Research Ctr. for Optics and Material Sciences, Technische Univ. Kaiserslautern (Germany) and Fraunhofer Institute for Industrial Mathematics ITWM (Germany); Artur Widera, State Research Ctr. for Optics and Material Sciences, Technische Univ. Kaiserslautern (Germany) and Graduate School Materials Science in Mainz (Germany). .................. [10675-6]
14:50: Multiplexing vortex beams using miniaturized 3D printed optical phase elements, Shlomi Lightman, Gilad Hurvitz, Raz Gvishi, Soreq Nuclear Research Ctr. (Israel); Ahy Ari, Tel Aviv Univ. (Israel). .................. [10675-7]
Coffee Break ........................................ Mon 15:10 to 15:40

SESSION 3
LOCATION: SALON 2 .......... MON 15:40 TO 17:50
Two Photon Lithography
Session Chair: Matthias Efifer, Technische Univ. Kaiserslautern (Germany)
15:40: Complex 3D printed microoptics: towards first applications (Invited Paper), Harald Giessen, Univ. Stuttgart (Germany). .................. [10675-8]
16:10: Zero overlap stitching of microlens arrays with two-photon polymerisation, Sam Dehaeck, Benoit Scheid, Pierre Lambert, Univ. Libre de Bruxelles (Belgium). .................. [10675-9]
16:30: Hybrid additive and subtractive laser 3D microprocessing in glass/ polymer microsystems for chemical sensing applications, Titas Titkñas, Vilnius Univ. (Lithuania) and Femtika Ltd. (Lithuania); Mangirdas Malinauskas, Domas Paipulas, Roaldas Gadonas, Vilnius Univ. (Lithuania); Yves Bellouard, Ecole Polytechnique Fédérale de Lausanne (Switzerland). .................. [10675-10]
16:50: Rapid 3D printing in mesoscale, Mangirdas Malinauskas, Darius Gaielius, Sima Rekstyte, Vilnius Univ. (Lithuania); Saulius Juodkazis, Swinburne Univ. of Technology (Australia). .................. [10675-11]
MONDAY POSTER SESSION

LOCATION: HALL RHIN ................................ MON 17:30 TO 19:00

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Effectiveness of fine-pitch lenticular lens arrays fabricated using projection lithography for improving resolution and clarity in switching of two pictures, Toshiyuki Hayashi, Satoshi Miyazawa, Yuta Morizane, Tokyo Denki Univ. (Japan) ........................................ [10675-41]

Fabrication test of reflective complex optical structure by 3D printing, Lihong Liu, ICube, Univ. de Strasbourg (France); Thierry Engell, Institut National des Sciences Appliquées de Strasbourg (France); Pierre Pfeiffer, Université de Strasbourg (France); Amadou Coulibaly, National des Sciences Appliquées de Strasbourg (France); Sylvain Lecler, ICube, Univ. de Strasbourg (France); François Geiskopf, Laboratoire d'Optique Appliquée, CNRS (France) and Ctr. National de la Recherche Scientifique (France) and Institut Investi de Strasbourg (France); Denis Cavallucci, Manuel Flury, Institut National des Sciences Appliquées de Strasbourg (France) ................................ [... [10675-25]

Selective bio-functionalization of subdiffractional polymer structures, Eljasa Murtezic, Richard Wolfhoven, Institute of Applied Physics, Johannes Kepler Univ. Linz (Austria); Jaroslaw Jacak, Institute of Applied Physics, Johannes Kepler Univ. Linz (Austria) and Upper Austria Univ. of Applied Sciences (Austria); Thomas A. Klar, Institute of Applied Physics, Johannes Kepler Univ. Linz (Austria) ................................ [10675-26]

Wrinkled axicon and 3D metasurfaces, Mangirdas Malinauskas, Albertas Zukauskas, Vilnius Univ. (Lithuania); Armandas Balciutis, Swinburne Univ. of Technology (Australia); Benjamin Sanchez-Padilla, David Halobryan, Elektromagnitikai Szokaszontagozasok 1 (France); Samuel Jodkazkas, Saulius Jodkazkas, Swinburne Univ. of Technology (Australia) ................................ [10675-27]

3D opto-structuring of ceramics at nanoscale, Mangirdas Malinauskas, Simas Sakiranovas, Viktorija Padolskite, Darius Galievicius, Vilnius Univ. (Lithuania); Vygenas Mizeikis, Shizuoka Univ. (Japan); Kestutis Stalinius, Univ. Politecnica de Catalunya (Spain); Saulius Jodkazkas, Swinburne Univ. of Technology (Australia) ................ [10675-28]

Polarization influence in 3D femtosecond direct laser writing nanolithography, Mangirdas Malinauskas, Simonas Varnapickas, Simas Rekotyte, Darius Galievicius, Vilnius Univ. (Lithuania); Saulius Jodkazkas, Swinburne Univ. of Technology (Australia) ................................ [10675-29]

Real-time stop-flow two-photon lithography for microparticle array and particle cluster array, Bing Xu, Dong Wu, Yanlei Hu, Univ. of Science and Technology of China (China) ................ [10675-30]

Helical microstructures fabricated by femtosecond structured optical vortices, Jincheng Ni, Yanlei Hu, Jiawen Li, Dong Wu, Univ. of Science and Technology of China (China) .................. [10675-31]

A coupled temperature-displacement-diffusion phase field model for grain growth during laser-aidered metal deposition, Fikret Kh. Mirzade, Institute on Laser and Information Part Technologies of the Russian Academy of Sciences (Russia) and IIT RAS - Branch of the FSRC “Crystallography and Photonics” (Russia) ........................ [10675-32]

Fabrication of 3D X-ray compound refractive lenses by 3D printing, Mikhael Savelyev, Levian Ickzhidze, Vitaliy Podgaetsky, Sergey V. Sellsichev, National Research Univ. of Electronic Technology (Russian Federation) ................................ [10675-36]

Temperature distribution of gas powder jet formed by coaxial nozzle in laser metal deposition, Yuri N. Zavalov, Alexander V. Dubrov, Fikret Kh. Mirzade, Research Ctr. Crystallography and Photonics of the Russian Academy of Sciences (Russian Federation); Elena S. Makarova, Research Ctr. Crystallography and Photonics of the Russian Academy of Sciences (Russian Federation); Nikolay G. Dubrov, Vladimir D. Dubrov, Research Ctr. Crystallography and Photonics of the Russian Academy of Sciences (Russian Federation) ........................ [10675-39]

On numerical modeling of heat transfer and fluid flow in selective laser melting of metal powder bed, Fikret Kh. Mirzade, IIT RAS - Branch of the FSRC “Crystallography and Photonics” (Russia Federation); Alexander V. Dubrov, Vladimir D. Dubrov, Institute on Laser and Information Part Technologies of the Russian Academy of Sciences (Russian Federation) ................................ [10675-40]

Optimization of process parameters at laser powder deposition using numerical simulation of thermal behavior, Alexander V. Dubrov, Fikret Kh. Mirzade, Vladimir D. Dubrov, Pavel S. Rodin, IIT RAS - Branch of the FSRC “Crystallography and Photonics” (Russia Federation) ........................ [10675-39]

On multiscale modelling of microstructure evolution in laser metal deposition process, Alexander V. Dubrov, Fikret Kh. Mirzade, Vladimir D. Dubrov, IIT RAS - Branch of the FSRC “Crystallography and Photonics” (Russia Federation) ................................ [10675-40]
SESSION 5
LOCATION: SALON 2 ................................. TUE 10:50 TO 12:00

Direct Laser Writing
Session Chair: Manuel Flury, Institut National des Sciences Appliquées de Strasbourg (France)

10:50: Direct laser writing of 2D and 3D submicrostructures via optically induced local thermal effect (Invited Paper), Ngoc Diep Lai, Ecole Normale Supérieure de Cachan (France) ................................................... [10675-18]

11:20: Direct laser-written metal and metal-composite microstructures, Erik H. Waller, Technische Univ. Kaiserslautern (Germany); Georg von Freymann, Technische Univ. Kaiserslautern (Germany) and Fraunhofer Institute for Industrial Mathematics (Germany) ........ [10675-19]

11:40: 3D-printed dielectric devices for the THz range, Felipe Beltran-Mejia, Instituto Nacional de Telecomunicaciones – Inatel (Brazil); David J. Hahn, Marcel Weidenbach, Arno Rehn, Jannik Lehr, Stefan F. Busch, Philipps-Univ. Marburg (Germany); Jan C. Balzer, Univ. Duisburg-Essen (Germany); Martin Koch, Philipps-Univ. Marburg (Germany); Leonie Gomell, Univ. of Marburg (Germany) ................................................... [10675-20]

SESSION 6
LOCATION: SALON 2 ................................. TUE 12:00 TO 12:50

Additive Manufacturing-Additive Layer-Powder
Session Chair: Manuel Flury, Institut National des Sciences Appliquées de Strasbourg (France)

12:00: LMD-CLAD® additive manufacturing: achieving trends of distortion and locating residual stresses in scale parts through time-efficient simulation (Invited Paper), Ludovic Kounde, IREPA LASER (France); Thierry Engel, Institut National des Sciences Appliquées de Strasbourg (France) and IREPA LASER (France); Didier Boisselier, IREPA LASER (France) ........................................... [10675-21]

12:30: Production of glass filters by selective laser sintering, Anne-Marie Schwager, Jens Bliedtner, Kerstin Götze, Armin Bruder, Ernst-Abbe-Hochschule Jena (Germany) ........................... [10675-22]

TUESDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM .......................... TUE 16:30 TO 18:05

Hot Topics Session II

16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussel, Belgium

16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain

For additional details, please see page 7.
Digital Optics for Immersive Displays (DOID18)

Conference Chairs: Bernard C. Kress, Microsoft Corp. (United States); Wolfgang Osten, Institut für Technische Optik (Germany); Hagen Stolle, SeeReal Technologies GmbH (Germany)

Programme Committee: Tibor Balogh, Hologрафika Kft. (Hungary); Christian Bossshart, Ctr. Suisse d’Electronique et de Microtechnique SA (Switzerland); Federico Capasso, Harvard School of Engineering and Applied Sciences (United States); Jerome Carollo, Google (United States); Arie den Boef, ASM NL Netherlands B.V. (Netherlands); Andreas Hermerschmidt, HOLOEYE Photonics AG (Germany); Hans Peter Herzig, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Tobias Haist, Institut für Technische Optik (Germany); Marc D. HimeI, JENOPTIK Optical Systems, LLC (United States); Hong Hua, College of Optical Sciences, The Univ. of Arizona (United States); Fu-Chung Huang, NVIDIA Corp. (United States); Norbert Kerwien, Carl Zeiss AG (Germany); Lutz Körner, INTERGLASS Technology AG (Switzerland); ByoungHo Lee, Seoul National Univ. (Korea, Republic of); Cindy Lee, KHD Ltd. (China); Scott McEldowney, Oculus VR, LLC (United States); Juan C. Miñano, Limbak 4P.S.L. (Spain); Imars Osmanis, Lightspace Technologies, SIA (Latvia); Silvania F. Pereira, Technische Univ. Delft (Netherlands); Christophere Perez, Magic Leap, Inc. (United States); Pascal Picart, Univ. du Maine (France); Demetri Psaltis, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Monika Ritsch-Marte, Medizinische Univ. Innsbruck (Austria); Khaled Sarayeddine; Robert Stevens, Adlens Ltd (United Kingdom); Hagen Stolle, SeeReal Technologies GmbH (Germany); Adrian Travis, Microsoft Corp. (United States); Reinhard Voelkel, SUSS MicroOptics SA (Switzerland); Angus Wu, Huawei Technologies Co., Ltd. (United States); Frank Wyrwoski, Friedrich-Schiller-Univ. Jena (Germany)

Conference Sponsors:

TUESDAY 24 APRIL

OPENING REMARKS

LOCATION: ETOILE C .................................................. 8:25 TO 8:30

SESSION 1

LOCATION: ETOILE C .................................. TUE 8:30 TO 10:30

Optical Challenges for Next-generation AR/VR headsets

Session Chair: Bernard C. Kress, Microsoft Corp. (United States)

8:30: AR technologies enabling next generation surgical procedures (Keynote Presentation), Luc Soler, IRCAD/HU Strasbourg (France) [10676-1]

9:00: Optical challenges for next-generation AR headsets (Invited Paper), Hong Hua, College of Optical Sciences, The Univ. of Arizona (United States) .................................................. [10676-2]

9:30: Field of view: not just a number, Brian M. Wheelwright, Yusufu Sulai, Melissa Geng, Seilo Luanava, Weichuan Gao, Jacques Gollier, Oculus VR, LLC (United States) .................................................. [10676-3]

9:50: Optical design challenges from satellite imaging to augmented reality displays, Louahab Noui, DAQRI (United Kingdom) ................. [10676-4]

10:10: Viewing optics for immersive near-eye displays: pupil swim/size and weight/stray light, Melissa Geng, Brian M. Wheelwright, Fenglin Peng, Wei Sze T. Lam, YiJing Fu, Alex Sohn, Yusufu Sulai, Oculus VR, LLC (United States); Brett J. Bryars, Bryars Optical Consulting (United States); Scott McEldowney, Jacques Gollier, Oculus VR, LLC (United States). .................................................. [10676-5]

Coffee Break. .................................................. Tue 10:30 TO 10:50

SESSION 2

LOCATION: ETOILE C .................................................. TUE 10:50 TO 13:00

Design, Fabrication and Testing of Novel Optics for AR/VR systems

Session Chair: Lutz Körner, INTERGLASS Technology AG (Switzerland)

10:50: Ultra-compact multichannel freeform optics for 4xWUXGA OLED microdisplays (Invited Paper), Marina Buljan, Limbak 4P.S.L. (Spain); Bharathwaj Narasimhan, Pablo Benítez, Juan Carlos Miñano, Limbak 4P.S.L. (Spain), Univ. Politècnica de Madrid (Spain); Jesús López, Dejan Grabovičkić, Limbak 4P.S.L. (Spain); Milena Nikolić, Univ. Politècnica de Madrid (Spain); Eduardo Pérez, Jorge Gorospe, Limbak 4P.S.L. (Spain); Eduardo Sanchez, Juan Carlos González, Univ. Politècnica de Madrid (Spain); Pablo Zamora, Rubén Mohedano, Limbak 4P.S.L. (Spain). ........................................................................... [10676-6]


11:40: Casting technology for embedding optical elements into prescription spectacle lenses, Lutz Körner, Daniel Muff, INTERGLASS Technology AG (Switzerland) . ........................................................................... [10676-8]

12:00: Monolithic mold light guide for near to eye optical system, Khaled Sarayeddine, OPTINVENT S.A. (France) . ........................................................................... [10676-9]

12:20: Optical metrology for the test and fabrication of immersive display components and subsystems, Peter J. de Groot, Leslie L. Deck, Zygro Corporation (United States). ........................................................................... [10676-10]


Lunch/Exhibition Break. .................................................. Tue 13:00 TO 14:00
TUESDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM  
TUE 16:30 TO 18:05

Hot Topics Session II

16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussel, Belgium

16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain

For additional details, please see page 7.

POSTER PRESENTATIONS

LOCATION: HALL RHN  
TUE 18:00 TO 19:30

DOID Student Optical Design Challenge for VR/AR and MR

SPIE is joining with the world leading companies in VR, AR and MR HMD hardware development to organize the first Student Optical Design Challenge at the Digital Optics for Immersive Displays (DOID) Conference during SPIE Photonics Europe in Strasbourg.

The awards are designed to encourage and acknowledge excellence in oral and poster student paper presentations, and bridge the gap between traditional academic optics teaching and tangible industry expectations for today's immersive display products.

Conference attendees are invited to attend the Photonics Europe poster session on Tuesday 18:00. Posters will be on display after 10:00 Tuesday morning in the Hall Rhn. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Poster author, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Improving image quality of 360 degree viewable holographic display system by applying a speckle reduction technique and a spatial filtering, Yongjun Lim, Keohoon Hong, Hayan Kim, Minsoo Park, Jin-Woong Kim, Electronics and Telecommunications Research Institute (Korea, Republic of).  

[10676-20]

Design of a full color large field-of-view see-through near eye display, Yang Jiaming, Univ. de Strasbourg (France).  

[10676-100]

Design of a freeform gradient-index prism for mixed reality head mounted display, Anthony J. Yee, Wanuye Song, Nicholas Takaki, Tianyi Yang, Yang Zhao, Yun Hu, Vincent Pouliot, Laura Chretien, Duncan T. Moore, Univ. of Rochester (United States).  

[10676-101]

Holographic glasses with dynamic eyebox, Changwon Jang, Kiseung Bang, Byoungho Lee, Seoul National Univ. (Korea, Republic of).  

[10676-102]

Optical design, assembly and characterization of a holographic head mounted display, Anne Gartner, Ernst-Abbe-Hochschule Jena (Germany); Ralf Häussler, SeeReal Technologies GmbH (Germany); Ernst-Abbe-Hochschule Jena (Germany); Hagen Stolle, SeeReal Technologies GmbH (Germany).  

[10676-103]

Mitigating vergence-accommodation conflict for near-eye displays via deformable beamsplitters, David Dunn, Qian Dong, Henry Fuchs, The Univ. of North Carolina at Chapel Hill (United States).  

[10676-104]

Designing of a monocular see-through smart glass imaging system, Tatiana A. Koneva, Galina E. Romanova, ITMO Univ. (Russian Federation).  

[10676-105]

Multiple reflection bug-eye design, Alexis Benamira, Institut d’Optique Graduate School (France).  

[10676-106]

Adaptive focus for AR glasses based on eye-tracking and/or eye’s lens analysis, and real-time image processing, Alexandre Bouchez, Jules Guillin, Matthieu Chourrout, Institut d’Optique Graduate School (France).  

[10676-107]

Design and optimization of a large FOV and low-distortion head mounted display, John He, Chi Chih-Cheng, Yu Zhi-Taing, Haiyan Qi, China Jiliang Univ. (China); Changlun Hou, Hangzhou Dianzi Univ. (China).  

[10676-108]

A reflective prism for augmented reality with large field of view, Bo Chen, Univ. Stuttgart (Germany).  

[10676-109]

Design of a spatially multiplexed light field display on curved surfaces for VR HMD applications, Tianyi Yang, Nicholas Kochan, Samuel J. Stevens, Greg Schmidt, Julie L. Bentley, Duncan T. Moore, Univ. of Rochester (United States).  

[10676-110]

See-through smart glass with adjustable focus, Hossein Shahnian, Todd Noste, Nicholas Szimere, Clark Hovis, Prithviraj Shumagam, Nicholas Horvath, Dustin Gurganos, The Univ. of North Carolina at Charlotte (United States).  

[10676-111]

Design of augmented reality system based on DMD, Gong Shaobing, Zhejiang Univ. (China).  

[10676-112]

Compact see-through near-eye display with depth adaption, Yun-Han Lee, Guanjun Tan, Kun Yin, Shin-Tson Wu, Univ. of Central Florida (United States).  

[10676-113]

Design of a gradient index waveguide for improved augmented reality systems, Eryn A. Fennig, Yang Zhao, Samuel J. Steven, Tianyi Yang, Greg Schmidt, Julie L. Bentley, Duncan T. Moore, Univ. of Rochester (United States).  

[10676-114]

Design of a head mounted display nased on freeform surfaces prism and dual display sources, Siyue Feng, Yunbing Ji, Xiaohong Wang, Hongliang Wang, Changchun Institute of Optics, Fine Mechanics and Physics (China).  

[10676-115]

Design of a compact near-eye display system with wide field of high resolution, Tao Xiao, Zhejiang Univ. (China).  

[10676-116]

Ultrathin full color visor with large field of view based on multilayered metasurface design, Ori Avayu, Ran Ditzovski, Tal Ellenbogen, Tel Aviv Univ. (Israel).  

[10676-117]

Meta-resonance waveguide gratings as highly wavelength-selective optical combiners for augmented reality, Giorgio Guantara, Guillaume Basset, Ctr. Suisse d’Electronique et de Microtechnique SA (Switzerland).  

[10676-118]

A vergence accommodation conflict-free virtual reality wearable headset, Simon Charniere, Louis Duveau, Nour Skaf, Institut d’Optique Graduate School (France).  

[10676-119]

Ultrathin optical microprismatic with microstructure mirrors in augmented reality, Miaomiao Xu, Hong Hua, The Univ. of Arizona (United States).  

[10676-120]

Wide field-of-view waveguide displays enabled by polarization-dependent metagratings, Zhujuan Shi, Wei Ting Chen, Federico Capasso, Harvard Univ. (United States).  

[10676-121]

Overdesigned and underperforming: design, analysis, and tolerancing of a freeform prism via careful use of orthogonal surface descriptions, Nicholas Takaki, Wanuye Song, Anthony J. Yee, Jannick Rolland, Duncan T. Moore, Julie L. Bentley, David Chidester, Univ. of Rochester (United States).  

[10676-122]

Improving immersion of head mounted displays through optical design optimizations, Badrinath Vadakappattu C., Gabriella Molinar, Simon C. Stock, Sranvan Shekam, Karlsruhe Institut für Technologie (Germany).  

[10676-123]
CONFERENCE 10676

Tomographic near-eye displays, SeungJee Lee, YoungJin Jo, Dongheon Yoo, Jaebum Cho, Dukho Lee, Byoungho Lee, Seoul National Univ. (Korea, Republic of) .................................................. [10676-124]

Polarization-dependent metasurfaces for 2D/3D switchable displays, Zhujun Shi, Harvard Univ. (United States) ............................... [10676-125]

High-performance integral-imaging based light field augmented reality display, Heekun Huang, Hong Hua, The Univ. of Arizona (United States) .................................................. [10676-126]

Design and stray light analysis of a lenslet-array-based see-through light-field near-eye display, Cheng Yao, Dewen Cheng, Yongtian Wang, Beijing Institute of Technology (China) .................................. [10676-127]

High-resolution head-mounted display using stacked LCDs and birefringent lens, Shuaishuai Zhu, Harbin Institute of Technology (China) and Univ. of Illinois (United States); Peng Jin, Wei Qiao, Harbin Institute of Technology (China); Liang Gao, Univ. of Illinois (United States) ... [10676-128]

A retinal-projection based near-eye display for virtual reality, Lantian Mi, Wenbo Zhang, Chao Ping Chen, Lei Zhou, Yishu Wu, Yang Li, Bing Yu, Nizamuddin Maitlo, Shanghai Jiao Tong Univ. (China) ... [10676-129]

Freeform optics design for augmented reality displays with OpticsStudio API tools, Qiang Song Sr., Shanghai Institute of Optics and Fine Mechanics (China); Hao Huang, Univ. of Shanghai for Science and Technology (China); Yin Guo, Tsinghua Univ. (China) .................................................. [10676-130]

Understanding waveguide-based architecture and ways to robust monolithic optical combiner for smart glasses, Vincent Brac de la Perriere, Ctr. de Nanosciences et de Nanotechnologies (France) ...................... [10676-131]

Compact see-through AR system using buried imaging fiber bundles, Simon Thiele, Univ. Stuttgart (Germany) .................................. [10676-132]

Design of an immersive head-mounted display with coaxial catadioptric optics, Luo Gu, Dewen Cheng, Yongtian Wang, Beijing Institute of Technology (China) .................................................. [10676-133]

Ultra-compact pancake optics based on ThinEyes® super-resolution technology for virtual reality headsets, Bharathwaj Appan Narasimhan, Limbatk 4PI S.L. (Spain) and Univ. Politécnica de Madrid (Spain) ................ [10676-134]

Solving the vergence-accommodation conflict in head mounted displays with a magnifier system, Francisco Javier Gantes, Daniel Malacara-Hernández, Zacarias Malacara-Hernández, Centro de Investigaciones en Optica, A.C. (Mexico) .................................................. [10676-135]

The optimization and autodesign of the augmented reality waveguide based on API in ZEMAX, Yin Guo, Tsinghua Univ. (China); Hao Huang, Univ. of Shanghai for Science and Technology (China); Qiang Song, Shenzhen Lochn Optics Technology Co., Ltd. (China) ................ [10676-137]

Augmented reality display system for smart glasses with streamlined form factor, Yang Zhao, Samuel J. Steven, Greg Schmidt, Julie L. Bentley, Duncan T. Moore, Univ. of Rochester (United States) ................... [10676-138]

High-resolution optical see-through vari-focal-plane head mounted display using freeform Alvarez lenses, Austin T. Wilson, Hong Hua, The Univ. of Arizona (United States) ........................................ [10676-140]

Super multiview augmented reality glasses, Anastasia Bolotova, Moscow Technological University (MIREA) (Russian Federation); Andrey Putlin, P.N. Lebedev Physical Institute (Russian Federation); Vladislav Druzhin, Bauman Moscow State Technical Univ. (Russian Federation) ......................... [10676-142]

PARA: experimental device for augmented/virtual reality, Stan Larroque, SL Process and HETIC (France); Julien Casarin, Gif informatique/Strasbourg Univ. (France) .................................................. [10676-143]

WEDNESDAY 25 APRIL

ORAL PRESENTATIONS AND AWARDS

LOCATION: ETOILE C ........................................ WED 8:30 TO 15:00

DOID Student Optical Design Challenge for VR/AR and MR

SPIE is joining with the world leading companies in VR, AR and MR HMD hardware development to organize the first Student Optical Design Challenge at the Digital Optics for Immersive Displays (DOID) Conference during SPIE Photonics Europe in Strasbourg.

The awards are designed to encourage and acknowledge excellence in oral and poster student paper presentations, and to bridge the gap between traditional academic optics teaching and tangible industry expectations for today’s immersive display products.

The DOID Student Optical Design Challenge Oral Presentations and Awards Session consists of short oral overviews of the posters presented during the DOID Student Optical Design Challenge Poster Session on Tuesday 24 April. The Jury will grade the optical design and the resulting optical specs (including tolerancing), as well as the actual work presentation in both poster and oral format.

Additional schedule details will be available at http://spie.org/conferences-and-exhibitions/photonics-europe/special-events in late February.

Coffee Break .................................................. Wed 15:00 to 15:30

SESSION 4

LOCATION: ETOILE C ........................................ WED 15:30 TO 18:10

Improving visual comfort in AR/VR systems

Session Chair: Hong Hua, College of Optical Sciences, The Univ. of Arizona (United States)

15:30: Tunable lens technologies for VAC mitigation in see-through AR headsets (Invited Paper), Robert E. Stevens, Adlens Ltd (United Kingdom) .................................................. [10676-18]

16:00: Multi-order diffractive optics for achromatic tunable lenses and digital color holograms (Invited Paper), Stefan Bernet, Medizinische Univ. Innsbruck (Austria) .................................................. [10676-25]

16:30: Computationally efficient and antialiased dual-layer light-field displays, Konstantin Kolchin, Ilya Kurlin, Gleb Milyukov, Mikhail Popov, Mikhail Rychagov, Jaeyeol Ryu, Stanislav Shtykov, Sergey Turko, SAMSUNG Electronics Co., Ltd. (Russian Federation) ................ [10676-19]

16:50: Image sharpness of 3D images generated by viewing-zone scanning holographic display using MEMS SLM, Yasuhiro Takaki, Tokyo Univ. of Agriculture and Technology (Japan) .................................................. [10676-21]

17:10: Experimental evaluation of self-focusing image formation in nonconventional near-eye display, Vladimir Krotov, Christophe Martinez, Commissariat à l’Énergie Atomique (France); Olivier Haebelert, Univ. de Haute Alsace (France) .................................................. [10676-22]

17:30: Alvarez lens for fast actuation of optical power, Martin Bawart, Alexander Jesacher, Philipp Zeiger, Stefan Bernet, Monika Ritsch-Marte, Medizinische Univ. Innsbruck (Austria) .................................................. [10676-23]

17:50: Visual and wearable comfort are key to the adoption of next-generation AR/VR headsets by enterprise and consumer, Bernard C. Kress, Microsoft Corp. (United States) .................................................. [10676-24]
Unconventional Optical Imaging

CONFERENCE 10677
LOCATION: MARIE CURIE B

Sunday–Thursday 22-26 April 2018 • Proceedings of SPIE Vol. 10677

SUNDAY 22 APRIL

OPENING REMARKS
LOCATION: MARIE CURIE B .................................................. 13:05 TO 13:10

SESSION 1
LOCATION: MARIE CURIE B ............................................. SUN 13:10 TO 15:05

Modelling, Computation and Design I:
Co-design for Unconventional Imaging
Session Chair: Pauline Trouvé, ONERA (France)

13:10: Computational Imaging: Going beyond the limits of conventional lenses using computation (Invited Paper), Ashok Veeraraghavan, Rice Univ. (United States) ........................................... [10677-1]
13:35: Increasing image resolution in near-infrared to visible upconversion detection for long-range active imaging, Romain Demur, Eric Lallier, Lioz Morvan, Luc Leviandier, Thales Research & Technology (France); Nicolas Treps, Lab. Kastler Brossel, Univ. Pierre et Marie Curie (France); Claude Fabre, Lab. Kastler Brossel, Univ. Pierre et Marie Curie (France). ........................................... [10677-2]
13:50: Color correction matrix evaluation for sparse RGB-W image sensor without IR cutoff filter, Jérôme M. Vaillant, CEA-LETI (France); Axel Clouet, Commissariat à l’Énergie Atomique (France). .......... [10677-3]
14:20: Simple and cheap hyperspectral imaging for astronomy (and more), Marco Pisani, Massimo Zucco, Istituto Nazionale di RicercaMetrologica (Italy) .................................................. [10677-5]
14:35: Experimental demonstration of diffraction-limited plenoptic imaging, Francesco Vincenzo Pepe, Istituto Nazionale di Fisica Nucleare (Italy); Francesco Di Lena, Aldo Mazzilli, Univ. degli Studi di Bari Aldo Moro (Italy); Eitan Edrei, Univ. of Maryland, College Park (United States); Augusto Garuccio, Univ. degli Studi di Bari Aldo Moro (Italy); Giuliano Scarcelli, Univ. of Maryland, College Park (United States); Milena D’Angelo, Univ. degli Studi di Bari Aldo Moro (Italy). ........................................... [10677-6]
Coffee Break. .................................................. Sun 13:05 TO 15:30

SESSION 2
LOCATION: MARIE CURIE B .................................................. SUN 15:30 TO 17:15

Modelling, Computation and Design II:
Co-design for Unconventional Imaging
Session Chair: Corinne Fournier, Univ. Jean Monnet Saint-Etienne (France)

15:30: Chromatic add-on to improve depth from defocus with a conventional camera, Pauline Trouvé, Frédéric Champagnat, Anthelme Bernard-Bruneel, ONERA (France); Jacques Sabater, Thierry Avignon, Institut d’Optique Graduate School (France); Guy Le Besnerais, ONERA (France). ........................................... [10677-8]
15:45: SNR-optimized image fusion for transparent object inspection, Johannes Meyer, Karlsruher Institut für Technologie (Germany); Wolfgang Melchert, Matthias Hartrupf, Thomas Längle, Jürgen Beyerer, Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany). ........................................... [10677-9]
CONFERENCE 10677

SESSION 3

LOCATION: MARIE CURIE B .................................... MON 11:30 TO 12:40

Applications I: Bioimaging

Session Chair: Gabriel Popescu, Univ. of Illinois (United States)

11:30: Assessment of normal and pathological platelets aggregates by quantitative analysis with digital holographic microscopy (Keynote Presentation), Frank Dubois, Daniel Ribeiro de Sousa, Alexandre Rousseau, Catherine Youressavsky, Univ. Libre de Bruxelles (Belgium); Alain Van Meerhaeghe, Univ de Charleroi (Belgium); Bastien Chapard, Univ. de Genève (Switzerland); Karim Zouaoui Boudjeltia, Univ. Libre de Bruxelles (Belgium) .................................................. [10677-16]

12:10: Quantitative phase microscopy of dynamic cells using off-axis holographic compression by spatial multiplexing, Natan T. Shaked, Tel Aviv Univ. (Israel) ....................................... [10677-17]

12:25: Color holographic microscope for monitoring lipids in microalgae, Pascal Picart, Le Mans Univ. (France); Michael Lebrun, Univ. du Maine (France); Gérald Thouand, Univ. de Nantes (France) ......................... [10677-18]

Lunch Break ........................................... Mon 12:40 to 13:50

SESSION 4

LOCATION: MARIE CURIE B .................................... MON 13:50 TO 15:30

Applications II: Bioimaging

Session Chair: Olivier Haeberlé, Univ. de Haute Alsace (France)

13:50: Line-field confocal optical coherence tomography: technology and application in dermatology (Invited Paper), Olivier Leveque, DAMAE Medical (France); Arthur J. Davis, DAMAE Medical (United States); Hicham Azamini, Daniel Siret, DAMAE Medical (France); Jean Luc Perrot, Ctr. Hospitalier Univ. de Saint-Etienne (France); Arnaud Dubois, Lab. Charles Fabry (France) and DAMAE Medical (France) .................................................. [10677-19]

14:15: Label-free imaging of cellular optical and electrical properties using quantitative phase imaging and AC field modulation assays, Cristina Poloncshii, Mihaela Gheorghiu, The International Ctr. of Biodynamics (Romania); Mikhail E. Kandel, Univ. of Illinois (United States); Sorin M. David, Dumitru Bratu, The International Ctr. of Biodynamics (Romania); Gabriel Popescu, Univ. of Illinois (United States); Eugen Gheorghiu, The International Ctr. of Biodynamics (Romania) .......................................................... [10677-20]

14:30: Quantitative phase retrieval reconstruction from in-line hologram using a new proximal operator: application to microscopy of bacteria and tracking of droplets, Fabien Momey, Univ. Jean Monnet Saint-Etienne (France); Frédéric Jovent, Univ. Jean Monnet Saint-Etienne (France); Loïc Denis, Lab. Hubert Curien (France); Corinne Fournier, Univ. Jean Monnet Saint-Etienne (France); Loïc Méès, Ecole Centrale de Lyon (France); Nicolas Faure, Frédéric Pinston, bioMerieux SA (France) .................................................. [10677-21]

14:45: 2D spectrometer for spectral and time domain optical coherence spectroscopy, Szymon Tamborski, Nicolaus Copernicus Univ. (Poland); Maciej M. Bartuzel, Nicolaus Copernicus Univ. (Poland) and Wrocław Univ. of Science and Technology (Poland); Krystian Wrobel, Maciej Szukulowski, Nicolaus Copernicus Univ. (Poland) .................................................. [10677-22]

15:00: Bioimaging with controlled depth using upconversion nanoparticles, Daria V. Pominova, Anastasia V. Ryabova, Igor D. Romanishkin, Vladimir I. Makarov, Pavel V. Grachev, A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences (Russian Federation) .......................................................... [10677-23]

15:15: Label-free imaging and analysis of small lipid droplets in adipocyte cells by stimulated Raman microscopy, Rajeev Ranjan, Annalisa D’Arco, Maria Antonietta Ferrara, Istituto per la Microelettronica e Microsistemi (Italy); Maurizio Indolfi, Michele Larobina, Consiglio Nazionale delle Ricerche (Italy); Giancarlo Pedrini, Wolfgang Osten, Univ. Stuttgart (Germany) .................................................. [10677-24]

Coffee Break ........................................... Mon 15:30 to 16:00

SESSION 5

LOCATION: MARIE CURIE B .................................... MON 16:00 TO 17:50

Applications III: Micro- Nanoscopic Imaging

Session Chair: Philipp Kukura, Univ. of Oxford (United Kingdom)

16:00: Molecular imaging (Invited Paper), Philipp Kukura, Univ. of Oxford (United Kingdom) .................................................. [10677-25]

16:25: Through-focus scanning optical microscopy applications (Invited Paper), Ravikiran Attota, National Institute of Standards and Technology (United States) .................................................. [10677-26]

16:55: Ultrafast two-photon microscopy for high-speed brain imaging in awake mice, Radoslaw Chrapkiewicz, Tong Zhang, Oscar Hernandez, Adam S. Shai, Mark J. Wagner, Yanping Zhang, Cheng-Hsun Wu, Jin Zhong Li, Stanford Univ. (United States); Yiang Gong, Duke Univ. (United States); Masatoshi Inoue, Haruhiko Bito, The Univ. of Tokyo (Japan); Mark J. Schnitzer, Stanford Univ. (United States) .................................................. [10677-27]

17:05: Optofluidic time-stretch microscopy with an extreme throughput of 1 million cells/s, Cheng Lei, Hirofumi Kobayashi, Yasuyuki Ozeki, Kelsuke Gods, The Univ. of Tokyo (Japan) .................................................. [10677-28]

17:20: Probing the viscoelastic properties of ultrathin polymer films by confocal coherent scanning line-scan interferometry, Pierre Chauquis, ICube (France); Christian Gauthier, Damien Favier, Anne Rubin, Institut Charles Sadron (France); Freddy Anstotz, Paul C. Montgomery, ICube (France) .................................................. [10677-29]

17:35: Laser sources in multiphoton microscopy: overview and optimization, Claire Lefort, XLIM Institut de Recherche (France) .................................................. [10677-30]

TUESDAY 24 APRIL

SESSION 6

LOCATION: MARIE CURIE B .................................... TUE 08:40 TO 10:20

Modelling, Computation and Design III

Session Chair: Gabriel Popescu, Univ. of Illinois (United States)

8:40: Partially coherent imaging in phase space (Invited Paper), Colin J. R. Sheppard, Univ. of Wollongong (Australia) and Istituto Italiano di Tecnologia (Italy); Shalin B. Mehta, Chan Zuckerberg Biohub (United States) ............................... [10677-31]

9:05: Development of a realistic wave propagation-based chromatic confocal microscopy model for optical design and for solving the inverse problem, Daniel Claus, Institut für Lasertechnologien in der Medizin und Messtechnik (Germany); Christian Scherf, Technische Universität, Stuttgart (Germany); Raimund Hibst, Institut für Lasertechnologien in der Medizin und Messtechnik (Germany) ............................... [10677-32]

9:20: Dimension reduction method for fast diffuse optical tomography, Minyu Chen, Tsuyoshi Yagami, Kim, Minlu J, Haei Lee, Seongkwan YW, Hyeon-Min Bae, KAIST (Korea, Republic of) .................................................. [10677-33]

9:35: Super defocusing of light by optical suboscillations, Yaniv Eliezer, Alon Bahabad, Tel Aviv Univ. (Israel) .................................................. [10677-34]


10:05: Deep Learning-based object recognition through multimode fiber via a CNN-architecture SpectkNet, Ping Wang, Northwestern Polytechnical Univ. (China) and Chang'an Univ. (China); Jianglei Di, Northwestern Polytechnical Univ. (China) .................................................. [10677-36]

Coffee Break ........................................... TUE 10:20 to 10:50

SESSION 7

LOCATION: MARIE CURIE B .................................... TUE 10:50 TO 13:00

Advanced Methods I: Light Scattering

Session Chair: Enrique Tahajure, Univ. Jaume I (Spain)

10:50: Unconventional ways of using a scattering media for optical imaging (Keynote Presentation), Wolfgang Osten, Giancarlo Pedrini, Alok Kumar Singh, Institut für Technische Optik (Germany); Mitsuo Takeda, Utsunomiya Univ. Ctr. for Optical Research & Education (Japan) .................................................. [10677-37]

11:30: Single-shot fluorescence imaging through scattering media in epi wide-field microscopy, Matthias Hofer, Institut Fresnel (France); Christian Soeller, Univ. of Exeter (United Kingdom); Sophie Brasselet, Institut Fresnel (France); Jacopo Bertolotti, Univ. of Exeter (United Kingdom) .................................................. [10677-38]

11:45: Correlations between reflected and transmitted intensity patterns during coherent multiple scattering, Ilia Starshynov, Alba M. Fanaglia-Diaz, Univ. of Exeter (United Kingdom); Nikos Fayard, Institut Languelin, ESPCI ParisTech (France) and Ctr. National de la Recherche Scientifique (France) and PSL Research Univ. (France); Romain Pierrat, Institut Languelin, ESPCI ParisTech (France) and Ctr. National de la Recherche Scientifique (France) and PSL Research Univ. (France); Rémi Caminati, Institut Languelin, ESPCI ParisTech (France) and Ctr. National de la Recherche Scientifique (France) and PSL Research Univ. (France); Jacopo Bertolotti, Univ. of Exeter (United Kingdom) ............................... [10677-39]

12:00: Vision through turbid media by Fourier filtering and single-pixel detection, Yessenia Jaurin Peralta, Pesci Porcari, Università di Pisa, Pesci Porcarri, Università di Pisa (Italy); Jesus Lancis, Univ. Jaume I (Spain) .................................................. [10677-40]

12:15: Light statistics in disordered media predicted with a unique correlation parameter, Myriam Zerrad, Gabriel Soriano, Ayman Ghabbach, Claude Amra, Institut Fresnel (France) .................................................. [10677-41]

12:30: Improved image acquisition with a scattering plate microscope, Sarah Ludwig, Alok K. Singh, Giancarlo Pedrini, Institut für Technische Optik, Univ. Stuttgart (Germany) .................................................. [10677-42]
CONFERENCE 10677

WEDNESDAY 25 APRIL

JOINT SESSION I

LOCATION: MARIE CURIÉ B ............................... WED 8:30 TO 10:40

Optics in Surgery I

Joint Session between Conferences 10677 and 10685

Session Chair: Sylvain Gioux, ICube (France)

8:30: Looking and listening to tissues: advances in fluorescence and optoacoustic bio-imaging (Invited Paper), Vasillis Ntzichristos, Technische Univ, München and Helmholtz Zentrum München GmbH (Germany) ........................................ 10677-51

9:10: Real-time oxygenation imaging using spatio-temporal modulation of light, Manon Schmidt, Amir Nahas, Swampanthi Panigrahi, Muniele Torregrossa, Sylvain Gioux, ICube (France) ...................... 10685-57

9:25: Quantitative subsurface fluorescence imaging enabled by spatial frequency domain imaging for enhanced fluorescence guided surgery, Mira Sibai, Univ. of Toronto (Canada) and Princess Margaret Cancer Ctr., Univ. Health Network (Canada); Dennis J. Wirth, Thayer School of Engineering at Dartmouth (United States); Frédéric Leblond, Ecole Polytechnique de Montréal (Canada); David W. Roberts M.D., Dartmouth Hitchcock Medical Ctr. (United States); Brian C. Wilson, Princess Margaret Cancer Ctr., Univ. Health Network (Canada); and Univ of Toronto (Canada) .................... 10685-58

9:40: Phantom and methodology for fluorescence contrast molecular imaging systems benchmarking, Dimitris Gorpas, Helmholtz Zentrum München GmbH (Germany); Maximilian Koch, Maria Anastasopoulou, Helmholtz Zentrum München GmbH (Germany) and Technische Univ, München (Germany); Uwe Kriess, Helmholtz Zentrum München (Germany) and Technische Univ, München (Germany) .................... 10677-52

9:55: Real-time imaging using an OCT device steered by a robotized flexible endoscope, Oscar Caravaca Mora, Lucile Zorr, Philippe Zanne, Florent Nageotte, Paul C. Montgomery, Michel De Mathelin, ICube (France); Michalina Gora, ICube, Univ. of Strasbourg (France) and Ctr National de la Recherche Scientifique (France) ...................... 10677-53

10:10: CMOS-based contact imaging system for skin condition diagnosis by spatially resolved diffuse reflectance spectroscopy, Nils Pettididier, Anne Koenig, Rémi Gerbelot, Henri Grateau, CEA-LETI (France); Sylvain Gioux, Univ. de Strasbourg (France); Sophie Morales, CEA-LETI (France) ...................... 10685-59

10:25: Differentiation of femur bone from surrounding soft tissue using laser-induced breakdown spectroscopy as a feedback system for smart laserosteotomy, Hamed Abbasi, Georg Rauter, Raphael Guzman, Philippe C. Cattin, Azhar Zam, Univ. Basel (Switzerland) ...................... 10685-60

Coffee Break. ......................................................... Wed 10:40 to 11:00

TUESDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM .................. TUE 16:30 TO 18:05

Hot Topics Session II

16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussel, Belgium

16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain

For additional details, please see page 7.

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CONFERENCE 10677

SESSION 11

LOCATION: MARIE CURIE B ............................................. WED 16:05 TO 17:45

Applications V: Wavefront Shaping and Restoration

Session Chair: Pierre H. Chavel, Institut d’Optique Graduate School (France)

16:05: Phase diversity: math, methods and prospects, including sequential diversity imaging (Invited Paper), Robert A. Gonsalves, Tufts Univ. (United States). ....................................................... [10677-63]

16:30: Enhanced deep detection of light for Raman spectroscopy by wavefront shaping, Alba M. Paniagua-Diaz, William D. Bickel, Robert A. Gonsalves, Tufts Univ. (United States), Alba M. Paniagua-Diaz, William D. Bickel, Robert A. Gonsalves, Tufts Univ. (United States). ....................................................... [10677-64]

16:45: Methods of image correction formed on horizontal long paths, Peter Alexseevich Konyaev, Evgeny Anatolyevich Kopylov, Vitaly V. Lavrinov, Vladimir P. Lukin, Anton A. Selin, V.E. Zuev Institute of Atmospheric Optics of the Russian Academy of Sciences (Russian Federation). ....................................................... [10677-65]

17:00: First light of CIAO at Pic du Midi, Guillaume Dovalière, Imagine Optic SA (France), François Colas, Observatoire de Paris (France); Jean-Luc Dauvergne, T1M Association - S2P (France); Antoine Motenet, Imagine Optic SA (France). ....................................................... [10677-66]

17:15: Closed- and open-loop approaches for focus recovery through self-referencing media by wavefront shaping based on digital-micromirror devices, Alejandro Turpin, Ivan Vishniakov, Johannes D. Seelig, Ctr. of Advanced European Studies and Research (Germany). ....................................................... [10677-67]

17:30: Interest of polarimetric refocused images calibrated in depth for control by vision, Luc Gendre, Stéphane Bazille, Christophe Cudel, Laurent Buguet, Univ. de Lorraine (France) and Metz-Thionville Regional University (France). ....................................................... [10677-68]

 Lunch/Exhibition Break ....................................................... Wed 12:55 to 14:05

SESSION 9

LOCATION: MARIE CURIE B ............................................. WED 14:05 TO 15:15

Applications IV: Bioimaging

Session Chair: Gabriel Popescu, Univ. of Illinois (United States)

14:05: Extreme imaging for large-scale single-cell analysis (Invited Paper), Keisuke Goda, The Univ. of Tokyo (Japan). ....................................................... [10677-57]

14:30: Ultranarrow spectral filter for acousto-optic imaging for medical applications, Caroline Venet, Mainouma Bocoum, Institut Langevin (France); Thierry Chaneaux, Lab. Aimé Cotton, Institut Langevin (France); Anne Louchet-Chauvet, Lab. Aimé Cotton (France). ....................................................... [10677-58]

14:45: Characterization of ocular tissues applying multifractal analysis to multispectral imaging, Ouafa Sijilmassi, José Manuel Lopez-Alonso, Maria del Carmen Barrio Asensio, Aurora del Rio-Sevilla, Univ. Complutense de Madrid (Spain). ....................................................... [10677-59]

15:00: Electro-optical polarization modulation in coherent Raman scattering for the observation of molecular dynamics in real-time, Matthias Hofe, Sophie Brochard, Institut Fresnel (France). ....................................................... [10677-60]

Coffee Break ....................................................... Wed 15:15 to 15:35

SESSION 10

LOCATION: MARIE CURIE B ............................................. WED 15:30 TO 16:05

Advanced Methods III: Quantitative Phase Imaging

Session Chair: Eugen Gheorghiu, The International Ctr. of Biodynamics (Romania)

15:35: Quantitative phase imaging by using a position sensitive detector, Fernando Soldevila, Vicente Durán, Pere Clemente, Jesús Llucí, Enrique Tajahuerce, Univ. Jaume I (Spain). ....................................................... [10677-61]

15:50: In-line and off-axis hybrid digital holography, Fengpeng Wang, Beijing Univ. of Technology (China) and Gannan Normal Univ. (China); Dayong Wang, Lu Rong, Yunxin Wang, Jie Zhao, Beijing Univ. of Technology (China). ....................................................... [10677-62]

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Prototyping a compressive line sensing hyperspectral imaging sensor, Bing Ouyang, Michael Twardowski, Lanjun Li, Fraser R. Dalgleish, Harbor Branch Oceanographic Institute (United States). ....................................................... [10677-11]

Multimodal fluorescence imaging navigation for surgical guidance of malignant tumors in photosensitized tissues of neural system and other organs, Maxim Loshchenov, A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences (Russian Federation); Walter Blondel, Univ. de Lorraine (France) and Ctr. of Advanced European Studies and Research (France); Aleksandr A. Potapov M.D., N.N. Burdenko Neurosurgical Institute (Russian Federation); Rudolf Steiner, Institute für Laserstrukturtechnologie in der Medizin und Messtechnik (Germany); Marine Amouroux, Univ. de Lorraine (France) and Ctr. of Advanced European Studies and Research (France); Alexander V. Dubrov, Victor Loschev, A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences (Russian Federation). ....................................................... [10677-86]

Recognition of plastic cells in human peripheral blood by diffraction phase microscopy, Freddy A. Monroy Ramirez, Caori A. Organista, Marcela Camacho, Univ. Nacional de Colombia (Colombia). ....................................................... [10677-87]

Fluorescence holographic microscope, Pavel Kolman, Zbyněk Dostál, Radim Chmelik, Brno Univ. of Technology (Czech Republic). ....................................................... [10677-88]

Multichannel pyrometer of the spectral ratio for on-line monitoring in the additives technologies of metal deposition, Yuri N. Zavalov, Alexander V. Dubrov, Fikret K. Mirzade, Vlastislav N. Glebov, Andrey M. Malutin, Vladimir D. Dubrov, FECC “Crystallography and Photonics” of the Russian Academy of Sciences (Russia Federation). ....................................................... [10677-89]

Multiscale photoacoustic microscopy imaging with image improvement and quantification technique, Seungwan Jeon, Jin Young Kim, Chuhong Kim, Pohang Univ. of Science and Technology (Korea, Republic of). ....................................................... [10677-90]

LED misalignment determination in LED illumination optics using linear and nonlinear methods, Pau Castilla, Noemí Domínguez, SnellOptics (Spain); Cristina García, Univ. Politécnica de Catalunya (Spain); Carlies Pizarro, SnellOptics (Spain); Patricia Blanco, Manuel Espinola, Josep Arasa, Univ. Politécnica de Catalunya (Spain). ....................................................... [10677-91]

Optimizing phase object reconstruction using an in-line digital holographic microscope and a reconstruction based on a Lorenz–Mie model, Thomas Olivier, Lab. Hubert Fradelizi (France); Olivier Fradelizi, Univ. Jean Monnet Saint-Etienne (France); Loïc Mées, Ecole Centrale de Lyon (France); Corinne Fournier, Univ. Jean Monnet Saint-Etienne (France). ....................................................... [10677-92]
Multiscale integrated free-form microoptics out of photoinitiated free-hybrid organic-inorganic photopolymer via femtosecond 3D laser lithography.

SnellOptics (Spain); Patricia Blanco, Manuel Espínola, Josep Arasa, Univ. Politècnica de Catalunya (Spain); Cristina Garcia, Univ. Politècnica de Catalunya (Spain); Carles Pizarro, with a confocal microscope.

New method for evaluating the surface energy value of rough surfaces.

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Optimization of the complex coherence function for diffraction-based wavefront transformations, Gerald Füttener, Hochschule Deggendorf Technologielehre Gießen (Germany) .................................. [10677-129]

Terahertz hyperspectral imaging of lab-prepared versus commercial paracetamol tablets and potential applications, Dinh Nguyen, Yves Hernandez, Fabian Dortu, Multitel A.S.B.L. (Belgium); Amandine Dispa, Philippe Hubert, Eric Ziemons, Univ. de Liège (Belgium) ........ [10677-130]

The modeling peculiarities of recording of pulsed broadband THz holograms for nonscattering objects, Nikolay S. Balbekin, Maksim S. Kulya, ITMO Univ. (Russian Federation); Andre A. Gorodetsky, Imperial college London (United Kingdom); Nikolay V. Petrov, ITMO Univ. (Russian Federation) .................................................. [10677-131]

Multispectral PSF engineering through a complex medium with a transmission matrix approach, Antoine Boniface, UPMC Sorbonne Univ. (France) ............................................................. [10677-132]

Partial compensation of the cataract effects using wavefront shaping, Augusto Arias Gallego, Enrique Josua Fernández, Pablo Artal, Lab. de Óptica Univ. de Málaga (Spain) ........................................ [10677-133]

Applications of fractional wavelet-based denoising method in biomedical hyperspectral imaging, Dragoş Manea, Mihaela Antonina Calin Sr., National Institute of Research and Development for Optoelectronics (Romania); Radu Mutluihc, Univ. of Bucharest (Romania) ......... [10677-134]

Comparison of spectral angle mapper and support vector machine classification methods for mapping skin burn using hyperspectral imaging, Mihaëla Antonina Calin, National Institute of Research and Development for Optoelectronics (Romania); Sorin Ioan Ionescu, Univ. Dauphine (France) ........ [10677-135]

THURSDAY 26 APRIL

THURSDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM ........................................ THU 9:00 TO 10:35

Hot Topics III

9.00 to 9.05: Introduction
Harald Giessen, Univ. of Stuttgart, Germany

9.05 to 9.50: From extreme nonlinear optics to ultrafast atomic physics
Anne L’Huillier, Lund Univ., Sweden

9.50 to 10.35: Quantum computations and quantum simulations with trapped ions
Rainer Blatt, Institute for Experimental Physics, Univ. of Innsbruck, Austria

For additional details, please see page 8.

Coffee Break ........................................... Thu 10:35 to 11:00

SESSION 12

LOCATION: MARIE CURIE B ....................................... THU 11:00 TO 12:25

Advanced Methods IV: Terahertz Imaging

Session Chair: Marc P. Georges, Liège Univ. (Belgium)

11:00: Continuous-wave terahertz phase-contrast imaging (Invited Paper), Dayong Wang, Lu Rong, Yunxin Wang, Jie Zhao, Jinxin Guo, Beijing Univ. of Technology (China) .................. [10677-69]

11:25: High spatial resolution for terahertz imaging and spectroscopy of biological tissues, Nikita V. Chernomyrdin, Alexander Schadko, Bauman Moscow State Technical Univ. (Russian Federation); Gennady Komandin, A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences (Russian Federation); Anna Kucheryavenko, Arseniy Gavdush, Bauman Moscow State Technical Univ. (Russian Federation); Krzysztof Zaytsev, A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences (Russian Federation) ........ [10677-70]

11:40: Terahertz pulsed imaging reveals the stratigraphy of a seventeenth-century oil painting, Alexandre Locquerc, Junliang Dong, Georgia Tech-Lorraine (France); Marcello Melis, Profilocrome Srl (Italy); David S. Citrin, Georgia Institute of Technology (United States) .......... [10677-71]

11:55: Resolution limits of terahertz ptychography, Lorenzo Valzania, Erwin Hack, Peter Zollerik, Rolf Brönnimann, EMPA (Switzerland); Thomas Feurer, Univ. Bern (Switzerland) .................................. [10677-72]

12:10: Increasing field of view and enhancement of resolution of reconstructed images in digital THz holography, Nikolay V. Petrov, Nikolay S. Balbekin, Maksim S. Kulya, ITMO Univ. (Russian Federation); Andrei A. Gorodetsky, Aston Univ. (United States) ........ [10677-73]

Lunch Break ........................................... Thu 12:25 to 13:35

SESSION 13

LOCATION: MARIE CURIE B ...................................... THU 13:35 TO 15:15

Advanced Methods V: Harsh Environments

Session Chair: Marc P. Georges, Liège Univ. (Belgium)

13:35: Digital holography for erosion monitoring inside the ITER Tokamak (Invited Paper), Giancarlo Pedrini, Igor Alekseenko, Institut für Technische Optik (Germany); Govindi Jagannathan, George Vayakis, ITER Organization (France) .................. [10677-74]

14:00: Interferometric measurements in hostile environments, Peter Bryanston-Cross, Warwick Univ. (United Kingdom) and Optical Diagnostics Ltd. (United Kingdom) .......................... [10677-75]

14:15: Digital holographic microscopy for remote life detection, Eugene Serabyn, Kent Wallace, Kurt M. Liewer, Chris Lindensmith, Jet Propulsion Lab. (United States) .................. [10677-76]

14:30: Marine particles investigation by underwater digital holography, Victor Dyomin, Igor Polovtsev, Alexandra Davydova, Tomsk State Univ. (Russian Federation) ........ [10677-77]

14:45: MEMS-based serial LIDAR detection and imaging architecture for automated surveillance of undersea marine life, Fraser R. Dalgleish, Bing Ouyang, Anni K. Vuorenkoski, Brian Ramos, Yanjun Li, Harbor Branch Oceanographic Institute (United States); Frank M. Caimi, Harbor Branch Oceanographic Institute (United States); Jose Princke, Univ. of Florida (United States); Zheng Cao, Univ. of Florida (United States) .... [10677-78]

15:00: Simultaneous measurements of velocity and density of transient flows using high-speed camera technique, Johannes Göttler, TU Dresden (Germany); Felix Greiffenhagen, Technische Univ. Graz (Austria); André E. Ramos Ruíz, Robert Kuschnierz, TU Dresden (Germany); Jakob Woissetschläger, Technische Univ. Graz (Austria); Jürgen W. Czarnecki, TU Dresden (Germany) .... [10677-79]

Coffee Break ........................................... Thu 15:15 to 15:45

SESSION 14

LOCATION: MARIE CURIE B ...................................... THU 15:45 TO 17:15

Modelling, Computation and Design IV

Session Chair: Corinne Fournier, Univ. Jean Monnet Saint-Etienne (France)

15:45: Supervised machine learning for 3D light sheet fluorescence microscopy without manual annotation: application to spheroids, Rosa Huaman, Pejman Rasti, Univ. d’Angers (France); Charlotte Riviere, Univ. Claude Bernard Lyon 1 (France); David Rousseau, Univ. d’Angers (France) .................. [10677-80]

16:00: Analysis of probe position correction method in ptychography, Priya Dwivedi, Silvania F. Pereira, H. Paul Urbach, Technische Univ. Delft (Netherlands) .................. [10677-81]

16:15: Single-frame fringe pattern analysis using modified variational image decomposition aided by the Hilbert transform for fast full-field quantitative phase imaging, Maria Cywińska, Maciej Truslau, Warsaw Univ. of Technology (Poland); Vicente Milic, Univ. de Valencia (Spain); Krzysztof Patorski, Warsaw Univ. of Technology (Poland) .................. [10677-82]

16:30: A computationally efficient method of object reconstruction in synthetic aperture, Nikolay Nikolayev, Loughborough Univ. (United Kingdom) .... [10677-83]

16:45: Shape measurement by inverse raytracing, Carsten Glasenapp, Carl Zeiss AG (Germany) .................. [10677-84]

17:00: L 1-norm minimization-based accurate diffraction field calculation method emitted by three-dimensional objects, Gokhan Bora Esmer, Marmara Univ. (Turkey) .................. [10677-85]
CONFERENCE 10678
LOCATION: AUDITORIUM CASSIN
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WEDNESDAY 25 APRIL

OPENING REMARKS
LOCATION: AUDITORIUM CASSIN ........................................ 8:25 TO 8:30

SESSION 1
LOCATION: AUDITORIUM CASSIN ..................................... WED 8:30 TO 10:20
Interferometry I
Session Chair: Wolfgang Osten, Institut für Technische Optik (Germany)
9:00: Impulsive Brillouin micro-elastography for noncontact, fast mechanical mapping, Benedikt Krug, Nektarios Koukourakis, Jürgen Czerske, TU Dresden (Germany). ........................................... [10678-2]
9:20: Focusing type grating interferometer, Jia-Xian Liao, Bo-Yen Sun, Hung-Lin Hsieh, National Taiwan Univ. of Science and Technology (Taiwan). ........................................... [10678-3]
9:40: Perturbation-resistant RGB interferometry with pulsed LED illumination, Markus Schake, Peter Lehmann, Univ. Kassel (Germany). ........................................... [10678-4]
10:00: Laser heterodyne interferometer for simultaneous measurement of displacement, and roll-angle based on the acousto-optic modulators, Jingya Qi, Zhao Wang, Junhui Huang, Jianmin Gao, Xi’an Jiaotong Univ. (China). ........................................... [10678-5]
10:20: Coffee Break ......................................................... WED 10:20 TO 10:50

SESSION 2
LOCATION: AUDITORIUM CASSIN ..................................... WED 10:50 TO 12:20
Optical Tomography
Session Chair: Christophe Gorecki, FEMTO-ST (France)
10:50: The SS-OCT endomicroscopy probe based on MOEMS Mirau micro-interferometer for early stomach cancer detection (Invited Paper), Przemyslaw Struk, FEMTO-ST (France) and Silesian Univ. of Technology (Poland) and Univ. de Bourgogne Franche-Comté (France); Sylvester Bargiel, Christopher Taudt, Tobias Baselt, Bryan L. Nelsen, Westsächsische Hochschule Zwickau (Germany); Christopher Taudt, Tobias Baselt, Bryan L. Nelsen, Westsächsische Hochschule Zwickau (Germany); Luc Mohr, Alain Billard, FEMTO-ST (France) and Univ. de Bourgogne Franche-Comté (France). ........................................... [10678-6]
11:20: Stability characterization of a fixed sample, areal approach to wafer-scale profilometry using a modified low-coherence interferometer, Christopher Taudt, Tobias Baselt, Bryan L. Nelsen, Westsächsische Hochschule Zwickau (Germany); Edmund Koch, TU Dresden (Germany); Peter Hartmann, Westsächsische Hochschule Zwickau (Germany). ........................................... [10678-7]
11:40: Measurement of 3D refractive index distribution of multicore photonic crystal fibers by using self-interference digital holographic tomography, Jia-Xian Liao, Bo-Yen Sun, Hung-Lin Hsieh, National Taiwan Univ. of Science and Technology (Taiwan). ........................................... [10678-8]
12:00: The original application of hybrid lens in micromeasurements for optical coherence tomography, Dimitri Ioroghev Egorow, ITMO University (Russian Federation). ........................................... [10678-9]
Lunch/Exhibition Break ....................................................... WED 12:20 TO 13:40
CONFERENCE 10678

SESSION 5
LOCATION: AUDITORIUM CASSIN ........................... WED 16:40 TO 17:40

Optical Scatteringometry
Session Chair: Tino Hausotte, Friedrich-Alexander-Univ, Erlangen-Nürnberg (Germany)

16:40: New challenges in light scattering analysis of complex optical components, Myriam Zerrad, Michel Lequime, Simona Lukaiythe, Claude Amra, Institut Fresnel (France). [10678-19]

17:00: Mueller matrix imaging polarimetric scattering to study polarimetric properties of diffusion gratings, Thomas Sang Hyuk Yoo, Ecole Polytechnique (France) and Ctr. National de la Recherche Scientifique (France); Jean-Pierre Perin, Kurt Hingerl, Johannes Kepler Univ. Linz (Austria); Razvigor Ossifikovski, Enric Garcia-Caurel, Ecole Polytechnique (France) and Ctr. National de la Recherche Scientifique (France). [10678-20]

17:20: Multiple scattering of a focused laser beam by a cluster consisting of nonconcentric layered particles, Hany Ibrahim, Telecom Egypt (Egypt); Elsayed Esam M. Khaled, Assiut Univ. (Egypt). [10678-21]

WEDNESDAY POSTER SESSION
LOCATION: HALL RHIN . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . WED 17:45 TO 19:30

Conference attendees are invited to attend the Photonics Europe poster session on Wednesday 17:45 to 19.30. Posters will be on display after 10:00 Wednesday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Wave optical approach to deriving forces in optical tweezers, Qin Yu, Bryan Hennelly, National Univ. of Ireland, Maynooth (Ireland); John Healy, Univ. College Dublin (Ireland). [10678-13]

Strain soliton detection and velocity elasticity in opaque materials: holographic approach, Andrey V. Belashov, Ioffe Institute (Russian Federation) and ITMO Univ. (Russian Federation); Yaroslav Belikov, Irina Semenova, Ioffe Institute (Russian Federation). [10678-37]

Investigation of alumina nanometer pores sizes on the broadening of molecular oxygen absorption line, Ahmed Al-Saadi, Abdulaziz Aljalal, Waltheq Al-Basheer, Khaled Gasmii, King Fahd Univ. of Petroleum & Minerals (Saudi Arabia). [10678-38]

Optical challenging feature inline measurement system based on photometric stereo and HON feature extractor, Huiyu Liu, Northeastern Univ. (China). [10678-39]

Precision inspection of microcomponents flatness by Moiré interferometry, Said Meguellati, Univ. Ferhat Abbas de Sétif (Algeria). [10678-40]

Glass blowing platform for microfabrication of microoptical components, Christophe Gorecki, JoséVincente Carrión, Nicolas Passilly, Sylvester Bargiet, FEMTO-ST (France). [10678-42]

Step-index optical fiber sizing with a rainbow technique, Grzegorz Swiniak, Grzegorz Glomb, Wrocław Univ. of Science and Technology (Poland). [10678-43]

Immersion white light scanning interferometry using elastic polymer path length compensation, Husnenu Mukhtar, ICIube (France). [10678-44]

Determination of mechanical properties of borosilicate BK7 by multiscale and multicycle indentations, H. Benzamoa, Ecole Nationale Polytechnique d’Oran (Algeria); M. Bentouni, Univ. Ferhat Abbas de Sétif 1 (Algeria); M. Benchir, Ecole Nationale Polytechnique d’Oran (Algeria). [10678-45]

THURSDAY HOT TOPICS
LOCATION: AUDITORIUM CASSIN ........................... THU 9:00 TO 10:35

THURSDAY HOT TOPICS
LOCATION: SCHWEIZER AUDITORIUM ........................... THU 9:00 TO 10:35

9:00 to 9:50: Introduction
Harald Giessen, Univ. of Stuttgart, Germany

9:50 to 10:35: Quantum computations and quantum simulations with trapped ions
Rainer Blatt, Institute for Experimental Physics, Univ. of Innsbruck, Austria.

For additional details, please see page 8.

Coffee Break ...................................... Thu 10:35 to 11:00

SESSION 6
LOCATION: AUDITORIUM CASSIN ........................... THU 11:00 TO 12:40

Micro- and Nanotopography
Session Chair: Armando Albertazzi Gonçalves Jr., Univ. Federal de Santa Catarina (Brazil)

11:00: Application of coherence scanning interferometry for local spectral characterization of transparent layers, Rémy Claveau, Paul Montgomery, Manuel Flury, Univ. de Strasbourg (France). [10678-22]

11:20: Residual flatness error correction in three-dimensional imaging confocal microscopes, Carlos Bermudez, Sensof-Tech, S.L. (Spain); André Felgner, Physikalisch-Technische Bundesanstalt (Germany).

Pol Martinez, Altor Matilla, Cristina Cadaval, Roger Artigas, Sensof-Tech, S.L. (Spain). [10678-23]

11:40: GPU-accelerated simulation of the superresolution capabilities of dielectric microspheres using the differential method, Johannes Drozella, Karsten Frenner, Wolfgang Osten, Univ. Stuttgart (Germany). [10678-24]

12:00: Determination of structural deviations in wire grid polarizers for DUV application wavelengths by transmission spectroscopy in the visible spectral range, Thomas Siecke, Walter Dickmann, Johannes Dickmann, Carol Bibiana Rojas Hurtado, Bernd Bodermann, Stefanie Kroker, Physikalisch-Technische Bundesanstalt (Germany). [10678-25]

12:20: Parallel phase shift microscopy, vibrometry and focus tracking systems, Ibrahim Abdulhalim, Michael Ney, Amir Alzen, Andrey Nazarov, Avner Satfani, Ben-Gurion Univ of the Negev (Israel). [10678-26]

Lunch Break ...................................... Thu 12:40 to 13:50

SESSION 7
LOCATION: AUDITORIUM CASSIN ........................... THU 13:50 TO 16:20

Interferometry II
Session Chair: Jürgen W. Czarske, TU Dresden (Germany)


14:20: Dispersion-controlled low-coherent interferometry for thin-film characterization, Marco Preuss, Bryan L. Nelsen, Christopher Taudt, Peter Hartmann, Westächsische Hochschule Zwickau (Germany). [10678-28]

14:40: Ultrastable metrology laser at 633 nm using an optical frequency comb, Paul Köchert, Ulrike Blumröder, Technische Univ. Ilmenau (Germany). [10678-29]

15:00: Symmetrical double diffraction laser encoder, An-Jie Liang, Hung-Lin Hsieh, Pei-Yun He, National Taiwan Univ. of Science and Technology (Taiwan). [10678-30]

Coffee Break ...................................... Thu 15:20 to 15:40


16:00: Two-step phase shifting in fringe projection: modeling and analysis, Yongkai Yin, Jiaqi Mao, Xiangfeng Meng, Xiulun Yang, Shandong Univ. (China); Lei Lu, Henan Univ. of Technology (China); Dechun Li, Shandong Univ. (China); Eduard Reithmeier, Leibniz Univ. Hannover (Germany). [10678-32]
SESSION 8
LOCATION: AUDITORIUM CASSIN ................. THU 16:20 TO 17:40

Specialized Techniques
Session Chair: Christophe Gorecki, FEMTO-ST (France)

16:20: Mapping of the detecting units of the resonator-based multiplexed sensor, Anton V. Saetchnikov, Ruhr-Univ. Bochum (Germany) and Belarusian State Univ. (Belarus); Elina A. Tcherniavskaia, Vladimir A. Saetchnikov, Belarusian State Univ. (Belarus); Andreas Ostendorf, Ruhr-Univ. Bochum (Germany). ............................................... [10678-33]

16:40: Numerical analysis of angle-selective one-dimensional periodic structure for building energy management, Kazutaka Isoda, Koki Nagata, Mizue Ebisawa, Tokyo Metropolitan Industrial Technology Research Institute (Japan); Yukitoshi Otani, Utsunomiya Univ. (Japan). .................................................. [10678-34]

17:00: A model-based investigation on the effects of non-ideal display properties in phase measuring deflectometry, Jonas Bartsch, Bremer Institut für angewandte Strahletechnik GmbH (Germany); Johann Rasmus Nüss, Univ. Bremen (Germany); Martin Prinzler, Michael Kalms, Bremer Institut für angewandte Strahletechnik GmbH (Germany); Ralf B. Bergmann, Bremer Institut für angewandte Strahletechnik GmbH (Germany) and Univ. Bremen (Germany). ............................................... [10678-35]

17:20: Ultrasmall mechanical deformation sensor using a hybrid fiber optic-based triangular photonic crystal structure, Roxana-Mariana Beiu, Valeriu Beiu, Virgil-Florin Duma, Aurel Vlaicu Univ. of Arad (Romania). .............................................. [10678-36]
Optics, Photonics and Digital Technologies for Imaging Applications

Conference Chairs: Peter Schelkens, Vrije Univ. Brussel (Belgium); Touradj Ebrahimi, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Gabriel Cristóbal, Consejo Superior de Investigaciones Científicas (Spain)

Programme Committee: Olivier Aubreton, Univ. de Bourgogne (France); Jan T. Bosiers, Teledyne DALSA (Netherlands); Daping Chu, Univ. of Cambridge (United Kingdom); Jana Dittmann, Otto-von-Guericke- Univ. Magdeburg (Germany); Marek Domanski, Univ. of Poznan (Poland); Boris Escalante-Ramirez, Univ. Nacional Autónoma de México (Mexico); Pascuala Garcia-Martinez, Univ. de Valencia (Spain); Laurent Jacques, Univ. Catholique de Louvain (Belgium); Tom R. L. Kimpe, Barco N.V. (Belgium); Tomasz Kozacki, Warsaw Univ. of Technology (Poland); Dragan Kukoč, RT-RK Institute for Computer Based Systems (Serbia); Jukka-Tapani Mäkinen, VTT Technical Research Ctr. of Finland (Finland); Maria S. Millán Garcia-Varela, Univ. Politécnica de Catalunya (Spain); Stuart W. Perry, (Canon Information Systems Research (Australia); Pasi Saarikko, Oculus VR, LLC (United States); Martin Schrader, Nokia Research Ctr. (Finland); Lea Skorin-Kapov, Univ. of Zagreb (Croatia); Colin James Richard Sheppard, National Univ. of Singapore (Singapore); Athanasios S. Skodras, Univ. of Patras (Greece); Andrew G. Tescher, AGT Associates (United States); Frédéric Truchetet, Univ. de Bourgogne (France); Gerald Zauner, FH OO Forschungs & Entwicklungs GmbH (Austria)

TUESDAY 24 APRIL

LOCATION: SALON 1 ................................. 8:35 TO 8:40

OPENING REMARKS

LOCATION: SALON 1 ................................. TUE 8:40 TO 10:20

SESSION 1

LOCATION: SALON 1 ................................. TUE 8:40 TO 10:20

Medical Imaging I

Session Chair: Boris Escalante-Ramirez, Univ. Nacional Autónoma de México (Mexico)

8:40: Quality enhancement of multispectral images for skin cancer optical diagnostics, Katrina Bololochko, Dmitrijs Bliznuks, Riga Technical Univ. (Latvia); Ilze Lihacova, Alexey Lihachov, Univ. of Latvia (Latvia) . . . . . . [10679-1]

9:00: Monitoring of the excretion of fluorescent nanocomposites out of the body using artificial neural networks, Olga Sarmanova, Sergey Burkov, M.V. Lomonosov Moscow State Univ. (Russian Federation); Sergey Dolenko, Igor Isaev, Skobeltsyn Institute of Nuclear Physics (Russian Federation); Kirill Laptinsky, M.V. Lomonosov Moscow State Univ. (Russian Federation); Neeraj Prabhakar, Jessica Rosenholm, Åbo Akademi Univ. (Finland); Tatiana Dolenko, M.V. Lomonosov Moscow State Univ. (Russian Federation) . . . . . . [10679-2]

9:20: Cloud infrastructure for skin cancer scalable detection system, Dmitrijs Bliznuks, Pavel Osipovs, Riga Technical Univ. (Latvia); Alexey Lihachev, Institute of Atomic Physics and Spectroscopy, Univ. of Latvia (Latvia) . . . . . . [10679-3]

9:40: Deep features using convolutional neural networks for early stage cancer detection, Sawon Prathier, Indian Institute of Technology Kanpur (India); Nabijasachi Mukhopadhyay, Nirmalya Ghosh, Indian Institute of Science Education and Research Kolkata (India); Asima Pradhan, Indian Institute of Technology Kanpur (India); Prasanta K. Panigrahi, Indian Institute of Science Education and Research Kolkata (India) . . . . . . [10679-4]

10:00: Multiclass classifications of diabetic retinopathy by support vector machine, Nabijasachi Mukhopadhyay, Indian Institute of Science Education and Research Kolkata (India); Sawon Prathier, Indian Institute of Technology Kanpur (India); Jay Chhablani, Ashutosh Richharjia, LV Prasad Eye Institute (India); Nirmalya Ghosh, Prasanta K. Panigrahi, Indian Institute of Science Education and Research Kolkata (India) . . . . . . [10679-5]

Coffee Break ................................. TUE 10:20 TO 10:50

10:50: Classification of brain tissue with optical coherence tomography by employing texture analysis, Marcel Lenz, Ruhr-Univ. Bochum (Germany); Robin Krug, Univ. Knappschaftskrankenhaus Bochum GmbH (Germany); Christopher Dillmann, Technische Fachhochschule Georg Agricola zu Bochum (Germany); Nils C. Gerhardt, Ruhr-Univ. Bochum (Germany); Hubert Welp, Technische Fachhochschule Georg Agricola zu Bochum (Germany); Kirsten Schmieder, Univ. Knappschaftskrankenhaus Bochum GmbH (Germany); Martin R. Hofmann, Ruhr-Univ. Bochum (Germany) . . . . . . [10679-6]

11:10: Visual measurement of any shape of the flaccid membrane of the extracorporeal pneumatic heart assist pump, Wojciech Sulej, Krzysztof Murawski, Wojkowska Akademia Techniczna im. Jarostawa Dabrowskiego (Poland) . . . . . . [10679-7]

11:30: Dual-beam manually-actuated distortion-corrected imaging (DMDI) using galvanometer scanner, Madeline Harlow, Anthony Lee M.D., Geoffrey Hohert, Pierre Lane, Calum MacAulay, BC Cancer Research Ctr. (Canada) . . . . . . [10679-8]

11:50: Quantification of breast cancerous tissue using high-resolution full-field optical coherence tomography, Kavita Dubey, Neeru Singla, Vishal Srivastava, Thapar Institute of Engineering and Technology Univ. (India) . . . . . . [10679-9]

12:10: High sensitivity low-power CMOS transimpedance amplifier for near-infrared optical tomography, Ahmed Atef, Sohag Univ. (Egypt); Elsayed Esam M. Khaled, Assiut Univ. (Egypt) . . . . . . [10679-10]

Lunch/Exhibition Break ............................. TUE 12:30 TO 14:00

SESSION 3

LOCATION: SALON 1 ................................. TUE 14:00 TO 16:00

Microscopic Imaging

Session Chair: Gloria Bueno, Univ. de Castilla-La Mancha (Spain)

14:00: Fluorescence whole slide imaging using LED-based color-sequential multiframe scanning, Leon van de Graaff, Sjoerd Stallinga, Lucas van Vliet, Technische Univ. Delft (Netherlands) . . . . . . [10679-11]

14:20: Axial scanning and spherical aberration correction in confocal microscopy employing an adaptive lens, , Katrin Philipp, TU Dresden (Germany); Florian Lemke, Matthias C. Wapler, Univ. of Freiburg (Germany); Nektarios Koukourakis, TU Dresden (Germany); Ulrike Wallrabe, Univ. of Freiburg (Germany); Jürgen W. Czarske, TU Dresden (Germany) . . . . . . [10679-12]

14:40: Digital Rheinberg illumination: optodigital staining of cells with digital holographic microscopy, Bryan M. Hennelly, National Univ. of Ireland, Maynooth (Ireland); John J. Healy, Univ. College Dublin (Ireland); Xin Fan, National Univ. of Ireland, Maynooth (Ireland) . . . . . . [10679-13]
15:00: Lights and pitfalls of convolutional neural networks to diatom identification, Anibal Pedraza, Gloria Bueno, Oscar Déniz, Jesus Ruiz-Santugado, UNEXPO, Univ. de Castilla La Mancha (Spain); Carles Sanz, Instituto de Óptica “Daza de Valdés” (Spain) and Consejo Superior de Investigaciones Científicas (Spain); Saul Blanco, Maria Borrego-Ramos, Adriana Olenici, Univ. de León (Spain); Gabriel Cristobal, Instituto de Óptica “Daza de Valdés” (Spain) and Consejo Superior de Investigaciones Científicas (Spain);[10679-14]

15:20: Image scanning microscopy (ISM) with a single photon avalanche diode (SPAD) array detector, Colin J. R. Sheppard, Istituto Italiano di Tecnologia (Italy); Guido Lorei, Politecnico di Milano (Italy); Mauro Buttafava, Politecnico di Milano (Italy); Marco Castello, Alberto Diaspre, Giorgio Tortarolo, Istituto Italiano di Tecnologia (Italy); Alberto Tosi, Politecnico di Milano (Italy); Giuseppe Vicipadi, Istituto Italiano di Tecnologia (Italy); Federica Villa, Politecnico di Milano (Italy).[10679-15]

15:40: The generation of optical needle and magnetization needle with tunable longitudinal depth, Jian Fu, Peifeng Chen, Ying Wang, Huazhong Univ. of Science and Technology (China).[10679-16]

Coffee Break. TUE 16:00 to 16:30

TUESDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM TUE 16:30 TO 18:05

Hot Topics Session II

16:30 to 16:55: Introduction
Francis Berghmans, Vrije Univ. Brussel, Belgium

16:55 to 17:20: Coherent combination of fiber amplified ultrashort laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Patrick Kupper, EPFL-The Institute of Photonics Sciences, Spain

For additional details, please see page 7.

TUESDAY POSTER SESSION

LOCATION: HALL RHIN TUE 18:00 TO 19:30

Conference attendees are invited to attend the Photonics Europe poster session on Tuesday 18.00 to 19.30. Posters will be on display after 10.00 Tuesday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Development algorithms for object detection and tracking on video in automatic control contests, Dmytro Zbarsky, Vsevolod Cheburkanov, ITMO Univ. (Russian Federation).[10679-43]

Region of interest extraction based on common saliency analysis and superpixel clustering for remote sensing images, Xinran Lv, Libao Zhang, Shuang Wang, Beijing Normal Univ. (China).[10679-46]

Hough transform-based image processing algorithm in the optical-electronic angle measuring device, Anton A. Nogin, Timofey K. Korolev, Igor A. Konyakhin, ITMO Univ. (Russian Federation).[10679-47]

Influence of noise on the estimation method to reject damped sinusoidal vibrations in adaptive optics systems, Dariusz Kania, Wroclaw Univ. of Technology (Poland); Józef Borkowski, Wroclaw Univ. of Science and Technology (Poland).[10679-48]

Augmented logarithmic Gaussian process regression methodology for chlorophyll prediction, Subhadip Dey, Indian Institute of Technology Kharagpur (India); Saxon Pratiher, Indian Institute of Technology Kharagpur (India); Chanchal K. Mukherjee, Indian Institute of Technology Kharagpur (India); Sawon Pratiher, Indian Institute of Technology Kanpur (India).[10679-49]

Block reconstruction of object image based on compressed sensing and orthogonal modulation, Xin Zhou, Yuanzhan Zhou, Sichuan Univ. of Science and Technology (China); Jiaping Hu, Chengdu Fine Optical Engineering Research Ctr. (China); Sheng Yuan, North China Univ. of Water Resources and Electric Power (China); Luozhi Zhang, Dongming Huo, Jinlii Xiu, Sichuan Univ. (China).[10679-50]

Optical design and unification of objectives: CCF PlanApo for 28 mm objective lens, Vladimir Nikolaev, Artem Evtikhiev, Bauman Moscow State Technical University (Russia); Elena Korneeva, Institute of Physics and Technology (China); Vladimir G. Rodin, Rostislav S. Starikov, National Research Nuclear Univ. MEPhI (Russian Federation).[10679-60]

Dynamic ultrasonic wavefield noncontact measurement based on digital holography, Xiaofeng Qiu, Shilin Chen, Nanjing Univ. of Science and Technology (China).[10679-53]

Temperature identification, Francis Berghmans, Vrije Univ. Brussel, Belgium; Carles Sanz, Instituto de Óptica “Daza de Valdés” (Spain) and Consejo Superior de Investigaciones Científicas (Spain); Saul Blanco, Maria Borrego-Ramos, Adriana Olenici, Univ. de León (Spain).[10679-54]

Particle image models for optical flow-based velocity field estimation in industrial velocimetry, Grzegorz Grzmot, Univ. of Wollongong (Australia); Mauro Buttafava, Politecnico di Milano (Italy).[10679-55]

Fluid flow measurements using optical flow velocity field estimation and LED-based light sheet illumination, Grzegorz Grzmot, Grzegorz Świarniak, Janusz Mroczka, Wrocław Univ. of Science and Technology (Poland).[10679-56]

Freeform optics complexity estimation: comparison of methods, Eduard R. Muslimov, Lab. d’Astrophysique de Marseille, Aix-Marseille Univ. (France); Emmanuel Hugot, Simons Lombardo, Mélanie Roulet, Marc Ferrari, Lab. d’Astrophysique de Marseille, Aix-Marseille Univ. (France).[10679-57]

Endogenous two- and three-photon fluorescence of a biological substance with a picosecond ultrawide band laser source, Claire Lefort, XLIM Institut de Recherche (France); Laetitia Magnol, Univ. de Limoges (France); Véronique Blankiet, Unité de Génétique Moléculaire Animale (France); Philippe Lévêque, Vincent Couturier, XLIM Institut de Recherche (France).[10679-58]

Optical system design of the telescopic system with a variable magnification, Ivan Tarasov, Helen A. Tsyganok, ITMO Univ. (Russian Federation).[10679-59]

The optimal planning methods of remote sensing experiments for the future satellite meteorology problems, Nikolay Urnov, EOS Data Analytics, Inc. (Ukraine).[10679-60]

Sparse matrix-based image enhancement for target detection using deep learning, Zhe-Yuan Kao, Shih-Yu Chen, Fu-Ming Yang, Chen-Chung Chen, National Yunlin Univ. of Science and Technology (Taiwan).[10679-61]

A method for automatic analysis of scanned 3D models of human hands and feet, Mihails Kovalovs, Riga Technical Univ. (Latvia).[10679-62]

Multisensor array for polarimetric light-field imaging, Yunsong Nie, Beijing Institute of Space Mechanics and Electricity (China); Chongde Zi, Tao Yue, Xun Cao, Yunqian Li, Nanjing Univ. (China).[10679-63]

New structures of diffraction-resistant beams, Michel Zamboni-Rached, Univ. Estadual de Campinas (Brazil); Ahmed Dorrah, Mohammad Mojahedi, Univ. of Toronto (Canada).[10679-65]

Electrochromic tunable filters based on nanotubes with viologen incorporation, Alexander Hein, Technical Univ. Kaiserslautern (Germany); Carsten Kortz, Egbert Oesterschulze, Technische Univ. Kaiserslautern (Germany).[10679-66]

Opto-electronic scanner for operational control of security holograms authenticity documents, Ivan Tsyganok, Vasyly K. Kolyuchkin, Vladimir E. Talalaev, Nikolay V. Piryutin, Sergey B. Odinokov, Bauman Moscow State Technical University (Russia); Evgeny Bondar, Alexander Hein, Technische Univ. Kaiserslautern (Germany); Vsevolod D. Cheburkanov, National Research Nuclear Univ. MEPhI (Russian Federation).[10679-67]

Analysis of lightguide parameters for multicolor augmented reality indicator based on DOEs, Yanina Grad, Sergey B. Odinokov, Vladimir Nikolaev, Artem Evtikhiev, Bauman Moscow State Technical University (Russia).[10679-68]

Convolutional neural networks for skin cancer classification on OCT images, Dmitry S. Raupov, Oleg Myakinin, Ivan Bratchenko, Valery Zakharov, Samara Univ. (Russian Federation).[10679-69]

Asymmetric optical encryption technique implementing spatially incoherent illumination, Vitaly V. Krasnov, Pavel A. Cherenkov, Nikolay N. Evtikhiev, Ekaterina D. Minaeva, Vladislav G. Rodin, National Research Nuclear Univ. MEPhI (Russian Federation).[10679-70]

Digital hologram quality improvement by elimination of imaging sensor noise, Pavel A. Cherenkov, Nikolay N. Evtikhiev, Ekaterina D. Minaeva, Vladislav G. Rodin, Rostislav S. Starikov, National Research Nuclear Univ. MEPhI (Russian Federation).[10679-71]

Deep learning object recognition in multispectral UV imaging, Vladimir A. Knyaz, Sergey Zhetlov, GooSiMARS (Russian Federation).[10679-72]

Methods of entering of compensation distortions into images for protection from nonplanar development of spatially augmented reality, Anton Chukhlimov, Ksenia Ezhova, ITMO Univ. (Russian Federation).[10679-73]

A square glass fiber measurement method for the collection of X-rays in outer space, YaFeng Qiu, Shilin Chen, Nanjing Univ. of Science and Technology (China).[10679-74]

Intelligent reconnaissance method and system of mountain geological disaster based on mobile machine vision and artificial neural network information fusion, Cheng Zhu, Shenzhen Univ. (China).[10679-75]
WEDNESDAY 25 APRIL

SESSION 4

LOCATION: SALON 1  WED 8:30 TO 10:30

Plenoptic Image Processing

Session Chair: Peter Schelkens, Vrije Univ. Brussels (Belgium)

8:30: Information processing challenges of full parallax light field displays, Zahir Y. Alpaslan, Hussein S. El-Ghoury, Ostendo Technologies, Inc. (United States); Peter Schelkens, Vrije Univ. Brussels (Belgium). [10679-17]

8:50: Benchmarking coding standards for digital holography represented on the object plane, Marco Bernardo, Antonio M. G. Pinheiro, Manuela Pereira, Univ. da Beira Interior (Portugal).

9:10: Compression scheme for sparsely sampled light field data based on pseudo multiview sequences, Waqs Ahmad, Mårten Sjöström, Roger Olsson, Mid Sweden Univ. (Sweden).

9:30: View-dependent compression of digital holograms based on matching pursuit, Ana El Rhammad, b<>com (France); Patrick Giosa, Orange SA (France); Antonin Gilles, b<>com (France); Marco Cagnazzo, Chungbuk National Univ. (Korea, Republic of).

9:50: Advanced mobile three-dimensional display based on computer-generated integral imaging, Munh-Uchral Erdenebat, Byeong-Jun Kim, Yan-Ling Piao, Nyamsuren Darkhanbaatar, Ki-Chul Kwon, Nam Kim, Chungbuk National Univ. (Korea, Republic of).

10:10: Rapid vertical tissue imaging with clinical multiplanar tomography, Hans Georg Breunig, Benjamin Sauer, JenLab GmbH (Germany); Ana Batista, Univ. des Saarlandes (Germany); Karsten Koenig, JenLab GmbH (Germany).

10:30: Coffee Break

SESSION 5

LOCATION: SALON 1  WED 11:00 TO 12:20

Display Systems

Session Chair: Jukka-Tapani Mäkinen, VTT Technical Research Ctr. of Finland Ltd. (Finland)

11:00: Laser speckle reduction based on partial spatial coherence and microlens-array screens, Jael Pauwels, Guy Verschaffelt, Vrije Univ. Brussels (Belgium).

11:20: Camera-based color measurement of DLP projectors using a semisynchronized projector camera system, Marcel Heinz, Guido Brunnett, Danny Kowerko, Technische Univ. Chemnitz (Germany).

11:40: Optical flow-based filtering for effective presentation of the enhanced vision on a HUD, Vladimir V. Kozhin, GosNIAS (Russian Federation).

12:00: Conception of a touchless human machine interaction system for operating rooms using deep learning, Florian Pereme, Jesus Zegarra, Mirko Scavazzin, Franc Valenti, Jean-Pierre Radoux, Altran Technologies (France).

Lunch/Exhibition Break
THURSDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ............... THU 9:00 TO 10:35

Hot Topics III
9.00 to 9:05: Introduction
Harald Giessen, Univ. of Stuttgart, Germany
9.05 to 9:50: From extreme nonlinear optics to ultrafast atomic physics
Anne L'Huillier, Lund Univ., Sweden
9:50 to 10:35: Quantum computations and quantum simulations with trapped ions
Rainer Blatt, Institute for Experimental Physics, Univ. of Innsbruck, Austria

For additional details, please see page 8.

Coffee Break ...................................... Thu 10:35 to 11:00

SESSION 8
LOCATION: SALON 1 ....................... THU 11:00 TO 12:40

Quality Assessment
Session Chair: Peter Schelkens, Vrije Univ. Brussel (Belgium)
11:00: How to measure image quality of virtual reality cameras in practice, Veli-Tapani Peltoketo, Nokia Corp. (Finland) ...........[10679-36]
11:20: Interplay between light pipe and controlled coherence laser source on the emergence of subjective speckle, Pierre Walczak, Stéphane Barland, Institut de Physique de Nice (France); Xavier Hachair, BBright (France) ..........................................[10679-37]
11:40: Automating the surface inspection on small customer-specific optical elements, Alexander Schöch, Carlo Bach, Carsten Ziolek, NTB Interstaatliche Hochschule für Technik Buchs (Switzerland) ........[10679-38]
12:00: Multiperspective measurement of yarn hairiness using mirrored images, Bugao Xu, Univ. of North Texas (United States); Lei Wang, Weidong Gao, Jiangnan Univ. (China) ..........................[10679-39]
12:20: The device for automated quality inspection and authentication of security holograms, Vasily V. Kolyuchkin, Sergey B. Odinokov, Vladimir E. Talalaev, Ivan Tsyganov, Bauman Moscow State Technical Univ. (Russian Federation) ...............................................[10679-40]
Lunch Break ...................................... Thu 12:40 to 13:50

SESSION 9
LOCATION: SALON 1 ....................... THU 13:50 TO 15:10

Image Analysis
Session Chair: Peter Schelkens, Vrije Univ. Brussel (Belgium)
13:50: Face recognition method for cases of an insufficient training set, using 3D models of face that were created using two facial images, Olga Krutikova, Riga Technical Univ. (Latvia); Aleksandrs Sisojevs, Ventspils Univ. College (Latvia) ..............................[10679-41]
14:10: Research on method of vision navigation for mobile robot in unstructured environment, Liming Zhao, Chongqing Univ. of Posts and Telecommunications (China) ...........................[10679-42]
14:30: Fast object recognition method from random measurements of compressive sensing camera, Lingli Tang, Lingling Ma, Chuanrong Li, Yongsheng Zhou, Qi Wang, Chinese Academy of Sciences (China) ..........[10679-43]
14:50: Detection of multiple moving objects from UAV videos, Bahareh Kalantar, Shafri Mansor, Univ. Putra Malaysia (Malaysia); Octavio Icasio-Hernández, Ctr. Nacional de Metrología (Mexico); Alfian Abdul Halin, Helmi Zulhaidi M. Shafri, Univ. Putra Malaysia (Malaysia); Mohsen Zand, Islamic Azad Univ. (Iran, Islamic Republic of) ........[10679-44]
CONFERENCE 10680
LOCATION: SALON 3

Monday–Thursday 23–26 April 2018 • Proceedings of SPIE Vol. 10680

Optical Sensing and Detection

Conference Chairs: Francis Berghmans, Vrije Univ. Brussel (Belgium); Anna G. Mignani, Istituto di Fisica Applicata Nello Carrara (Italy)

Programme Committee: Francesco Baldini, Istituto di Fisica Applicata Nello Carrara (Italy); Hartmut Bartelt, Institut für Photonische Technologien e.V. (Germany); Brian Culshaw, Univ. of Strathclyde (United Kingdom); Thomas Geernaert, Vrije Univ. Brussel (Belgium);
Roger M. Groves, Technische Univ. Delft (Netherlands); Jane Hodgkinson, Cranfield Univ. (United Kingdom); Jiri Homola, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); Leszek Roman Jaroszewicz, Military Univ. of Technology (Poland); Elfed Lewis, Univ. of Limerick (Ireland); Alexis Monde, MCH Engineering LLC (United States); Luc Thevenaz, École Polytechnique Fédérale de Lausanne (Switzerland); Alessandro Tredicucci, NEST (Italy); Moshe Tur, Tel-Aviv Univ. (Israel); Wacław Urbaniczky, Wroclaw Univ. of Technology (Poland); Jan Van Roosbroeck, FBGS International (Belgium); David J. Webb, Aston Univ. (United Kingdom); Libo Yuan, Harbin Engineering Univ. (China)

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ........................... MON 9:00 TO 11:00
Hot Topics Session I

9:00 to 9:15: Opening Remarks and Awards Presentation
9:15 to 9:25: Welcome
   Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30: Introduction to Hot Topics
   Thierry Georges, Oxyius, France
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
   Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
   Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

For additional details please visit page 6.

OPENING REMARKS
LOCATION: SALON 3 .................................................. MON 11:25 TO 11:30

SESSION 1
LOCATION: SALON 3 ................................................. MON 11:30 TO 12:40

Detector and Imager Technology and Physics I
Session Chair: Anna G. Mignani, Istituto di Fisica Applicata Nello Carrara (Italy)

11:30: On-ground calibration of DESIS: DLR's Earth sensing imaging spectrometer for the international space station ISS (Invited Paper)
   Ilse Sebastian, David Krutz, Andreas Eckardt, Holger Venus, Ingo Walter, Burghardt Günther, Michael Neidhardt, Deutsches Zentrum für Luft- und Raumfahrt e.V. (Germany); Ralf Reulke, Humboldt-Universitaet zu Berlin (Germany); Rupert Müller, Mathias Uhlig, Deutsches Zentrum für Luft- und Raumfahrt e.V. (Germany); Sandra Müller, Thomas Peschel, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Simone Arloth, Matthias Lieder, Friedrich Schrandt, Deutsches Zentrum für Luft- und Raumfahrt e.V. (Germany).

[10680-1]

12:00: Classification of cracks on concrete surface using false colour HSV images, including near-infrared information.
   Bruno Oliveira Santos, Jónatas Valença, Eduardo Júlio, Instituto Superior Técnico (Portugal).

[10680-2]

12:20: Kernel-based crossstalk quantification and analysis of a CMOS image sensor
   Swaraj Bandhu Mahato, Joris De Ridder, Hans Van Winckel, KU Leuven (Belgium).

[10680-3]

Lunch Break ................................................... Mon 12:40 to 13:30

SESSION 2
LOCATION: SALON 3 ................................................. MON 13:50 TO 15:20

Detector and imager Technology and Physics II
Session Chair: Francis Berghmans, Vrije Univ. Brussel (Belgium)

13:50: Temperature imaging in the MWIR range independent on emissivity (Invited Paper)

[10680-4]

14:20: Room-temperature carbon nanotube bolometer with surface-plasmon enhanced and spectrally selective response
   Boris I. Afinogenov, Daria S. Kopylova, Skolkovo Institute of Science and Technology (Russian Federation); Ksenia A. Brashtshova, Vladimir O. Bessonov, M.V. Lomonosov Moscow State Univ. (Russian Federation); Anton S. Aminov, Canatu Oy (Finland); Sergey A. Dyakov, Nikolay A. Gippsiu, Skolkovo Institute of Science and Technology (Russian Federation); Andrei A. Fedyanin, M.V. Lomonosov Moscow State Univ. (Russian Federation); Albert G. Nasibulin, Skolkovo Institute of Science and Technology (Russian Federation) and Aalto Univ. (Finland).

[10680-5]

14:40: Graphene-based lateral Schottky diodes for detecting terahertz radiation.
   Georgy Fedorov, Moscow Institute of Physics and Technology (Russian Federation); Igor Gayduchenko, Nadezhda Titova, Moscow State Pedagogical Univ. (Russian Federation); Maxim Moskovin, National Research Univ. of Electronic Technology (Russian Federation); Elena Obraztsova, Maxim Rybin, A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences (Russian Federation); Gregory Goltsman, Moscow State Pedagogical Univ. (Russian Federation).

[10680-6]

15:00: Localized surface plasmon resonance assisted UV photodetection through nanoholes.
   Abdolreza Dube, Chang Wei Cheng, Ragini Mishra, Tsung-Yu Huang, Ta-Jen Yen, Shanggi Gwo, National Tsing Hua Univ. (Taiwan).

[10680-7]

Coffee Break ................................................... Mon 15:20 to 15:50

SESSION 3
LOCATION: SALON 3 ................................................. MON 15:50 TO 17:10

Detector and imager Technology and Physics III
Session Chair: Francis Berghmans, Vrije Univ. Brussel (Belgium)

15:50: Fast fluorescence lifetime determination with an ASIC detector
   Christian Möller, CS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH (Germany); Volker Körner, DMOS GmbH (Germany); Christoph Heine, Hans-Georg Ortlepp, CS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH (Germany); Wolfram Altemann, Tobias Schildbach, Markus Winkler, Dagmar Buchweitz, Marco Götz, DMOS GmbH (Germany); Thomas Ortlepp, CS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH (Germany).

[10680-8]

16:10: Study of CdTe/HgCdTe annealing on the effect of long-wavelength HgCdTe detector
   Xi Wang, Chung Lin, Songmion Zhou, Hui Xia, Changhong Su, Yandong Wei, Quanqiu Sun, Shangxi (Ming) Wang, Institute of Technical Physics of the Chinese Academy of Sciences (China).

[10680-9]

16:30: GaNAsSb-based sensor for measurement of oil and oil products concentration in water.
   Yang V. Lebidok, Dzmitry M. Kabanau, Maxim V. Kabanau, B.I. Stepanov Institute of Physics (Belarus)

[10680-10]

16:50: Design and development of portable fluorescence reader using silicon photo multiplier (SiPM) sensor.
   Roshan Lal Makkar, Indian Institute of Technology Bombay (India) and Society for Applied Microwave Electronics Engineering and Research (India); Sana Syeda Aliya, Vivek Borse, O.Rohit Srivastava, Indian Institute of Technology Bombay (India).

[10680-12]
Tuesday 24 April

Session 4

Location: Salon 3  
Tuesday 8:30 to 10:20

Optical Spectroscopy and Devices

Session Chair: Francesco Chiavolioli, of CNR-IFAC (Italy)

8:30: In-situ ratiometric pathlength calibration of integrating spheres used in measurement of absorbance (Invited Paper), Sarah Bergin, Jane Hodgkinson, Daniel Francis, Dackson Masiyano, Nicholas M. Davis, Stephen E. Staines, Ralph P. Tatam, Cranfield Univ. (United Kingdom).

9:00: Herriott FT-IR (Fourier Transform Infrared): achieving compact high spectral resolution, Erga Lifthaf, Assaf Levanoan, Michael Meiren, Haim Suchowski, Tel Aviv Univ. (Israel).

10:45: RLS (Raman laser spectrometer) optical behavior after a qualification test campaign, Cecilia Gordillo, Ingeniería de Sistemas para la Defensa de España (Spain); Gonzalo Ramos, INTA Instituto Nacional de Técnica Aeroespacial (Spain); Juan Cabrero, José Antonio Rodríguez, Amaia Santiago, Ingeniería de Sistemas para la Defensa de España (Spain); Rosario Canchal, INTA Instituto Nacional de Técnica Aeroespacial (Spain); Laurent Bastide, Ingeniería de Sistemas para la Defensa de España (Spain); Andoni Moral, Tomás Belenguer, Mikel Sanz-Palomino, Carlos Pérez, Marianela Fernández, María Colombo, Paloma Gallego, INTA Instituto Nacional de Técnica Aeroespacial (Spain); Ian Hutchinson, Univ. of Leicester (United Kingdom); José Miguel Encinas, INTA Instituto Nacional de Técnica Aeroespacial (Spain); Richard Ingleby, Univ. of Leicester (United Kingdom); David Escrivano, INTA Instituto Nacional de Técnica Aeroespacial (Spain); Guillermo López-Reyes, Fernando Rull, Univ. of Valladolid (Spain).

Tuesday 24 April

Session 5

Location: Salon 3  
Tuesday 10:50 to 11:50

Detection for Visible Light Communications

Session Chair: Francis Berghmans, Vrije Univ. Brussel (Belgium)

10:50: Fine-grained indoor localization: optical sensing and detection, Manuela Vieira, Instituto Superior de Engenharia de Lisboa (Portugal); Manuela Vieira, Instituto Superior de Engenharia de Lisboa (Portugal); Paula Louro, UNINOVA (Portugal); Pedro Vieira, Instituto Superior de Engenharia de Lisboa (Portugal).

11:00: Design of a transmission system for indoor navigation based on VLC, Paula Louro, Manuela Vieira, Fábio Rodrigues, Manuel Augusto Vieira, Instituto Superior de Engenharia de Lisboa (Portugal); João Costa, Ctr. of Technology and Systems, UNINOVA (Portugal).

11:30: Vehicular visible light communication: road-to-vehicle, Manuel Augusto Vieira, UNINOVA (Portugal); Manuela Vieira, Instituto Superior de Engenharia de Lisboa (Portugal); Paula Louro, UNINOVA (Portugal); Pedro Vieira, Instituto de Telecomunicações (Portugal); Fábio Rodrigues, Instituto Superior de Engenharia de Lisboa (Portugal).

Lunch/Exhibition Break  
Tuesday 11:30 to 13:20

Wednesday 25 April

Session 6

Location: Salon 3  
Tuesday 13:20 to 16:00

Grating-based Sensors

Session Chair: Francesco Chiavolioli, of CNR-IFAC (Italy)

13:20: Coating influence on the refractometric sensitivity of plasmonic optical fiber grating spectral comb, Christophe Caucheteur, Médéric Loyez, Andreas Ioannou, Álvaro González-Vila, Univ. de Mons (Belgium).

13:40: Microstructured fiber Bragg grating-based pressure sensors in a downhole-like hydrogen rich environment, Ji-Yung Huang, Univ. de Mons (Belgium); Jan Van Roosbroeck, Johan Vlekken, Fraunhofer-Institut für Optronik, Systemtechnik und Bildaufbereitung (Germany); Armin Luk M.D., Staatliches Klinikum (Germany); Luca Poletto, CNR-IFN UoS Padova (Italy).

14:00: Integrated interrogator circuits for fiber optic sensor network in generic InP photonics integrated circuit technology, Andrzej Każmiernczak, Anna Jusza, Mateusz Slowikowski, Stanisław Stopiński, Richard C. Hendriks, Ryszard Piramidowicz, Warsaw Univ. of Technology (Poland).
CONFERENCE 10680

SESSION 8

LOCATION: SALON 3 ............................... WED 10:50 to 12:30

Optical Sensors for Medical Applications II
Session Chair: Anna Grazia Magnini, Istituto di Fisica Applicata “Nello Carrara” (Italy)

10:50: Expanding luminescence thermometry detection range to the SWIR for biomedical applications, Albenec Nexha, María Cinta Pujo, Magdalena Aguilo, Francesc Diaz, Joan J. Carvajal Martí, Oleksandr Savchuk, Univ. Politécnica de Valencia (Spain). [10680-34]

11:00: Optical fibre luminescence sensor for real-time LDR brachytherapy dosimetry, Peter Woulfe, Galway Clinic (Ireland); Sinead O’Keeffe, Univ. of Limerick (Ireland); Francis J. Sullivan, National Univ. of Ireland, Galway (Ireland). [10680-35]

11:30: Novel optical fiber sensors and their applications in radiotherapy, Majeed Ahhari, Michael Martyn, National Univ. of Ireland, Galway (Ireland); Lingxia Chen, Univ. of Limerick (Ireland); Sean Gillespie, Peter Woulfe, Galway Clinic (Ireland); Sinead O’Keeffe, Univ. of Limerick (Ireland); Mark Foley, National Univ. of Ireland, Galway (Ireland). [10680-36]

11:50: Detection limits of diffusion-limited focolaryngography, Yvonne Tiemann, Hendrik Voss, Thomas Hensel, Andreas Müller, Analytik Jena AG (Germany); Christoph für Mikrosensorik und Photovoltaik GmbH (Germany); Martin Hentschel, Indian Institute of Technology Bombay (India). [10680-43]

LOCATION: SALON 3 ............................... WED 13:30 to 15:20

Optical Biosensors
Session Chair: Anna Grazia Magnini, Istituto di Fisica Applicata “Nello Carrara” (Italy)

13:30: Photonic biosensors for Fab’-AFM1 interaction study in real milk (Invited Paper), Tariq Chalyan, Univ. degli Studi di Trento (Italy); Cristina Potrich, Fondazione Bruno Kessler (Italy); Erik Schreuder, LioniX International (Netherlands); Uriel Attali, Idfun Ltd (Israel). [10680-37]

14:00: DNA analysis with UV-LEDs, Christian Möller, CIS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH (Germany); Martin Hentschel, Thomas Hensel, Andreas Müller, Analytik Jena AG (Germany); Christoph Heinze, Olaf Brodersen, Thomas Ortlepp, CIS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH (Germany). [10680-40]

14:20: An imprinted polymer-based guided mode resonance grating sensor, Marie-Aline Mattelin, Jeroen Missinne, Geert Van Steenberge, Ctr. for Microsystems Technology (Belgium). [10680-41]

14:40: SNORW biosensor for measuring glucose level in blood samples, Vishnu Priye, Ritu Raj Singh, Soumya Kumari, Indian Institute of Technology (Indian School of Mines), Dhanbad (India). [10680-42]

15:00: Analysis of phase error and cross talk for a multimode interference-based multichannel biosensor, Moisí Xoxhuí, Univ. Politecnik i Tiranes (Albania); Alma Dudua, Aurel Ymeti, Naonalmolyna B.V. (Netherlands). [10680-43]

LOCATION: SALON 3 ............................... WED 15:20 to 17:10

Optical Sensors for Environmental Applications
Session Chair: Francesco Chiavaioli, of CNR-IFAC (Italy)

15:50: Measurement of the main compounds present in the diesel particulate matter exhaust emissions generated from the real diesel combustion engine passenger vehicles (Invited Paper), Richard Viskup, Werner Baumgartner, Johannes Kepler Univ. Linz (Austria). [10680-44]

16:10: Cost-effective optical fiber gas leakage detector around buried pipelines, Damien Kinet, Marc Wulpart, Univ. de Mons (Belgium); Michel Regentin, Air Liquide Benelux Industries (Belgium); Christophe Caucheteur, Technical Univ. of Ostrava (Czech Republic). [10680-46]

16:30: Fiber optic surface plasma resonance-based arsenic sensor using FeO₃ at SnO₂ core-shell nanostructure, Banshi D. Gupta, Nanjing Univ. of Science and Technology (China). [10680-48]

16:50: Conducting polymer-based optical sensor for heavy metal detection in drinking water, Sutapa Chandra, Soumyo Mukherji, Indian Institute of Technology Bombay (India). [10680-47]

WEDNESDAY POSTER SESSION

LOCATION: HALL RHIN ............................. WED 17:45 to 19:30

Conference attendees are invited to attend the Photonics Europe poster session on Wednesday 17:45 to 19:30. Posters will be on display after 10.00 Wednesday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions and network with colleagues in your field. Authors of selected papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Silicon impurities in AIAGs/GaAs heterointerface and registration efficiency of quantum well infrared photodetectors, Vasily I. Lebidziak, Alena A. Shalaiyeva, B.I. Stepanov Institute of Physics (Belarus). [10680-10]

Influence of different light conditions on activation of GaAs photocathodes, Yijun Zhang, Zhijing Zhang, Cheng Feng, Nanjing Univ. of Science and Technology (China); Xiaohui Wang, Univ. of Electronic Science and Technology of China (China); Chengwei Fang, Qinxian Dai, Yunshef Qian, Nanjing Univ. of Science and Technology (China). [10680-11]

Hexagonal based low-symmetry large-pitch fibers for Yb-doped lasers, Vladimir Demidov, Vladimir Ananyev, Alexandra Matrosova, Peter Zlobin, S.I. Vavilov State Optical Institute (Russian Federation); Stanislav Leonov, Bauman Moscow State Technical Univ. (Russian Federation). [10681-28]

Accurate estimation of mercury level concentration in water using smartphone, Nabaddwee Chamuah, Iftak Hussain, Giganta Hatiborah, Utpal Bora, Trishna Das, Pabitra Nath, Tepuz Univ. (India). [10680-60]

Sensing of liquid analytes via the phase shift induced by surface plasma resonance, Roman Sokolowski, Dalibor Cipar, Petr Hubník, VS-B-Technical Univ. of Ostrava (Czech Republic). [10680-62]


Sensing capabilities of higher order cladding modes, Andreas Ioannou, Univ. de Mons (Belgium); Antreas Theodosiou, Kyriacos Kalli, Cyprus Univ. of Technology (Cyprus); Christophe Caucheteur, Univ. de Mons (Belgium). [10680-64]

An efficient and selective sensing of creatinine based on fiber optic SPR technique exploiting the advantages of molecular imprinting technique, Sonika Sharma, Banshi D. Gupta, Indian Institute of Technology Delhi (India). [10680-65]

Dual-wavelength one-directional multimode fiber interferometer with impact localization ability, Ivan Chapalo, Alexander A. Petrov, Oleg Kotov, Saint-Petersburg State Polytechnical Univ. (Russian Federation). [10680-67]

Requirements for surface plasmon resonance excitation in air with slightly tilted fiber Bragg gratings, Álvaro González-Vila, Médecir Loeyz, Andreas Ioannou, Christophe Caucheteur, Univ. de Mons (Belgium). [10680-68]

Polydimethylsiloxane Fabry-Perot interferometer and its sensing application, Daniel Káčik, Ivan Martínček, Univ. of Zlín (Czech Republic). [10680-69]

Optomechanical frequency analyzer using polymeric optical resonators, Amir R. Ali, Southern Methodist Univ. (United States) and The German Univ. in Cairo (Egypt); Haidi H. Badawi, The German Univ. in Cairo (Egypt). [10680-70]

Fabrication techniques for micro-optical hollow resonator used in high-bandwidth sensing applications, Amir R. Ali, Southern Methodist Univ. (United States) and The German Univ. in Cairo (Egypt); Ahmad M. Monier, The German Univ. in Cairo (Egypt). [10680-71]

Surface roughness measurement using a single white light interferogram, Yunshef Qian, Chunkan Tao, Yujing Wu, Weiyl Wang, Nanjing Univ. of Science and Technology (China). [10680-72]

Optical fiber tip with deep seated negative axicon as plasmonic sensor for monitoring protein binding, Rashmi Achla, Kaushal Vairagi, Aditi Chopra, Central Scientific Instruments Organisation (India); Priyanka Karmari, Postgraduate Research & Research, Chandigarh (India); Sudipta Sarkar, Samir Mondal, Central Scientific Instruments Organisation (India). [10680-73]

Design of experiments for the magnetorheological dielectric bio-optical sensors, Amir R. Ali, Southern Methodist Univ. (United States) and The German Univ. in Cairo (Egypt); Karim M. Elewa, The German Univ. in Cairo (Egypt); Lamia A. Shihata, The German Univ. in Cairo (Egypt) and Ain Shams Univ. (Egypt). [10680-74]

Design of a portable spectrometer using optoelectronics and electronics design, Carlos Esteban Cabrera Reyes, Roberto Gómez, Guillermo García Torales, Univ. de Guadalajara (Mexico). [10680-75]

Transformation of a harmonized random process by spectral devices that perform instantaneous spectrum analysis, Vasily I. Kazakov, Oleg Moskalietz, Saint-Petersburg State Univ. of Aerospace Instrumentation (Russian Federation). [10680-76]
**CONFERENCE 10680**

**SESSION 12**

**LOCATION: SALON 3 ........................................ THU 13:50 TO 14:50**

**Optical Fibre-based Sensors II**

Session Chair: Francis Berghmans, Vrije Univ. Brussel (Belgium)


14:10: **Optimization of a temperature and pressure fibre optic sensor based on a deformable micromirror**, Nacer-Eddine Demagh, Assia Guessoum, Univ. Ferhat Abbas Sétif 1 (Algeria); Abdelhak Guermat, Univ. Ferhat Abbas Sétif 1 (Algeria) and Ctr. de Développement des Technologies Avancées (Algeria); Amina Nezzar, Nadjiba Boulaiche, Zaied Bouhafs Bouhafs, Univ. Ferhat Abbas Sétif 1 (Algeria) .................. [10680-53]

14:30: **All-fibre wave front sensor**, Kerrianne Harrington, Stephanos Yerolatsitis, Tim A. Birks, Univ. of Bath (United Kingdom). .......................... [10680-54]

Coffee Break .................................. Thu 14:50 to 15:20

**SESSION 13**

**LOCATION: SALON 3 ........................................ THU 15:20 TO 17:00**

**Interferometric and Resonance-based Sensors**

Session Chair: Francis Berghmans, Vrije Univ. Brussel (Belgium)


16:00: **Increase of the free-spectral range by composing a structure from wavelength tunable wedged interferometers**, Elena Stoykova, Institute of Optical Materials and Technologies (Bulgaria); Marin Nenchev, Margarita A. Deneva, Technical Univ. of Sofia (Bulgaria) .................. [10680-57]

16:20: **Azimuth rate sensing based on polymeric micro-optical cavity**, Amir R. Ali, Southern Methodist Univ. (United States) and The German Univ. in Cairo (Egypt). .......................... [10680-58]

Micro-Structured and Specialty Optical Fibres

Conference Chairs: Kyriacos Kalli, Cyprus Univ. of Technology (Cyprus); Alexis Mendez, MCH Engineering LLC (United States); Christian-Alexander Bunge, Hochschule für Telekommunikation Leipzig (Germany)

Programme Committee: Jean-Luc Adam, Univ. de Rennes 1 (France); Jean-Louis Auguste, XLIM Institut de Recherche (France); Ole Bang, Technical Univ. of Denmark (Denmark); Neil G. R. Broderick, The Univ. of Auckland (New Zealand); Benoit Cadier, iX Fiber SAS (France); Adrian L. Carter, Nofenn (United States); Liang Dong, Ctr. for Optical Materials Science + Engineering Technologies (United States); Henry H. Du, Stevens Institute of Technology (United States); Sebastien Fevrier, XLIM Institut de Recherche (France); Jiri Kanka, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); Karl-Friedrich Klein, Technische Hochschule Mittelhessen (Germany); Jonathan C. Knight, Univ. of Bath (United Kingdom); Michael Komodromos, Frederick Univ. (Cyprus); Walter Margulis, Acero Swedish ICT AS (Sweden); Chengbo Mou, Shanghai Univ. (China); Pavel Peterka, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); Saeed Rehman, Fibercore Ltd. (United Kingdom); Valerio Romano, Bern Univ. of Applied Sciences (Switzerland); Kunimasu Saitoh, Hokkaido Univ. (Japan); Kay Schuster, Institut für Photonische Technologien e.V. (Germany); Sergey V. Semyonov, Fiber Optics Research Ctr. (Russian Federation); Waclaw Urbanczyk, Wrocław Univ. of Technology (Poland); David J. Webb, Aston Univ. (United Kingdom); Alexei M. Zheltikov, Lomonosov Moscow State Univ. (Russian Federation); Hwa-Yaw Tam, The Hong Kong Polytechnic Univ. (Hong Kong, China)

WEDNESDAY 25 APRIL

OPENING REMARKS
LOCATION: SALON 9 ........................................... 8:25 TO 8:30

SESSION 1
LOCATION: SALON 9 ........................................ WED 8:30 TO 10:20
Transmission and Modal Propagation
Phenomena in Specialty Fibres
8:30: All solid nitroaniline-silica photonic bandgap fiber (Invited Paper), Georgios Viokakis, Stavros Pissadakis, Foundation for Research and Technological (Boggy-Hellas) (Greece) ........................................... [10681-4]
9:00: Transmission of few-mode fibers at 355 nm using pulsed Nd-YAG laser, Karl-Friedrich Klein, Technische Hochschule Mittelhessen (Germany); Philipp Raithel, TransMIT GmbH (Germany); Georg Hilirichs, Hochschule Merseburg (Germany). ................................. [10681-2]
9:20: Hollow-core antiresonant fibers optimized for operation in the spectral range 0.6-2.5 µm, Vladimir Demidov, Alexander Khokhlov, S.J. Vavilov State Optical Institute (Russian Federation); Stanislav Leonov, Vladislav Tigaev, Elizaveta Yelistratova, Bauman Moscow State Technical Univ. (Russian Federation); Peter Agruzov, Ioffe Institute (Russian Federation); Alexander Komarow, Vladislav Ananyev, Eghise Ter-Nersesyants, Peter Zlobin, S.J. Vavilov State Optical Institute (Russian Federation); Nikolay Nikonovor, ITMO Univ. (Russian Federation). ................................. [10681-3]
9:40: Slope efficiency of Yb doped fibers produced by the granulated silica method, Ali F. El Sayed, Univ. Bern (Switzerland) ............. [10681-49]
10:00: Frequency-interleaved SDM transmission over multicore fiber for next-generation short-reach optical interconnect systems, Jitendra Kumar Mishra, Birla Institute of Technology Mesra (India); Vishnu Priye, Indian Institute of Technology (Indian School of Mines), Dhanbad (India); B.M.A. Rahman, City, Univ. of London (United Kingdom) .................. [10681-5]
Coffee Break ........................................... Wed 10:20 to 10:50

SESSION 2
LOCATION: SALON 9 ........................................ WED 10:30 TO 12:20
Physical and Bio Sensing I
10:50: Innovative 2D-nanomaterial integrated optical fibre sensors for biochemical applications (Invited Paper), Xianfeng Chen, Bangor Univ. (United Kingdom); Miguel V. Andres, Univ. de Valencia (Spain); Lin Zhang, Aston Univ. (United Kingdom) ........................................... [10681-6]
11:20: LPG inscription in mPOF for optical sensing, Rui Min, Univ. Politécnica de Valencia (Spain); Carlos Marques, Instituto de Telecomunicaciones (Portugal) and Univ. de Aveiro (Portugal); Beatriz Ortega, Univ. Politécnica de Valencia (Spain); Ole Bang, DTU Fotonik (Denmark). ................................. [10681-7]
11:40: L-band CYTOP Bragg gratings for ultrasound sensing, Christian F. B. Broadway, Univ. de Mons (Belgium); Kyriacos Kalli, Antreas Theodosiou, Cyprus Univ. of Technology (Cyprus); Michal Zuber, Kate Sugden, Aston Institute of Photonic Technologies, Aston Univ. (United Kingdom); Patrice Megret, Christophe Caucheteur, Univ. de Mons (Belgium) ................................. [10681-8]
12:00: Pressure dependence of fs-laser inscribed FBGs in fluorinated polymer optical fibre, Ryo Ishikawa, Hee-Young Lee, Tokyo Institute of Technology (Japan); Antreas Theodosiou, Amedee Lacraz, Kyriacos Kalli, Cyprus Univ. of Technology (Cyprus); Mizuno Yosuke, Kentaro Nakamura, Tokyo Institute of Technology (Japan) .................. [10681-47]
Lunch/Exhibition Break ........................................... Wed 12:20 to 13:30

SESSION 3
LOCATION: SALON 9 ........................................ WED 13:30 TO 15:20
Processing and Modifying Fibres
13:30: Discovery of parabolic SNAP microresonators produced in fibre tapering (Invited Paper), Gabriella Gardosi, Sajid Zaki, Dasheel L. P. Vitollo, Kirit V. Tokmakov, Aston Institute of Photonic Technologies, Aston Univ. (United Kingdom); Michael Brodsky, U.S. Army Research Lab. (United States); Misha Sumetsky, Aston Institute of Photonic Technologies, Aston Univ. (United Kingdom) ................................. [10681-10]
14:00: Damage threshold studies on optical fibers and end-capped fibers with random antireflection (RAR) nanostructures, Devinder Saini, Ron C. Mehl, Fiberguide Industries, Inc. (United States) ................................. [10681-11]
14:20: Femtosecond 3D laser lithography of photoinitiator-free optically resilient microoptics on the tips of optical fibers, Linas Jonušauskas, Titas Tikūnas, Darius Galevicius, Gedvinius Nemickas, Vilnius Univ. (Lithuania); Femtika (Lithuania) ................................. [10681-12]
14:40: Optical fibre end microforming by chemical etching for direct photonic nanoJet material laser processing, Grégoire Chabrol, ECAM Strasbourg-Europe (France) ................................. [10681-13]
15:00: Surface nanoscale axial photonic structures introduced by bending of optical fibers, Daria Bochove, Ilya Vatnik, Novosibirsk State Univ. (Russian Federation); Misha Sumetsky, Aston Institute of Photonic Technologies, Aston Univ. (United Kingdom) ................................. [10681-14]
Coffee Break ........................................... Wed 15:20 to 15:50
CONFERENCE 10681

SESSION 4

LOCATION: SALON 9 ................................. WED 15:30 TO 17:50

Novel Optical Components and Devices


16:10: The effect of coupling between core and cladding modes in twisted microstructured optical fibers, Mariusz Napokowski, Wacław Urbaniczky, Wrocław Univ. of Science and Technology (Poland) .......................................................... [10681-16]

16:30: Towards ultrafast subnanoojoule solitonic nonlinear directional coupler based on soft glass dual-core photonic crystal fibers, Ignác Bugár, Institute of Electronic Materials Technology (Poland); Lubomír Ľubíňika, Comenius Univ. (Slovakia); Išigas Astrauskas, Audrius Pugžlys, Andrius Batašius, Technische Uni. Wien (Austria); Dariusz Pysz, Institute of Electronic Materials Technology (Poland); František Uherek, International LSR Ctr. (Slovakia); Pavol Stajniča, Bundesanstalt für Materialforschung und -prüfung (Germany) .......................................................... [10681-17]

16:50: Structural evolution of fused fiber-couplers: numerical simulations and experimental study, Avnail Spizzichino, Nuclear Research Ctr. Negev-Soreq (Israel); Sharone Goldring, Soreq Nuclear Research Ctr. (Israel); Yuli Feldman, Ben–Gurion Univ. of the Negev (Israel) .................................................. [10681-18]

17:10: Diameter and tensile strain measurements of optical nanofibers using Brillouin reflectometry, Adrien Godet, Ctr. National de la Recherche Scientifique (France) and Abfedo–ST (France); Abuedo–ST (France); Vincent Péchoux, Ctr. National de la Recherche Scientifique (France) and FEMTO–ST (France); Sylvie Lebrun, Lab. Charles Fabry, Institut d’Optique Graduate School (France) and Univ. Paris-Sud (France) and Ctr. National de la Recherche Scientifique (France); Gilles Pauliat, Lab. Charles Fabry (France); Jean–Charles Beugnot, Ctr. National de la Recherche Scientifique (France) and FEMTO–ST (France); Qin Peng, Ctr. National de la Recherche Scientifique (France) and FEMTO–ST (France); and Bourgogne Franche–Comté (France); Thibaut Sylvestre, Ctr. National de la Recherche Scientifique (France) and FEMTO–ST (France) .......................................................... [10681-19]

17:30: PT-symmetric chirped Bragg structures, Pavel Shestakov, Vladimir F. Marschenko, Anatoliy V. Kozar, M.V. Lomonosov Moscow State Univ State (Russian Federation) .................................................. [10681-20]

WEDNESDAY POSTER SESSION

LOCATION: HALL RHIN .................................. WED 17:45 TO 19:30

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THURSDAY 26 APRIL

THURSDAY HOT TOPICS

LOCATION: SCHWEIZER AUDITORIUM ............ THU 9:00 TO 10:35

Hot Topics III

9.00 to 9.05: Introduction
Harald Giessen, Univ. of Stuttgart, Germany

9.05 to 9.50: From extreme nonlinear optics to ultrafast atomic physics
Anne L’Huillier, Lund Univ., Sweden

9.50 to 10:35: Quantum computations and quantum simulations with trapped ions
Rainer Blatt, Institute for Experimental Physics, Univ. of Innsbruck, Austria

For additional details, please see page 8.

Coffee Break ............................................. Thu 10:35 to 11:00

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SESSION 5
LOCATION: SALON 9  THU 11:00 TO 12:30

Physical and Bio Sensing II
11:00: Fiber grating assisted surface plasmon resonance for biochemical and electrochemical sensing (Invited Paper), Tuan Guo, Jinan Univ. (China).  ................................. [10681-21]
11:30: Chalcogenide sensing elements for the mid-IR analysis of liquids: design on the base of electromagnetic theory of optical fibers, Svetlana V. Vorsakova, Elena A. Romanova, Andrei Rozhnov, Saratov State Univ. (Russian Federation); Aleksandr P. Vel'muzhov, Tatjana Kotereva, Maksim Sukhanov, Vladimir Shiryayev, G. G. Devyatych Institute of Chemistry of High-Purity Substances of the Russian Academy of Sciences (Russian Federation)  .......................... [10681-22]
11:50: Solution doping of commercial plastic optical fibers, Pavol Stajanča, Ivgenii Topolniak, Samuel Pöttschke, Katerina Krebber, Bundesanstalt für Materialforschung und -prüfung (Germany)  . . . . . [10681-23]
12:10: Weaved distributed fiber optic sensors for smart textile fabrics, ropes, and cables, Edgar Mendoza, John Prhapska, Yan Estenkin, Ted Andreas, Redondo Optics, Inc. (United States); Kyriacos Kalli, Antreas Theodosiou, Cyprus Univ. of Technology (Cyprus); John Bazin, Airborne Systems North America (United States)  .......................... [10681-24]
Lunch Break  ...................................... Thu 12:30 to 13:40

SESSION 6
LOCATION: SALON 9  THU 13:40 TO 15:20

Novel Fibre Fabrication and Design
13:40: Resorbable phosphate glass optical and hollow fibers for biomedicine (Invited Paper), Daniel Milanes, Politecnico di Torino (Italy) and CNR-Istituto di Fotonica e Nanotecnologie (Italy); Edoard Ceci-Ginistrelli, Diego Pugliese, Politecnico di Torino (Italy); Nadia G. Boett, Istituto Superiore Mario Boella (Italy); Cecilia Bertolino, Univ. degli Studi di Torino (Italy); Mauro Tortello, Politecnico di Torino (Italy); Vincenzo M. Sglovo, Univ. degli Studi di Trento (Italy); Nadia Barbero, Sonja Visentini, Univ. degli Studi di Torino (Italy); Duccio Gallicchi-Nottiani, Politecnico di Torino (Italy); Claudia Barolo, Univ. degli Studi di Torino (Italy); Davide Janner, Politecnico di Torino (Italy)  ................................. [10681-25]
14:10: Optofluidic microstructured fibers: a novel base for new nonlinear photonics and single nanoobjects detection (Invited Paper), Markus A. Schmidt, Leibniz Institute of Photonic Technology e.V. (Germany).  ................................. [10681-48]
14:40: Intermediate-Tg glasses for multimaterial fibers, Sylvain Danto, Clemson Univ. (United States); Clément Struyfnski, Ctr. National de la Recherche Scientifique (France); Frédéric Désèveday, Univ. de Bourgogne Franche-Comté (France); Yannick Petit, Alain Abo Khali, Univ. de Bordeaux (France); Marc Dussauze, Ctr. National de la Recherche Scientifique (France); Jean-Charles Jules, Gregory Gardet, Frédéric Smektala, Univ. de Bourgogne Franche-Comté (France); Lionel Canioni, Univ. de Bordeaux (France); Thierry Cardinal, Ctr. National de la Recherche Scientifique (France)  .......................... [10681-26]
15:00: Noncircular side-emitting fibres for directed lighting, Christian-Alexander Bunge, Hochschule für Telekommunikation Leipzig (Germany); Benjamin Mohr, Markus Beckers, Thomas Vad, Thomas Gries, RWTH Aachen Univ. (Germany)  ................................. [10681-29]
Coffee Break  .................................. Thu 15:20 to 15:40

SESSION 7
LOCATION: SALON 9  THU 15:40 TO 17:10

Fibre Lasers and Supercontinuum Sources
15:40: Supercontinuum generation in a suspended core heavy metal oxide glass photonic crystal fiber (Invited Paper), Thibaut Sylvestre, Ctr. National de la Recherche Scientifique (France) and FEMTO-ST (France); Amar Nath Ghosh, Ctr. National de la Recherche Scientifique (France) and FEMTO-ST (France); Mariusz Klimczak, Ryszard Buczynski, Institute of Electronic Materials Technology (Poland); John Dudley, Ctr. National de la Recherche Scientifique (France) and FEMTO-ST (France)  .......................... [10681-30]
16:10: Numerical investigation on W-type index chalcogenide fiber based MIR supercontinuum generation, Mustafa A. Khamis, Ruben Sevilla, Karin Ennsr, Swansea Univ. (United Kingdom)  .......................... [10681-31]
16:30: Nanostructured core single mode phosphate fiber laser with high slope efficiency, Marcin Fraczyz, Ryszard Stepien, Adam Filipkowski, Dariusz Pysz, Institute of Electronic Materials Technology (Poland); Ryszard Buczynski, Institute of Electronic Materials Technology (Poland) and Univ. of Warsaw (Poland)  .......................... [10681-32]
16:50: Multicore photonic crystal fibers for high-power laser application, Yong Wang, Shandong Academy of Sciences, Qilu Univ. (China); Yue-e Chen, Yanshan Univ. (China); Dewang Yang, Bingtiao Zhang, Qilu Univ. of Technology (China)  .......................... [10681-33]
Conference Chairs: Krassimir Panajotov, Vrije Univ. Brussel (Belgium); Marc Sciamanna, CentraleSupélec (France); Rainer Michalzik, Univ. Ulm (Germany)

Programme Committee: Erwin A.J.M. Bente, Technische Univ. Eindhoven (Netherlands); Dieter Bimberg, Technische Univ. Berlin (Germany); Weng W. Chow, Sandia National Labs. (United States); Kent D. Choquette, Univ. of Illinois at Urbana-Champaign (United States); Tomasz G. Czyszczanowski, Lodz Univ. of Technology (Poland); Gadi Eisenstein, Technion-Israel Institute of Technology (Israel); Wolfgang E. Elsäßer, Technische Univ. Darmstadt (Germany); Hitoshi Kawaguchi, Nara Institute of Science and Technology (Japan); Fumio Koyama, Tokyo Institute of Technology (Japan); Michael Kneissl, Technische Univ. Berlin (Germany); Anders G. Larson, Chalmers Univ. of Technology (Sweden); Fan-Yi Lin, National Tsing Hua Univ. (Taiwan); Cristina Masoller, Univ. Politécnica de Catalunya (Spain); Luke J. Mawst, Univ. of Wisconsin-Madison (United States); Jesper Mørk, Technical Univ. of Denmark (Denmark); Johann Peter Reithmaier, Univ. Kassel (Germany); Carlo Sirtori, Univ. Paris 7-Denis Diderot (France); Peter M. Smowton, Cardiff Univ. (United Kingdom); Anne C. Tropper, Univ. of Southampton (United Kingdom)

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM .......................... MON 9:00 TO 11:00
Hot Topics Session I
9:00 to 9:15  Opening Remarks and Awards Presentation
9:15 to 9:25  Welcome
Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30  Introduction to Hot Topics
Thierry Georges, Oxiuss, France
9:30 to 10:15  From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d'Optique, France
10:15 to 11:00  Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom
For additional details please visit page 6.

SESSION 1
LOCATION: SALON 4 .......................... MON 13:20 TO 15:30
VCSLs
Session Chair: Rainer Michalzik, Univ. Ulm (Germany)
13:20  High-bandwidth simplicity VCSLs for optical communication
James A. Lott, Nasibeh Haghighi, Technische Univ. Berlin (Germany); Martin Zorn, JENOPTIK Diode Lab GmbH; Gunter Larisch, Ricardo Rosales, Technische Univ. Berlin (Germany) [10682-1]
13:50  GainN VCSLs with semiconductor-based DBRs (Invited Paper)
Tetsuya Takeuchi, Satoshi Kamiyama, Motoki Iwaya, Meijo Univ. (Japan); Isamu Akasaki, Meijo Univ. (Japan) and Nagoya Univ. (Japan) [10682-2]
14:20  Optical wireless power transmission using VCSLs (Invited Paper)
Tomoyuki Miyamoto, Tokyo Institute of Technology (Japan) [10682-3]
14:50  Spin lasers for optical data communication
Markus Lindemann, Ruhr-Univers. Bochum (Germany); Rainer Michalzik, Univ. Ulm (Germany); Tobias Pusch, Univ. Ulm (Germany); Nils C. Gerhardt, Ruhr-Univers. Bochum (Germany); Martin R. Hofmann, Ruhr-Univers. Bochum (Germany) [10682-4]
15:10  Design of an electro-absorption modulator for integration onto a VCSEL
Ludivic Marigo-Lombard, Lab. D’Analyse et d'Architecture des Systèmes (France) and Vrije Univ. Brussels (Belgium) and Ctr. de Nanoscience et de Nanotechnologies (France); Hadrien Vergnet, Univ. Côte d’Azur (France) [10682-5]
Coffee Break .......................... Mon 15:30 to 16:00

SESSION 2
LOCATION: SALON 4 .......................... MON 16:00 TO 17:20
Novel Concepts I
Session Chair: Michael Jetter, Institut für Halbleiteroptik und Funktionelle Grenzflächen (Germany)
16:00  Transparent behaviors in parity-time-symmetric lasers (Invited Paper)
Mercedes KhajaviKhak, Milad GholiPur Vazim, William Hayenga, Enrique Sanchez Cristobal, Jinhan Ren, Midya Parto, Mohammad Hokamabd, Demetrios Christodoulides, OREL, The College of Optics and Photonics, Univ. of Central Florida (United States) [10682-6]
16:30  1.3 µm transistor lasers with AlGaNAs buried hetero-regrowth structure (Invited Paper)
Nobuhiko Nishiyama, Tokyo Institute of Technology (Japan) [10682-7]
17:00  Toward single frequency semiconductor laser exploiting the concept of parity-time symmetry
Vincent Brac de la Perriere, Ctr. de Nanosciences et de Nanotechnologies (France); Henri Benisty, Institut d’Optique Graduate School (France); Abderrahim Ramdane, Ctr. de Nanosciences et de Nanotechnologies (France); Anatole Lupu, Centre de Nanosciences et de Nanotechnologies (France) [10682-8]

MONDAY POSTER SESSION
LOCATION: HALL RHIN .......................... MON 17:30 TO 19:00
Conference attendees are invited to attend the Photonics Europe poster session on Monday 17.30 to 19.00. Posters will be on display after 10.00 Monday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.
Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Advanced research optics in LAMSEBP
Raoil Thepi Siewe, Alain F. Talla, Paul Woofa, Unio de Yaounde 1 (Cameroon) [10682-54]
Study of a single emitter laser diode: PSpice model and characterization system
Ramon Borras, MONOCROM S.L. (Spain); Joaquín del Rio, Univ. Politécnica de Catalunya (Spain) [10682-55]
Transient polarization statistics at the turn-on of a microscale VCSEL
Hadrien Vergnet, Univ. Côte d’Azur (France) and École Normale Supérieure (France); Tao Wang, Univ. Côte d’Azur (France) and Hunan University of Science and Technology (China); Gian Piero Ficunzi, Istituto dei Sistemi Complessi (Italy); Gian Luca Lippi, Univ. Côte d’Azur (France) [10682-56]
X-band optical injection-locked VCSEL-based optoelectronic oscillators
Juan F. Coronel, Institut Supérieur de l’Aéronautique et de l’Espace (France); Tatsuya Takeuchi, Satoshi Kamiyama, Motoki Iwaya, Meijo Univ. (Japan) and Nagoya Univ. (Japan) [10682-4]
Numerical study of the time-delay signature in chaos optical injection system with phase-conjugate feedback
Khaled Gasmi, Taofeek O. Adigun, King Fahd Univ. of Petroleum & Minerals (Saudi Arabia) [10682-59]
Design and characterization of a laser integrated with long on-chip optical feedback usable as compact random number generator.
Guy Verschaffelt, Mulhammad Khoder, Guy Van der Sande, Vrije Univ. Brussels (Belgium). .................................................. [10682-60]

Suppressed time delay signature in chaotic nanolasers with hybrid feedback.
Amir Elsonbaty, Mansoura Univ. (Egypt); Salem F. Hegazy, Cairo Univ. (Egypt); Salah S. A. Obayya, Zewail City of Science and Technology (Egypt). .................................................. [10682-61]

Equivalent circuit modeling of the dynamic operation of ultrafast speed multimode VCSELs.
Wissam Hamad, Technische Univ. Berlin (Germany); Elio Nakhte, Olivier Daou, Marwan Bou Sanayeh, Mustapha Hamad, Notre Dame Univ., Louaize (Lebanon); Werner Hofmann, Technische Univ. Berlin (Germany). .................................................. [10682-62]

IFVD-based large interleaving selectivity window process for high power laser diodes.
Seval Arslan, Bilkent Univ. (Turkey); Seval Sahin, Anadolu Univ. (Turkey); Abdullatif Demir, Bilkent Univ. (Turkey); Altiya Aydinli, Uludag Univ. (Turkey). (Turkey). .................................................. [10682-63]

De-embedding device parasitics of ultrafast high speed VCSELs.
Wissam Hamad, Technische Univ. Berlin (Germany); Nataly Dalal, Serena Bou Nassar, Marwan Bou Sanayeh, Mustapha Hamad, Notre Dame Univ., Louaize (Lebanon); Werner Hofmann, Technische Univ. Berlin (Germany). .................................................. [10682-64]

Numerical computation of resonance modes and of constant-flux modes in VCSELs.
Theresa Hoehe, Zuse Institute Berlin (Germany); Lin Zschiedrich, JCMwave GmbH (Germany); Nasibeh Haghighi, James A. Lott, Technische Univ. Darmstadt (Germany); Dominik Auth, Christoph Weber, Technische Univ. Darmstadt (Germany); Martin Wehrspohn, JCMwave GmbH (Germany). .................................................. [10682-65]

Modeling of a semiconductor laser coupled to an external fiber optic ring resonator.
Dmitry A. Korobko, Igor Zolotovskiy, Ulyanov State Univ. (Russia); Kirssimir Panajotov, Vrije Univ. Brussels (Belgium); Vasily Spirin, Ctr. de Investigacion Cientifica y de Educacion Superior de Ensenada B.C. (Mexico); Andrea A. Foti, Politecnico di Torino (Italy). .................................................. [10682-66]

Canard explosion in the optically injected semiconductor laser.
Michael Dilliane, Univ. College Cork (Ireland) and Tyndall National Institute (Ireland); David Goulding, Cork Institute of Technology (Ireland) and Tyndall National Inst. (Ireland); Tao Staunton, College Cork (Ireland) and Tyndall National Institute (Ireland). .................................................. [10682-67]

InP-based high speed electro-absorption modulator.
Hua Yang, Tyndall National Institute (Ireland). .................................................. [10682-68]

Numerical modeling of mode-locking stability and repetition rate transitions in multimode semiconductor lasers.
Martin Birkhahn, Univ. Bremen (Germany); Kerstin Endt, DLR (Germany); Julian Javoulay, Univ. de les Illes Balears (Spain); Oleg Nikiforov, Christoph Weber, Technische Univ. Berlin (Germany). .................................................. [10682-69]

Timing stability and repetition rate frequency tuning analysis of a passively mode-locked multiquantum well semiconductor laser subject to dual cavity optical self-feedback.
Dominik Auth, Christoph Weber, Technische Univ. Berlin (Germany); Andreas Kleh, Andrea Krieger, Ferdinand-Braun-Institut (Germany); Stefan Breuer, Technische Univ. Berlin (Germany). .................................................. [10682-70]

Lasing and carrier confinement in high Sn content GeSn-based heterostructures.
Mathieu Bertrand, CEA-LETI (France) and Univ. Grenoble Alpes (France); Quang Minh Thai, Nicolas Pau, CEA-INAC (France) and Univ. Grenoble Alpes (France); Joris Aubin, Jérémi Chrétién, CEA-LETI (France) and Univ. Grenoble Alpes (France); Francesco Armand Pilon, Hans Sigg, Paul Scherrer Instutit (Switzerland); Alesxei Chelnokov, Jean-Michel Hartmann, CEA-LETI (France) and Univ. Grenoble Alpes (France). .................................................. [10682-71]

Refractory time, multipulse excitability and resonant feature for a semiconductor laser with retroaction.
Axel Dolcemascolo, Univ. de Nice Sophia Antipolis (France) and Ctr. National de la Recherche Scientifique (France); Romain Veltz, INRIA Sophia Antipolis - Méditerranée (France). .................................................. [10682-72]

Optical feedback stabilization of a frequency comb generated by a self-mode-locked quantum dot laser emitting at 1255 nm.
Sebastian Stutz, Dominik Auth, Christoph Weber, Oleg Nikiforov, Technische Univ. Berlin (Germany); Luke F. Lester, Virginia Polytechnic Institute and State Univ. (United States); Stefan Walther, Stefan Breuer, Technische Univ. Darmstadt (Germany). .................................................. [10682-73]

RF line width and integrated RIN study of a single-section quantum dot semiconductor laser.
Paulo Barbon, Maurizio Crisanti, Politecnico di Torino (Italy); Cristiano Zonca, Politecnico di Torino (Italy); Luke F. Lester, Virginia Polytechnic Institute and State Univ. (United States); Maria Antonietta Ciofi degli Atti, Politecnico di Torino (Italy); Stefan Breuer, Technische Univ. Darmstadt (Germany). .................................................. [10682-74]

Nonlinear characteristics of semiconductor laser subject to optical incoherent feedback.
Ming-Ju Wu, Yu-Shan Juan, Shin-Chuan Chen, Yu-Peng Hong, Yuan Ze Univ. (Taiwan). .................................................. [10682-75]

Dynamical characteristics of semiconductor laser under both optical and electonic feedback.
Liu Xiaoping, Chuan Huang, Tianyi Liu, Yu-Ze Ze Univ. (Taiwan). .................................................. [10682-76]

Theoretical study of mode-locked lasers with nonlinear loop mirrors.
Anton V. Kovalev, Evgeny A. Viktorov, ITMO Univ. (Russian Federation); Andre Vladimirov, Wroclaw University of Science and Technology Analysis and Stochastik (Germany); Natalia Rebрова, Cork Institute of Technology (Ireland); Guillaume Huyet, Ctr. National de la Recherche Scientifique, Institut de Physique de Nice (France) and ITMO Univ. (Russian Federation). .................................................. [10682-77]

Shinikov-kike chaos in two nonlinear coupled photonic nanocavities.
Andras Giraldo, Bernt K. Redlich, Benjamin Lingnau, Xavier Parera, Kathy Lüdge, Technische Univ. Berlin (Germany); Stefan Breuer, Technische Univ. Darmstadt (Germany); Luke F. Lester, Virginia Polytechnic Institute and State Univ. (United States); Jérémie Chrétien, CEA-LETI (France) and Univ. Grenoble Alpes (France); Jean A. Levenson, Ctr. de Nanosciences et de Nanotechnologies (France); Ursula Keller, ETH Zurich (Switzerland). .................................................. [10682-78]

Development of InP-based multichannel transmitters for application in WDM access systems. Aleksandra Pańskowska, Stanisław Stępolski, Krysztof Andrzej, Andrzej Kaźmierczak, Ryszard Przarodowicz, Warsaw Univ. of Technology (Poland); Marcin Tomkiewicz, FCA Sp. z o.o. (Poland). .................................................. [10682-79]

Experimental investigation of degradation mechanisms of GaN-based diode lasers.
Oleg Nikiforov, Christoph Weber, Technische Univ. Darmstadt (Germany); Steffen Holzinger, Arsenty Kaganskiy, Christoph Weber, Technische Univ. Darmstadt (Germany); Joris Aubin, Jérémie Chrétien, CEA-LETI (France) and Univ. Grenoble Alpes (France); Vincent Reboud, CEA-LETI (France) and Univ. Grenoble Alpes (France); Vincent Calvo, CEA-Scherrer Institut (Switzerland); Alexei Chelnokov, Jean-Michel Hartmann, Grenoble Alpes (France); Joris Aubin, Jérémie Chrétien, CEA-LETI (France) and Univ. Grenoble Alpes (France); Quang Minh Thai, Nicolas Pauc, CEA-INAC (France) and Univ. Grenoble Alpes (France); Mathieu Bertrand, CEA-LETI (France) and Univ. Grenoble Alpes (France). .................................................. [10682-80]

Analysis of waveguide asymmetry, waveguide thickness, and doping for improving efficiency of high power laser diodes at the 1.5 micrometer spectral range.
Eugene A. Avrutin, Univ. of York (United Kingdom); Boris Ryvkin, Univ. of Oulu (Finland) and Ioffe Institute (Russian Federation); Juha Kostamoavaara, Univ. of Oulu (Finland). .................................................. [10682-81]

Facet temperature reduction by separate pumped window in high power laser diodes.
Seval Arslan, Sinan Güngözdu, Abdullatif Demir, Bilkent Univ. (Turkey); Altiya Aydinli, Uludag Univ. (Turkey). .................................................. [10682-82]

300nm focal length optical system design for direct high power laser diodes stack.
Qinggai Mi, Xubao Wang, Rongshi Xiao, Beijing Univ. of Posts and Telecommunications (China). .................................................. [10682-83]

Frequency modulated external cavity laser with photonic crystal resonator and microheater.
Sharon M. Butler, Cork Institute of Technology (Ireland); Andrea P. Ipalcio, Tyndall National Institute (Ireland); Alejandro A. Liles, Univ. of St. Andrews (United Kingdom); Ben O'Shaughnessy, Tyndall National Institute (Ireland); Guillaume Huyet, Institut de Physique de Nice (France); Liam O'Faolain, Stephen P. Hegarty, Tyndall National Institute (Ireland). .................................................. [10682-84]
10:10: Effect of modulation p-doping level on multistate lasing in InAs/InGaAs quantum dot lasers having different external loss,
Vladimir V. Kornev, Artem Saveljev, St. Petersburg Academic Univ. (Russian Federation); Mikhail Maximov, St. Petersburg Academic Univ. (Russian Federation) and Ioffe Institute (Russian Federation) and Saint-Petersburg State Polytechnical Univ. (Russian Federation); Fedor Zubov, St. Petersburg Academic Univ. (Russian Federation); Yuri Shernyakov, Ioffe Institute (Russian Federation) and St. Petersburg Academic Univ. (Russian Federation); Marina Kulagina, Ioffe Institute (Russian Federation); Alexey Zhukov, St. Petersburg Academic Univ. (Russian Federation) and Saint-Petersburg State Polytechnical Univ. (Russian Federation); [10682-13]
Coffee Break. ...................................... Tue 10:30 to 11:00

SESSION 4

LOCATION: SALON 4 .................................. Tue 11:00 to 13:00
Laser Nonlinear Dynamics I
Session Chair: Marc Sciamaana, CentraleSupélec (France)
11:00: Diode laser efficiency revisited: the case of quantum dots (Invited Paper), Peter Blood, Cardiff Univ. (United Kingdom) ........................................... [10682-14]
12:00: Theory of delay-coupled nonidentical quantum cascade lasers, Daan Lenstra, Technische Univ. Eindhoven (Netherlands); Andreas Herdt, Markus Weidmann, Till Mohr, Wolfgang E. Elsässer, Technische Univ. Darmstadt (Germany); [10682-16]
12:30: Experimental investigation of thermal designs of InP-based quantum cascade lasers, Kamir Piersicinska, Dorota Piersicinska, Piotr Gutowski, Grzegorz Sobczak, Kamir Janus, (Invited Paper), Uludag Univ. (Turkey); Carlo Sirtori, Univ. Paris Diderot - Paris 7 (France) ............................................... [10682-17]
12:40: Thermal characterisation of quantum cascade lasers with Fabry Perot modes, Sinan Gundogdu, Hadi Sedaghati Pisheh, Abdullah Demir, Bilkent Univ. (Turkey); Mete Gündöven, Middle East Technical Univ. (Turkey); Attila Aydinli, Uludag Univ. (Turkey); Carlo Sirtori, Univ. Paris Diderot - Paris 7 (France) ............................................... [10682-18]
Lunch/Exhibition Break ............................ Tue 13:00 to 14:20

SESSION 5

LOCATION: SALON 4 .................................. Tue 14:20 to 16:00
Mode-locked Lasers and Frequency Combs
Session Chair: Mariangela Gioannini, Politecnico di Torino (Italy)
14:20: Optical dual-comb generation and molecular spectroscopy using only one unstimulated semiconductor laser (Invited Paper), Ursula Keller, ETH Zurich (Switzerland) .................................................. [10682-19]
14:50: Modelling dynamics of high bit rate mode-locked VCSELs with different cavity geometries (Invited Paper), Eugene A. Avrutin, Univ. of York (United Kingdom); Knut Börjesson, Panajotov, Ioffe Inst. (Russia); [10682-20]
15:20: Monolithic symmetric multiple colliding pulse mode-locked laser formed by on-chip reflectors, Mu-Chieh Lo, Robinson C. Guzmán, Guillermo Carpiñero, Univ. Carlos III de Madrid (Spain) .................................................. [10682-21]
15:40: Mode-locked diode laser with resonant ring amplifier, Mohammad Ali Alouash, Rouwen H. Pilny, Carsten Brenner, Ruhr-Univ. Bochum (Germany); Andreas Klehr, Andrea Knigge, Gunther Tränkle, Ferdinand-Braun-Institut (Germany); Martin R. Hofmann, Ruhr-Univ. Bochum (Germany) .................................................. [10682-22]
Coffee Break. ...................................... Tue 16:00 to 16:30

TUESDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM ............ Tue 16:30 to 18:05
Hot Topics Session II
16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussels, Belgium
16:35 to 17:20: Coherent combination of fiber amplified ultrashort laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany
17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain
For additional details, please see page 7.

WEDNESDAY 25 APRIL

SESSION 6

LOCATION: SALON 4 .................................. Wed 8:30 to 10:30
Nanolasers
Session Chair: Stephan Reitzenstein, Technische Univ. Berlin (Germany)
8:30: Bifurcations in coupled nanolasers (Invited Paper), Alejandro M. Yacoubetti, Center for Nonlinearity and Nanotechnologies, CNRS (France) and CEA-LETI (France) .................................................. [10682-28]
9:00: Threshold dynamics in meso- and nanoscale lasers (Invited Paper), Tao Wang, Univ. Côte d’Azur (France) and Hunan Univ. of Science and Technology (China); Gian Piero Puccioni, Istituto dei Sistemi Complessi (Italy); Gian Luca Lippi, Univ. Côte d’Azur (France) .................................................. [10682-29]
9:30: An analytical approach to collective effects in nanolasers, Emil André, DTU Fotonik (Denmark); Igor E. Protsenko, P.N. Lebedev Physical Institute (Russian Federation); Alexander V. Uskov, P.N. Lebedev Physical Institute (Russian Federation) and ITMO Univ. (Russian Federation); [10682-30]
9:50: Stability and long-term behaviour of pulse trains in an excitable microlaser with delayed optical feedback, Soizic Terrien, Bernd Krauskopf, Neil G. R. Broderick, The Univ. of Auckland (New Zealand); Sylvain Barbay, Lab. de Photonsique et de Nanostructures (France) .................................................. [10682-31]
10:10: Lasing from ZnO nanorods prepared on ITO coated substrate, Wany Myan Yam Ahmad Karim, Muhammad Nuri Nordin, Univ. Sains Malaysia (Malaysia); Davide Priante, Mohammad Khaled Shafika, King Abdullah Univ. of Science and Technology (Saudi Arabia) .................................................. [10682-27]
Coffee Break. ...................................... Wed 10:30 to 11:00

SESSION 7

LOCATION: SALON 4 .................................. Wed 11:00 to 12:40
On-Si Integration
Session Chair: Il-Sug Chung, Technial Univ. of Denmark (Denmark)
11:00: III-V-on-silicon heterogeneously integrated lasers (Invited Paper), Gunther Roelkens, Univ. Gent IMEC (Belgium) .................................................. [10682-23]
11:30: Hybrid integration of GainAsP LD on silicon platform by epitaxial growth using directly bonded InP/Si substrate (Invited Paper), Kazuhiro Shimomura, Sophia Univ. (Japan) .................................................. [10682-24]
12:00: Continuous wavelength operation of injection III-V microdisk lasers directly grown on Si substrate with emission wavelength beyond 1.2 µm, Natalia V. Kryuchkova, Eduard Moiseen, Yuliya Polubavkina, Mikhail Maximov, St. Petersburg Academic Univ. (Russian Federation); Andrey Lipovskiy, Saint-Petersburg State Polytechnical Univ. (Russian Federation); Mingchu Tang, Mengya Liao, Jiang Wu, Siming Chen, Univ. College London (United Kingdom); Alexandr Dubinov, Nikolay Baidus, Dmitriy Yurasov, Institute for Physics of Microstructures Russian Academy of Sciences (Russian Federation); Yuila Guseva, Ioffe Institute (Russian Federation); [10682-25]
12:30: Lasing in Ge1-xSnx-based photonic crystals, Quang Minh Thai, CEA-INAC (France); Mathieu Bertrand, CEA-LETI (France); Nicolas Pauc, CEA-INAC (France); Joris Aubin, Alexei Tchelnokov, Jean-Michel Hartmann, CEA-LETI (France); [10682-26]
Lunch/Exhibition Break ............................ Wed 12:40 to 13:40

SESSION 8

LOCATION: SALON 4 .................................. Wed 13:40 to 15:40
Laser Nonlinear Dynamics II
Session Chair: Eugene A. Avrutin, Univ. of York (United Kingdom)
14:10: Recent advances in InAs/InGaAs quantum dot lasers with short optical feedback (Invited Paper), Frédéric Grillot, Henning Huang, Telecom ParisTech (France); Lu-Li-Chih Lin, Chih-Ying Chen, National Tsing Hua Univ. (Taiwan); Dejan Arsenijevic, Dieter Birnberg, Technische Univ. Berlin (Germany); Fan-Yi Lin, National Tsing Hua Univ. (Taiwan) .................................................. [10682-33]
14:40: Injection locking of two laterally- coupled semiconductor laser arrays, Nianqiang Li, Hadi Susanto, Benjamin Cemlyn, Ian Henning, Michael Adams, Univ. of Essex (United Kingdom) .................................................. [10682-34]
15:00: Beyond the relaxation frequency limit in square wave dynamics, Chi-Hak Uy, Lionel Weicker, Damien Rontani, Marc Sciamanna, Lab. Matériaux Optiques, Photonique et Systèmes (LMOPS) (France) and Chaire Photonique (France) .......................................................... [10682-35]

15:20: External cavity laser optoelectronic oscillator stabilization, Michael Joe Wishon, Nathan Webster, Tobias Niebur, Chien-Yuan Chang, Daeyoung Choi, Georgia Tech-Lorraine (France); Evgeny A. Victorov, ITMO Univ. (Russian Federation); David Citrin, Alexandre Locquet, Georgia Tech-Lorraine (France) ................................................................................................................ [10682-36]

Coffee Break. .................................................................................................................. Wed 15:40 to 16:10

SESSION 9

LOCATION: SALON 4 .................................................................................. WED 16:10 TO 17:50

Novel Concepts II

Session Chair: Kresten Yvind, DTU Fotonik (Denmark)

16:10: Integrated metasurfaces for multifunctional semiconductor lasers (Invited Paper), Qi Jie Wang, Nanyang Technological Univ. (Singapore); Guozhen Liang, Columbia Univ. (United States); Yongquan Zeng, Nanyang Technological Univ. (Singapore) ....................................................... [10682-37]

16:40: MECSEL: new concept for optically pumped semiconductor disk lasers with versatile wavelength (Invited Paper), Michael Jetter, Roman Bek, Univ. Stuttgart (Germany); Hermann Kahle, Tampere Univ. of Technology (Finland); Kimber Michler, Univ. Stuttgart (Germany) .................................................. [10682-38]

17:10: Optically-in-well-pumped semiconductor disk lasers capable of single- and dual-wavelength emission, Markus Polanik, Philipp Ackermann, Peter Unger, Univ. Ulm (Germany) ........................................................ [10682-39]

17:30: High power GaSb superluminescent diodes with broadband emission around 2.55 µm, Nouman Zia, Jukka Vehreißiä, Eero Koivusalo, Antti Aho, Soile Suomalainen, Mircea Guina, Tampere Univ. of Technology (Finland) ................................................................................................ [10682-40]

THURSDAY 26 APRIL

THURSDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM ................................ THU 9:00 TO 10:35

Hot Topics III

9.00 to 9.05: Introduction Harald Giessen, Univ. of Stuttgart, Germany

9.05 to 9.50: From extreme nonlinear optics to ultrafast atomic physics
Anne Lhuillier, Lund Univ., Sweden

9.50 to 10.35: Quantum computations and quantum simulations with trapped ions
Rainer Blatt, Institute for Experimental Physics, Univ. of Innsbruck, Austria

For additional details, please see page 8.

Coffee Break. .................................................................................................................. Thu 10:35 to 11:00

SESSION 10

LOCATION: SALON 4 .................................................................................. THU 11:00 TO 12:40

Photonic Crystal Lasers/VCSELs

Session Chair: Mercedeh Khajavikhan, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States)

11:00: Photonic crystal fanolasers (Invited Paper), Kreesten Yvind, DTU Fotonik (Denmark); Yi Yu, Technical Univ. of Denmark (Denmark); Elzaveta Semendjajeva, DTU Fotonik (Denmark); Dagmawi Bekele, Aurimas Sakanas, Thorsten S. Rasmussen, Technical Univ. of Denmark (Denmark); Kristoffer S. Mathiesen, DTU Fotonik (Denmark); Jesper Mark, Technical Univ. of Denmark (Denmark) .......................................................... [10682-41]

11:30: Membrane DFIB and DR lasers for low-power consumption and high-speed operation (Invited Paper), Shripada Arsi, Tokyo Institute of Technology (Japan) .......................................................... [10682-42]

12:00: Optical manipulation of current confinement in VCSELs with an external laser beam, Sven Bader, Mohamed Elattar, Univ. Ulm (Germany); Philipp Gerlach, Philips GmbH U-L-M Photonics (Germany); Rainer Michalzik, Univ. Ulm (Germany) .......................................................... [10682-43]

12:20: Thermally-induced birefringence in VCSELs: approaching the limits, Tobias Pusch, Univ. Ulm (Germany); Markus Lindemann, Nils C. Gerhardt, Martin R. Hofmann, Ruhr-Univ. Bochum (Germany); Rainer Michalzik, Univ. Ulm (Germany) .......................................................... [10682-44]

Lunch Break. .................................................................................................................. Thu 12:40 to 13:40

CONFERENCE 10682

SESSION 11

LOCATION: SALON 4 .................................................................................. THU 13:40 TO 15:40

Novel Concepts III

Session Chair: Frédéric Grillot, Télécom ParisTech (France)

13:40: Hybrid silicon-on-chip lasers based on quasi-bound states in the continuum (Invited Paper), Il-Sug Chung, Technical Univ. of Denmark (Denmark); Alireza Taghizadeh, Aalborg Univ. (Denmark) .......................................................... [10682-45]

14:10: Near-infrared GaAsBi quantum well laser diodes (Invited Paper), Shumin Wang, Chalmers Univ. of Technology (Sweden) and Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences (China); Xiaoyan Wu, Juanjuan Liu, Wenwu Pan, Chunfang Cao, Yaoyao Li, Lijuan Wang, Shanghai Institute of Microsystem and Information Technology (China) .......................................................... [10682-46]

14:40: Combining nanoscale light emitters with hyperbolic metamaterials as an efficient platform for the enhancement of random lasing action, Hung-I Lin, Yu-Ming Liao, National Taiwan Univ. (Taiwan); Kung-Ching Shen, Research Ctr. for Applied Sciences - Academia Sinica (Taiwan); Yang-Fang Chen, National Taiwan Univ. (Taiwan) .......................................................... [10682-47]

15:00: Theoretical study of polarization dynamics in VCSEL-based optical frequency combs, Ana Quince, Vrije Univ. Brussel (Belgium); Cristina de Dios Fernandez, Univ. Carlos III de Madrid (Spain); Ángel Valle, Luis Pesquera, Univ. de Cantabria (Spain); Pablo Acedo, Univ. Carlos III de Madrid (Spain) .......................................................... [10682-48]


Coffee Break. .................................................................................................................. Thu 15:40 to 16:00

SESSION 12

LOCATION: SALON 4 .................................................................................. THU 16:00 TO 17:40

Spatiotemporal and Feedback-induced Dynamics

Session Chair: Krassimir Panajotov, Vrije Univ. Brussel (Belgium)

16:00: Spatiotemporal extreme events in spatially extended lasers (Invited Paper), Cristina Rimoldi, Stephane Barland, Institut de Physique de Nice, Univ. Côte d’Azur (France); Franco Prati, Univ. degli Studi dell’Insubria (Italy); Giovanni Tissoni, Institut de Physique de Nice, Univ. Côte d’Azur (France) .......................................................... [10682-50]

16:30: Pinning and delay-induced depinning of cavity solitons in spatially inhomogeneous optical systems (Invited Paper), Svetlana V. Gurevich, Felix Tabbert, Westfälische Wilhelms-Univers. Münster (Germany); Katja Moroz, Vrije Univ. Brussel (Belgium); Mustapha Tidi, Univ. Libre de Bruxelles (Belgium) .......................................................... [10682-51]

17:00: Extreme events induced by collisions in a forced semiconductor laser, Pierre Cwalina, Cristina Rimoldi, Institut de Physique de Nice (France); François Gustave, Univ. des Sciences et Technologies de Lille (France); Lorenzo Colombo, Politecnico di Torino (Italy) and CNR-Istituto di Fotonica e Nanotecnologie (Italy); Massimo Brambilla, CNR-Istituto di Fotonica e Nanotecnologie (Italy) and Politecnico di Bari (Italy); Franco Prati, Univ. degli Studi dell’Insubria (Italy); Giovanna Tissoni, Stéphane Barland, Institut de Physique de Nice (France) .......................................................... [10682-52]

17:20: Feedback-induced desynchronization of the relaxation oscillation frequency in a semiconductor laser, Anton V. Kovalev, Evgeny A. Victorov, ITMO Univ. (Russian Federation); Boguslaw Tkalewicz, David Goulding, Cork Institute of Technology (Ireland) and Tyndall National Institute, Univ. College Cork (Ireland); Bryan Kelleher, Univ. College Cork (Ireland) and Tyndall National Institute (Ireland) .......................................................... [10682-53]
Fiber Lasers and Glass Photonics: Materials through Applications

Conference Chairs: Stefano Taccheo, Swansea Univ. (United Kingdom); Jacob I. Mackenzie, Univ. of Southampton (United Kingdom); Maurizio Ferrari, CNR-Istituto di Fotonica and Nanotecnologie (Italy)

Programme Committee: Rolindes Balda, Univ. del País Vasco (Spain); Patrice Camy, Ctr. de Recherche sur les Ions, les Matériaux et la Photonique (France); Yanne K. K. Chembo, FEMTO-ST (France); Amol Choudhary, The Univ. of Sydney (Australia); Cosimo D'Andrea, Politecnico di Milano (Italy); MiroslavDRAMINIC, Univ. of Belgrade (Serbia); Ulrich Hetter, ROFIN-SINAR Laser GmbH (Germany); Shbin Jiang, AdValue Photonics, Inc. (United States); Udo Klotzbach, Fraunhofer IWS Dresden (Germany); Antti Lassila, MIKES Mittateknikkes keskus (Finland); Antonio Lucianetti, HILASE Ctr. (Czech Republic); Anna Luiza Lukowiak, Institute of Low Temperature and Structure Research (Poland); Virginie Nazabal, Univ. de Rennes 1 (France); Nasser N. Peyghambarian, College of Optical Sciences, The Univ. of Arizona (United States); Francesco Prudenzenzo, Politecnico di Bari (Italy); Alexander Quandt, Univ. of the Witwatersrand (South Africa); Gediminas Račiuškaitis, Ctr. for Physical Sciences and Technology (Lithuania); Angela B. Seddon, The Univ. of Nottingham (United Kingdom); Akira Shirakawa, The Univ. of Electo-Communications (Japan); Irina T. Sorokina, Norwegian Univ. of Science and Technology (Norway)

SUNDAY 22 APRIL

OPENING REMARKS

LOCATION: SALON 7 ........................................ 13:10 TO 13:25

SESSION 1

LOCATION: SALON 7 ................................ SUN 13:25 TO 15:10

From Glass to Applications I

Session Chair: Stefano Taccheo, Swansea Univ. (United Kingdom)

13:22: A unified materials approach to mitigating optical nonlinearities in fiber laser (Keynote Presentation), John M. Ballato, Clemson Univ. (United States); Peter Dragic, Univ. of Illinois (United States); Maxime Cavillon, Courtyard Kucerka, Clemson Univ. (United States) [10683-1]

14:10: Monitoring and controlling fiber laser-based machining processes, Roberto Ocaña Pérez, IK4 Tekniker (Spain) [10683-2]

14:25: Monolithic Er/Yb double-clad fiber laser with FBG inscribed using the plane-by-plane inscription method, Jan Aubrecht, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); Anreas Theocharis, Cyprus Univ. of Technology (Cyprus); Peter Petković, Ivan Kašik, Filip Todorov, Moravec, Pavel Hontzák, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic) [10683-3]

14:40: Improvement of noise reduction in fiber Brillouin lasers due to multi-Stokes operation, Anantha Sebastian, Frédéric Ginovart, Pascal Besnard, CNRS-Fonctions Optiques pour les Technologies de l'information (France) [10683-4]

14:55: Optimum parameters for high-repetition rate femtosecond laser glass welding using an optical head with long focal length, Marion Galatier, Icube (France); Grégoire Chabrol, ICube (France) and ECAM Strasbourg-Europe (France); Ermel Bahouka, IREPA LASER (France); Virginie Nazabal, Univ. de Rennes 1 (France); Jan Gutwirth, Petr Nemec, Univ. Pardubice (Czech Republic) [10683-5]

Coffee Break ..................................................... Sun 15:10 to 15:40

SESSION 2

LOCATION: SALON 7 ................................ SUN 15:40 TO 17:50

From Glass to Applications II

Session Chair: Jacob I. Mackenzie, Univ. of Southampton (United Kingdom)

15:40: The bright white emission of p-diamonds (Invited Paper), Wieslaw Strek, Robert Tornala, Adam Olejniczak, Anna Lukowiak, O. Ignatenko, Institute of Low Temperature and Structure Research (Poland) [10683-6]

16:05: Narrowband gain in chalcogenide waveguides for low-power RF delay lines, Amol Choudhary, Yang Liu, The Univ. of Sydney (Australia); Khu Vu, Stephen Madden, The Australian Nat Univ. (Australia); David A. I. Marpaung, Benjamin J. Eggleton, The Univ. of Sydney (Australia) [10683-7]

16:20: Silica glass-based fiberoptic distributed monitoring waveguides for integrated photonics, Muhammad Zakwan, Koç Univ. (Turkey) and Air Univ. (Pakistan); Ceren B. Dag, Univ. of Michigan (United States); Ali Serpengüzel, Koç Univ. (Turkey) [10683-8]

Coffee Break ..................................................... Mon 11:00 to 11:30

MONDAY 23 APRIL

MONDAY HOT TOPICS

LOCATION: SCHWEIZER AUDITORIUM .................. MON 9:00 TO 11:00

Hot Topics Session I

9:00 to 9:15: Opening Remarks ......................... MON 9:00 TO 9:15

9:15 to 9:25: Welcome .................................... Mon 9:15 to 9:25

9:25 to 9:30: Introduction to Hot Topics ............. Mon 9:25 to 9:30

9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution (Invited Paper), Alain Aspect, Lab. Charles Fabry, Institut d'Optique, France

10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale (Invited Paper), Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

For additional details please visit page 6.
LOCATION: SALON 7  ................. MON 13:50 TO 15:15  
Fibers and Waveguide Sources  
Session Chair: Angela B. Seddon, 
The University of Nottingham (United Kingdom)

13:50: Functionaized optical fibres: exploring doped silica and doped semiconductors, metals and electrodes (Invited Paper), Pier J. Sazio, Francesco De Lucia, Univ. of Southampton (United Kingdom); Costantino Corbari, Renishaw plc (United Kingdom); John Badding, Derek W. Keefer, The Pennsylvania State Univ. (United States); Giorgio Speranza, Politecnico di Milano (Italy) and Istituto Italiano di Tecnologia (Italy);

14:15: Pr3+Yb3+ZBLAN glasses for applications in fiber lasers operating in VIS, Urszula Zdulska, Anna Jusza, Krzysztof Anders, Ryszard Piramidowicz, Adam Mustafa Abdul Khudus, Univ. of Malaya (Malaysia); Yun Wang, Gilberto Brambilla, Univ. of Southampton (United Kingdom)  

14:30: Global optimization via evolutionary approach of a Dy3+ZBLAN fiber amplifier for MID-IR applications, Marco Falconi, Dario Lannev, Caterina Clemenz, Politecnico di Bari (Italy); Toney Teddy Fernandez, Gianluca Galzerano, Politecnico di Milano (Italy); Francesco PDrudzena, Politecnico di Bari (Italy)  

14:45: Luminescent sol-gel-derived silica-based glass nanoparticles, Anna Lukowiak, Yuriy Geramyschuk, Wieslaw Strew, Institute of Low Temperature and Structure Research (Poland); Beata Borak, Wroclaw Univ. of Science and Technology (Poland); Andrea Chiapponi, Fondazione Bruno Kessler (Italy)  

15:00: Study of spectral variations in generation of random fiber laser based on set of fiber Bragg gratings, Elena Chalikova, Chalikova Elena, Ctr. de Investigación Científica y de Educación Superior de Ensenada B.C. (Mexico); Ilya D. Vatnik, Institute of Automation and Electrometry of the Siberian Branch of RAS (Russia) and University of Strathclyde (United Kingdom)  

15:20: Coffee Break  
Mon 15:15 to 15:45  

Session Chair: Akira Shirakawa, 
The Univ. of Electro-Communications (Japan)

15:45: Structural color tuning in 1D photonic crystals with electric field and magnetic field (Invited Paper), Francesco Scognotella, Politecnico di Milano (Italy); Eduardo Alucio-Sardi, Istituto di Tecnologia (Italy); Simone Callegari, Politecnico di Milano (Italy); Andrea Desi, Ika Krizek, Istituto Italiano di Tecnologia (Italy)  

16:10: Supersensitive luminescence thermometric binary films and coatings based on the emissions of rare earth and transition metal ions (Invited Paper), Milica Sekulic, Sanja Kuzman, Vesna Djordjevic, Mina Medic, Mirjana Ristic, Universitutum, Univ. of Belgrade (Serbia)  

16:35: Fabrication by rf-sputtering and assessment of dielectric Er3+ doped monolithic 1-D microcavity for coherent emission at 1.5 µm, Alessandro Chiasea, CNR-Istituto di Fotonica e Nanotecnologie (Italy) and Fondazione Bruno Kessler (Italy); Francesco Scognotella, Politecnico di Milano (Italy) and Istituto Italiano di Tecnologia (Italy); Yann G. Boucher, Ecole Nationale Supérieure des Sciences Appliquées et de Technologie (France); Anna Lukowiak, Institute of Low Temperature and Structure Research (Poland); Davor Ristic, Institut Ruder Boškovic (Croatia); Giorgio Speranza, Politecnico di Milano (Italy) and Istituto Italiano di Tecnologia (Italy); Giancarlo C. Righini, Museo Storico della Fisica e Cult. Studi e Ricerche “Enrico Fermi” (Italy)  

17:05: Biprismatic Bi2ZrO2O5 single crystals doped with Nd3+ or Pr3+: luminescence and μ-Raman investigations, Dobroslawka Kasprzowicz, Poznan Univ. of Technology (Poland)  

17:20: Investigation of the role of Ag multimers as broadband sensitizers in Tm3+Yb3+ doped glasses and glass ceramics, Francesco Enrichi, Luca M. R. Vieira, Univ. of Stockholm (Sweden) and Museo Storico della Fisica e Cult. Studi e Ricerche “Enrico Fermi” (Italy)  

Monday Poster Session  
LOCATION: HALL RHIN  ................. MON 17:30 TO 19:00  
Conference attendees are invited to attend the Photonics Europe poster session on Monday 17.30 to 19.00. Posters will be on display after 10.00 Monday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of selected paper posters will be available to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Characteristics of oxide multilayers (IGZO/Al/IGZO) with different zinc ratio for low emission glass coating, Chang Van, Yi Zhao, Hongbo Wang, Huyoun Qin, Yung Sun, Jilin Univ. (China)  

Influence of Kerr nonlinearity on PT-transition in coupled fibre lasers, Sergey V. Smirnov, Maxim O. Maksareno, Novosibirsk State Univ. (Russian Federation); Andrey A. Sukhorukov, Novosibirsk State Univ. (Russian Federation) and The Australian National Univ. (Australia)  

Optical characterization of photopolymer material using j=532nm and investigation into future use at j=850nm and j=1300nm, Derek Cassidy, Ra’ed Malallah, Inbarasan Muniraj, John Healy, John T. Sheridan, Univ. College Dublin (Ireland)  

Influence of interionic energy transfer mechanisms in Tm3+YAG on the maximum extractable energy in regenerative amplifiers, Ramon Springer, Christoph Pflaum, Friedrich-Alexander-Univers. Erlangen-Nürnberg (Germany)  

Silica- and germanate-based rare earth doped glasses for fiber lasers, Michal Kamraké, Ivan Kašák, Pavel Peterka, Jan Abrecht, Pavelhon zák, Ondřej Podražský, Jan Mrázek, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); Václav Kubeček, Czech Technical Univ. in Prague (Czech Republic); 

[10683-92]
One-dimensional disordered photonic structures with two or more materials, Alessandro Chiasseria, CNR-Institute of Fotonica and Nanotechnologie (Italy); Luigino Criante, Istituto di Fotonica e Nanotecnologie (Italy); Giuseppe Dell’Ava, Politecnico di Milano (Italy); Roberta Ramponi, Maurizio Ferrari, Lidia Zrn, CNR-Institute of Fotonica and Nanotechnologie (Italy); Anna Lukowick, Institute of Low Temperature and Structure Research, PAS (Poland); Ilka Kriegel-Santoi, Italiano di Tecnologia (Italy); Michele Bellingeri, Univ. degli Studi di Parma (Italy); Francesco Scognotaglia, Politecnico di Milano (Italy). ................................................ [10683-93]

Near-infrared emission in barium gallo-germanate glasses co-doped with Ce3+ and Pr3+ for broadband optical amplifiers. Marta Soltys, Agata Görry, Univ. of Silesia (Poland); Lidia Zrn, Museo Storico della Fisica e Cult. Studi e Ricerche “Enrico Fermi” (Italy) and Fondazione Bruno Kessler (Italy); Maurizio Ferrari, Fondazione Bruno Kessler (Italy) and Museo Storico della Fisica e Cult. Studi e Ricerche “Enrico Fermi” (Italy) and Istituto di Fisica Applicata “Nello Carrara” (Italy); Dominik Dorosz, AGH Univ. of Science and Technology (Poland); Wojciech A. Pisarski, Joanna Pisarska, Univ. of Silesia (Poland). ................................................ [10683-94]

Dynamic mode analysis with arbitrary rate equations, Christoph Pflaum, Erlangen Graduate School in Advanced Optical Technologies (Germany); Ramon Springer, Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany). ................................................ [10683-95]

Glass photonic structures fabricated by sol-gel route, Robert Tomala, Anna Lukowick, Institute of Low Temperature and Structure Research (Poland); Beata Borak, Wrocław Univ. of Science and Technology (Poland); Andrea Chiasseria, CNR-Institute of Fotonica and Nanotechnologie (Italy); Luigino Criante, Istituto di Fotonica e Nanotecnologie (Italy); Andrea Chiasseria, CNR-Institute of Fotonica and Nanotechnologie (Italy); Luigino Criante, Istituto di Fotonica e Nanotecnologie (Italy). ................................................ [10683-96]

Exploiting silicon oxycarbides for integrated photonic applications, Tizi-Ouzou (Algeria); Pierre Pfeiffer, Télécom Physique Strasbourg, Univ. de Strasbourg (France); Jean-Bernard Lecourt, Sébastien Guillemet, Julien Dupuy, Alexandre Gognau, Yves Hernandez, Multitel A.S.B.L. (Belgium). ................................................ [10683-97]

Benefits of visible light communication in car-to-car communication, Pasha Bekhrad, Erich Leitgeb, Technische Univ. Graz (Austria). ................................................ [10683-98]

Molecular dynamics study of rare earth-doped Mg-silicate nanoparticles in glasses without silica, Jeremiah Turley, Dallas, TX; Stéphane Chauvaudent, Univ. d’Angers (France); Wilfried Blanc, Univ. de Nice Sophia Antipolis (France); Natalie Gaumer, Dominique Guichaoua, Stéphane Chaussedent, Univ. d’Angers (France). ................................................ [10683-99]

Solid state laser and amplifier, Rajannya Sen, Tampere Univ. of Technology (Finland); Pedro Damas, Thomas Leduc, Nicolas Godbout, Ecole Polytechnique de Montréal (Canada); Sven Burger, JCMwave GmbH (Germany). ................................................ [10683-100]

Multicolor emission in germanate glasses containing Ce3+ and Pr3+ for white light-emitting diodes, Agata Görry, Marta Soltys, Univ. of Silesia (Poland); Lidia Zrn, Museo Storico della Fisica e Cult. Studi e Ricerche “Enrico Fermi” (Italy) and Fondazione Bruno Kessler (Italy); Maurizio Ferrari, CNR-Institute of Fotonica and Nanotechnologie (Italy); Maurizio Ferrari, CNR-Institute of Fotonica and Nanotechnologie (Italy); Lidia Zrn, Museo Storico della Fisica e Cult. Studi e Ricerche “Enrico Fermi” (Italy) and Fondazione Bruno Kessler (Italy); Roberta Ramponi, Fondazione Bruno Kessler (Italy) and Museo Storico della Fisica e Cult. Studi e Ricerche “Enrico Fermi” (Italy) and Istituto di Fisica Applicata “Nello Carrara” (Italy). ................................................ [10683-101]

Upconversion in low rare earth concentrated phosphate glasses prepared using direct doping method, Nirajan Ohja, Tampere Univ. of Technology (Finland); Minnea Tuomisto, Univ. of Turku (Finland); Turk N. Ozcan, Horia Hulubei National Institute of Physics and Nuclear Engineering (Romania); Constantine Pulido de Torre, José Luis de Miguel, Consejo Superior de Investigaciones Científicas (Spain). ................................................ [10683-102]

Photonic jet submicron laser ablation: from fiber core diameter to working distance and required energies, Sylvia Lecler, Robin Pierron, Julien Zeltowski, Pierre Pfeiffer,Cube (France). ................................................ [10683-103]

Effect of gamma irradiation over erbium-doped fibers into a fiber ring laser configuration, Andrey Streltse, Dan Sporea, National Institute for Laser, Plasma and Radiation Physics (Romania); Rosa Ana Pérez Herrera, Manuel Lopez-Amo, David Erro, Univ. Pública de Navarra (Spain); Daniel Martínez, Horia Hubatcu waveguides and solid-state amplifiers, National Institute of Physics and Nuclear Engineering (Romania). ................................................ [10683-104]

Spam optimization for transmission based on ultralong Raman fiber laser amplifier, Giuseppe Rizzelli Martella, Consejo Superior de Investigaciones Científicas (Spain); Pavel Rosa, National Institute of Telecommunications (Poland); Pedro Corredeira, Justus Liebig-University, Gießen, Germany; Consejo Superior de Investigaciones Científicas (Spain). ................................................ [10683-105]


Revealing spectral cross-correlations in radiation of multivolumewave-layer fiber with randomly distributed feedback, Oleg Gorbonunov, Ilya D. Vatnik, Institute of Automation and Electrometry of the Siberian Branch of RAS (Russian Federation); Srikanta Sugavanam, Aston Univ. (United Kingdom); Dmitriy V. Chistyakov, Quantum Devices (UK). ................................................ [10683-112]

Modelling of standard and specialty fibre-based systems using finite element methods, Natascha Castagna, Jacques Morel, Federal Office of Metrology METAS (Switzerland); Luc Texla, École Polytechnique Fédérale de Lausanne (Switzerland); Sven Burger, JCMwave GmbH (Germany). ................................................ [10683-113]

Development of a comprehensive 3D model for transversal mode instability investigations, Sergii O. Iakushev, Michael Steineki, Dietmar Kracht, Jörg Neumann, Peter Wessels, Laser Zentrum Hannover e.V. (Germany). ................................................ [10683-114]

High-power picosecond fiber-based laser operating at 515 nm, Jean-Bernard Lecourt, Sébastien Guillermet, Julien Dupuy, Alexandre Gognau, Yves Hernandez, Multitel A.S.B.L. (Belgium). ................................................ [10683-115]

Suppression of self-pulsing in fibre amplifier using pump modulation, ikram Khan, Anil Prabhu, Pratibha Hattab, M. Madras (India). ................................................ [10683-116]

Benefits of visible light communication in car-to-car communication, Pasha Bekhrad, Erich Leitgeb, Technische Univ. Graz (Austria). ................................................ [10683-117]

Femtosecond laser-induced CNT heterojunction as visible light photodetector, Aleksei Emelianov, Ivan Bobrinetskiy, National Research Univ. of Electronic Technology (Russia). ................................................ [10683-118]

Optimization of upconversion excitation conditions in Er3+ doped ZBLAN glasses for application in fiber lasers and amplifiers, Krzysztof Anders, Pawel Komorowski, Urszula Zdulska, Anna Jusza, Ryszard Piramidowicz, Warsaw Univ. of Technology (Poland). ................................................ [10683-119]

Alpha particle irradiation on various properties of Er3+, Yb3+ doped phosphate glasses, Rajannya Sen, Tampere Univ. of Technology (Finland); Ofelia Mureşan, National Institute of Physics and Nuclear Engineering (Romania); Nadia G. Boetti, Istituto Superiore Mario Boella (Italy); Laura Mihai, Dan Sporea, National Institute for Laser, Plasma and Radiations Physics (Romania); Ion Rusen, National Institute of Physics and Nuclear Engineering (Romania); Laetitia Petit, Tampere Univ. of Technology (Finland). ................................................ [10683-120]

Upconversion in low rare earth concentrated phosphate glasses prepared using direct doping method, Nirajan Ohja, Tampere Univ. of Technology (Finland); Minnea Tuomisto, Univ. of Turku (Finland); Turk N. Ozcan, Horia Hulubei National Institute of Physics and Nuclear Engineering (Romania); Constantine Pulido de Torre, José Luis de Miguel, Consejo Superior de Investigaciones Científicas (Spain). ................................................ [10683-121]

Raman-based CW supercontinuum generation in a fiber ring laser with low-output coupling, Muhammad Assad Arshad, Leibniz-Institut für Photonische Technologien e.V. (Germany) and Friedrich-Schiller-Univ. Jena (Germany); Alexander Hartung, Leibniz-Institut für Photonische Technologien e.V. (Germany); Mikaël Lebovitz, Université de Montréal (Canada); Hartmut Bartelt, Matthias Jäger, Leibniz-Institut für Photonische Technologien e.V. (Germany). ................................................ [10683-122]

Multicolor emission in silica sol-gel materials co-doped with Tb3+ and Eu2+ for near-field optoelectronic devices, Maiwa Pavlik, Barbara Szpikowska-Sroka, Maria Bańczyk, Wojciech A. Pisarski, Univ. of Silesia (Poland). ................................................ [10683-123]
Energy conversion from 3.3 μm to 660 nm in rare earth-doped materials for all optical gas sensing, Imen Hafiene, Alain Braud, Ctr. de Recherche sur les Ions, les Matériaux et la Photonique (France) .................................................. [10683-124]

Integrated photonic devices with silicon oxy carbide, Faisal Ahmed Memon, Francesco Morichetti, Andrea Melloni, Politecnico di Milano (Italy) ..................................................................... [10683-125]

Broadband frequency conversion inside periodically poled lithium niobate pumped by a near-infrared super continuum source (Invited Paper), Jihong Chu, Xing Li, Yating Sun, Shiyue Yu, National Univ. of Defense Technology (China) .............................................................................................. [10683-126]

Structure and optical properties of PECVD-prepared As-Se-Te chalcogenide films designed for the IR optical applications, Alexey Nezhdanov, Leonid Mochalov, Dmitry Usanov, Miklós Kudryashov, Alexander Logunov, N.I. Lobachevsky State Univ. of Nizhni Novgorod (Russian Federation); Andrey Stepanov, Alexey Muzranov, Alexander Romashkin, Institute of Applied Physics of the Russian Academy of Sciences (Russia); Dominik Doroz, AGH Univ. of Science and Technology (Poland); Aleksandr Mashin, N.I. Lobachevsky State Univ. of Nizhni Novgorod (Russian Federation); Alexey Korytin, Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation) ................................................ [10683-127]

Nondestructive characterisation technology for dispersion measurements in optical fibres, Aga Vaiga, VTT Technical Research Ctr. of Finland Ltd. (Finland) .................................................................. [10683-128]

Mode analysis in phase-locked multicore fiber laser by interference method, Akira Shirakawa, Yuta Kurosu, Henrik Tönnermann, The Univ. of Electro-Communications (Japan) .................................................. [10683-129]

Effect of ZnO-HFO₂ hybrid nanocrystals on amplified spontaneous emission in Eu-doped ternary glass-ceramic waveguides, Subhabrata Ghosh, Shivakiran N. B. Bhatka, Indian Institute of Technology Kharagpur (India) .................................................. [10683-130]

Design and research of bidirectional surface acoustic wave delay line fabricated using laser ablation method, Dmitry Lukyanov, Alexander Kukuev, Danil Safroinov, St. Petersburg Electrotechnical Univ (Russian Federation); Galina Yakubovskaya, St. Petersburg Electrotechnical Univ “LETI” (Russian Federation) ................................ [10683-131]

Solid state laser medium temperature distribution control under lasing condition, Andrei Korolkov, Moscow Institute of Physics and Technology (Russian Federation) and Kotel'nikov Institute of Radio-engineering and Electronics (Russian Federation); Alexey Korytin, Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation) ................................................ [10683-132]

TUESDAY 24 APRIL

SESSION 6

LOCATION: SALON 7 .................................. TUE 8:30 TO 10:35

Applications and Metrology

Session Chair: Amol Choudhary, The Univ. of Sydney (Australia)
3:00: Frequency fiber components for remote sensing (Invited Paper), Ian Coddington, National Institute of Standards and Technology (United States); Caroline Aiden, Univ. of Colorado Boulder (United States); Esther Baumann, Istituto di Fisica Applicata “Nello Carrara” (Italy); Francesco Morichetti, Politecnico di Milano (Italy); Christian S. Yung, National Institute of Standards and Technology (United States); Robert Wright, Univ. of Colorado Boulder (United States); Gabe Ycas, National Institute of Standards and Technology (United States) .................................................. [10683-27]
8:55: Nanocarbon integrated compact ultrafast solid state lasers (Invited Paper), Fabian Rotermund, KAIST (Korea, Republic of) .................................................. [10683-28]
9:20: Towards high-power on-chip GHz frequency combs, Amol Choudhary, The Univ. of Sydney (Australia); Alexander A. Lagatsky, Fraunhofer Ctr. for Applied Photonics (United Kingdom); Pradeep Karanam, Government Victoria College, Palakkad (India); Christian T. A. Brown, Univ. of St. Andrews (United Kingdom); David P. Shepherd, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom) .................................................. [10683-29]
9:35: Characterisation metrology for THz communications devices, Mira Nataly, National Physical Lab. (United Kingdom) .................................................. [10683-30]
9:50: Subwavelength engineered ultrabroadband mode multiplexer, David González-Andrade, Instituto de Optica “Daza de Valdés” (Spain); Juan Gonzalo Wangierniet-Pérez, Univ. de Málaga (Spain); Alvar V. Velasco, Consejo Superior de Investigaciones Científicas (Spain); Alejandro Ortega-Moflux, Univ. de Málaga (Spain); Alaine Herrero-Bermelio, Instituto de Optica “Daza de Valdés” (Spain); Robert Halir, Univ. de Málaga (Spain); Pavel Cheben, National Research Council Canada (Canada) .................................................. [10683-31]

10:05: Carbon nanotube planar absorber cryogenic bolometer as a novel primary absolute standard detector for optical power measurements from single-mode fiber optics and photonic chips, Marek Śmuk, Gediminas Eglevičius, Czech Metrology Institute (Czech Republic); Malcolm G. White, National A. Tomlin, Igor Vaysenkoher, Christopher S. Yung, John H. Lehman, National Institute of Standards and Technology (United States) .................................................. [10683-32]
10:20: High efficiency polarization beam splitter based on anisotropy-engineered MMI, Alaine Herrero-Bermelio, Consejo Superior de Investigaciones Científicas (Spain); José Manuel Luque-González, Univ. de Málaga (Spain); Alvar V. Velasco, Consejo Superior de Investigaciones Científicas (Spain); Alejandro Ortega-Moflux, Univ. de Málaga (Spain); Pavel Cheben, National Research Council Canada (Canada); Robert Halir, Univ. de Málaga (Spain) .................................................. [10683-33]
Coffee Break ....................................... Tue 10:35 to 11:00

LOCATION: SALON 7 .................................. TUE 11:00 TO 13:00

Applications and Sources

Session Chair: Cosimo D’Andrea, Politecnico di Milano (Italy)
11:00: Multimodal imaging utilizing novel fiber laser concepts (Invited Paper), Thomas Gottschall, Friedrich-Schiller- Univ. Jena (Germany); Tobias Meyer, Leibniz-Institut für Photonische Technologien e.V. (Germany); Michael Schmitt, Jens Lempert, Friedrich-Schiller- Univ. Jena (Germany); Andreas Tönnermann, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Christian S. Yung, National Institute of Standards and Technology e.V. (Germany) .................................................. [10683-34]
11:50: FLIM of a novel intracellular magnesium probe with an excitation source-based supercontinuum laser, Alessia Candeo, Politecnico di Milano (Italy); Azzurra Sargenti, Marti M. Moreau, Univ. of Bologna (Italy); Cosimo D’Andrea, Politecnico di Milano (Italy); Stefano Iotti, Univ. degli Studi di Bologna (Italy); Paola Toroni, Gianluca Valentini, Politecnico di Milano (Italy) .................................................. [10683-36]
12:05: High-power narrow-bandwidth fiber amplifier with a FBG-based seed, Jinping Hao, Nianjiang Chen, Hong Zhao, Hung Zhao, Nanjing Univ. of Aeronautics and Astronautics (China) .................................................. [10683-37]
12:20: High-energy subpicosecond 2 μm fiber laser, Jitka Černohorská, HILASE Ctr. (Czech Republic); Michal Jelinek, Czech Technical Univ. in Prague (Czech Republic); Martin C. Russell, Czech Metrology Institute of Electro-optics (China) .................................................. [10683-38]
12:35: Scanscopic properties of rare earth doped germanate glasses (Invited Paper), Renata Jankowska, Univ. of Science and Technology (Poland); Jacek Zmoja, Marcin Kowalczuk, Piotr Miłuski, Białystok Univ. of Technology (Poland); Joanna Pisarska, Silesian Univ. of Technology (Poland); Wlodzimierz A. Pisarski, Univ. of Silesia (Poland); Univ. of Szczecin (Poland); Maciej Sitarz, AGH Univ. of Science and Technology (Poland); Anna Lukowiak, Institute of Low Temperature and Structure Research (Poland); Dominik Doroz, AGH Univ. of Science and Technology (Poland); Maurizio Ferrari, Istituto Nazionale di Fotonica e Fotonicarese (Italy); Francesco Morichetti, Politecnico di Milano (Italy); Miroslav C. Špaček, Istituto di Fisica Applicata “Nello Carrara” (Italy) .................................................. [10683-133]
Lunch/Exhibition Break ........................ Tue 13:00 to 14:00

SESSION 7

LOCATION: SALON 7 .................................. TUE 14:00 TO 16:00

Special Session: PHOTIND EMPIR European Project

Session Chair: Antti Lassila, MIKES Mittateknikian keskus (Finland)
14:00: Single-mode fiber dispersion characterization from ultrabroadband while light spatial-spectral interferogram, Sandra-Mirella Väkevä, Heikki Valta-Huhtinen, Univ. of Eastern Finland (Finland) .................................................. [10683-39]
14:15: Online measurement of optical fibre geometry during manufacturing, Maksim Shpak, VTT Technical Research Ctr. of Finland Ltd. (Finland); Sven Burger, JCMWave GmbH (Germany); Ville Byman, VTT Technical Research Ctr. of Finland Ltd. (Finland); Kimmo Saastamoinen, Univ. of Eastern Finland (Finland); Mertsin Hasapalainen, Oplatek Group Oy (Finland) .................................................. [10683-40]
14:30: Spectral retrieval techniques for high-resolution Fourier transform microspectrometers, Alvar V. Velasco, Alaine Herrero-Bermelio, Consejo Superior de Investigaciones Científicas (Spain); Hugh Podmore, York Univ. (Canada); Pavel Cheben, Jens H. Schmid, National Research Council Canada (Canada); Maria L. Calvo, Univ. Complutense de Madrid (Spain); Siegfried Jansz, Dan-Xia Xu, National Research Council Canada (Canada); Alan Scott, Honeywell Aerospace (Canada); Ranjeet K. Varshney, York Univ. (Canada) .................................................. [10683-41]
14:45: Characterization of fibers used in high-power amplifiers, Till Walbaum, Andreas Lier, Franz Beier, Thomas Schreiber, Ramona Eberhardt, Klaus-Dieter Busch, Friedrich Schiller Univ. Jena, Germany; Frank and Feinmechanik (Germany). [10683-42]

15:00: Traceable instruments for encircled angular flux measurements, Natascha Castagna, Jacques Morel, Federal Office of Metrology METAS (Switzerland); Edward Robinson, Hui Yang, Arden Photonics Ltd. (United Kingdom). [10683-43]

15:15: Detecting single photon signals with mirror-enhanced grating couplers, Anna P. Ovyan, Westfälische Wilhelms-Univ. Münster (Germany); Pietro E. Lombardi, Univ. degli Studi di Firenze (Italy); Sofia Pazzaglì, Istituto Nazionale di Ottica (Italy); Giacomo Mazamatto, LENS - Lab. Europeo di Spettroscopia Non-Lineare (Italy); Giuseppe Kornblatt, Oliver Netzel, Humboldt-Univ. zu Berlin (Germany); Nico Gruhler, Westfälische Wilhelms-Univers. Münster (Germany); Oliver Benson, Humboldt-Univ. zu Berlin (Germany); Wolfram H. P. Penzkofer, Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt (Germany); Francesco S. Cataliotti, Costanza Toninelli, LENS - Lab. Europeo di Spettroscopia Non-Lineare (Italy). [10683-44]

15:30: Characterization of fiber connections for high power operation. Till Walbaum, Johannes Scholz, Ramona Eberhardt, Andreas Tännnermann, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany). [10683-45]

15:45: Calibration schemes for Fiber Bragg gratings interrogators, Pedro Correderra, José Luis de Miguel, Juan Galindo-Santos, Concepción Pulido de Torres, Altar V. Velasco, Consejo Superior de Investigaciones Científicas (Spain). [10683-46]

Coffee Break. TUE 16:00 to 16:30

TUESDAY HOT TOPICS

LOCATION: SCHWEIZER AUDITORIUM TUE 16:30 TO 18:05

Hot Topics Session II

16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussel, Belgium

16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Jeroen De Zutter, Macquarie University, Sydney, Australia; François Peters, Wolfram H. P. Penzkofer, Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt (Germany); Friedrich Schiller Univ. Jena, Germany

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, CPG-The Institute of Photonic Sciences, Spain

For additional details, please see page 7.

WEDNESDAY 25 APRIL

SESSION 9

LOCATION: SALON 7 WED 8:30 TO 10:25

Materials and Components III

Session Chair: Miroslav Drami
Vinca Institute of Nuclear Sciences (Serbia)

8:30: Tm-doped nanoparticles in optical fibers (Invited Paper), Wilfried Blanc, Manuel Vermillac, Univ. Côte d’Azur (France); Hussein Fneich, Univ. Montpellier (France); Jérémie Turlier, Univ. d’Angers (France); Marlite Cablé, Aix-Marseille Univ. (France); Courtyard Kucera, Clemson Univ. (United States); Daniel Borschneck, Aix-Marseille Univ. (France); François Peters, Philippe Vennéguès, Univ. Côte d’Azur (France); Thomas Neisius, Aix-Marseille Univ. (France); Stéphane Chaussedent, Aix-Marseille Univ. (France); Daniel R. Neuvile, Institut de Physique du Globe de Paris (France); Ahmad Mehdi, Univ. Montpellier (France); John M. Ballato, Clemson Univ. (United States).[10683-47]

8:55: Synthesis, multifunctional properties and applications of bivo4 nanoparticles, Slobodan Dolic, Dragana Jovanovic, Vinca Institute of Nuclear Sciences (Serbia); Lidia Zur, Museo Storico della Fisica e Ctr. Studi e Ricerche Spettroscopie Non-Lineari (Italy); Valentin Golant, Kotel’nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Spain.

9:10: Saturation of refractive index modulation in photosensitive materials, Sergiy Mokhov, CREOL, The College of Optics and Photonics, USF, University of Central Florida (United States).

9:25: MWIR emissions from 3.1 to 8 µm of Tb3+ doped seleno-telluride fibers, Nora Abdellaoui, Univ. de Rennes 1 (France); Florent Starceki, Ctr. de Recherche sur les Ions, les Matériaux et la Photonique (France); Catherine Bousard-Pflédel, Univ. de Rennes 1 (France); Jean-Louis Doulain, Alain Braud, Ctr. de Recherche sur les Ions, les Matériaux et la Photonique (France); Petr Vacek, Rezek Republic of Czech Republic; Leonardo De Bruin, Univ. de Rennes 1 (France); Patrice Camy, Ctr. de Recherche sur les Ions, les Matériaux et la Photonique (France); Virginie Nazabal, Univ. de Rennes 1 (France). [10683-49]


10:10: Development of a reliable fabrication process of evanescent field coupled fused fiber couplers, Sebastian Böhm, Katharina Hausmann, Mateusz Wysmolek, Felix Weilmann, Gabriel Pelegrina Bonilla, Laser Zentrum Hannover e.V. (Germany); Sebastian Schlangen, Kort Bremer, Bernhard Roth, Ludger Overmeyer, Hannoversches Zentrum für Optische Technologien (Germany); Michael Steinke, Jörg Neumann, Dietmar Kracht, Laser Zentrum Hannover e.V. (Germany). [10683-53]
14:50: Graphene-based saturable absorber for high average-power fiber lasers, Georges Semaan, Univ. d'Angers (France); Paul Mouchel, Univ. d'Angers (France) and Keopays SA (France); Yichang Meng, Hebei Univ. of Science and Technology (China); Mohamed Salhi, Meriem Kellou, François Sanchez, Univ. d'Angers (France) .................................................. [10684-42]

15:05: High energy, femtosecond fiber laser source at 1750 nm for 3-photon microscopy, Andreas Wienke, Dieter Wandt, Laser Zentrum Hannover e.V. (Germany); Germain-Lecourt, Didier Lekme, Yves Hernandez, Multitul A.S.B.L. (Belgium); Jörg Neumann, Dietmar Kracht, Laser Zentrum Hannover e.V. (Germany) ........................................................ [10683-61]

15:20: Intracavity pulse dynamics in all-normal dispersion all-fiber oscillator, Jan Szczepanek, Univ. of Warsaw (Poland); Tomasz M. Kardas, Institute of Physical Chemistry of the Polish Academy of Sciences (Poland); Cezslav Radzewicz, Univ. of Warsaw (Poland); Yury Stepanenko, Institute of Physical Chemistry of the Polish Academy of Sciences (Poland), Univ. of Warsaw (Poland) .......................................................... [10684-43]

Coffee Break ........................................ Wed 15:35 to 16:05

SESSION 11

LOCATION: SALON 7 ............... WED 16:05 TO 17:45

Materials and Components

Session Chair: Maurizio Ferrari,
CNR-Istituto di Fotonica e Nanotecnologia (Italy)

16:05: UV written integrated waveguides for quantum photonics (Invited Paper), James C. Gates, Univ. of Southampton (United Kingdom) .................................................. [10683-62]

16:30: Nd:LuCaF₄ fluoride crystals for inertial confinement fusion laser drivers, Jean-Paul Goossens, Commissariat à l’Energie Atomique (France); Simone Normani, Patrice Camy, Alain Braud, Rémy Soulard, Jean-Louis Doualan, Ctr. de Recherche sur les Ions, les Matériaux et la Photonique (France); Sébastien Montant, Diane Stoffel, Commissariat à l'Energie Atomique (France) ............................................. [10683-63]

16:45: Laser material Nd:LuCaF₄ characterization for high-energy and high-repetition rate amplification at 1053 nm, Diane Stoffel, Sébastien Montant, Jean-Paul Goossens, Commissariat à l’Energie Atomique (France); Simone Normani, Alain Braud, Patrice Camy, Ctr. de Recherche sur les Ions, les Matériaux et la Photonique (France) .................................................. [10683-64]

17:00: Stochastic model of energy transfer processes among rare earth ions, Pavel Lako, KTH Royal Institute of Technology (Sweden); Markus Pollnau, Univ. of Surrey (United Kingdom) .................................................. [10683-65]

17:15: Synthesis, structure and spectroscopic assessment of luminescent GdVO₄:Dy³⁺ and Dy₂V₂O₈ nanoparticles, Dragana Jovanovic, Vinca Institute of Nuclear Sciences (Serbia); Andrea Chiappini, Fondazione Bruno Kessler (Italy); Gianmarco de la Fuente, Tecnical University of Denmark (Denmark); Laurent Huot, NKT Photonics A/S (Denmark) and Technical Univ. of Denmark (Denmark); Joana Carthy, Ross Powell, Lucy Hooper, NKT Photonics (United Kingdom) .................................................. [10683-65]

17:30: Future solar energy devices, Mihaela Girtan, Univ. d’Angers (France) .................................................. [10683-68]

THURSDAY 26 APRIL

THURSDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM .......... THU 9:00 TO 10:35

Hot Topics III

9.00 to 9.05: Introduction
Harald Giessen, Univ. of Stuttgart, Germany

9.05 to 9.50: From extreme nonlinear optics to ultrafast atomic physics
Anne L’Huillier, Lund Univ., Sweden

9.50 to 10.35: Quantum computations and quantum simulations with trapped ions
Rainer Blatt, Institute for Experimental Physics, Univ. of Innsbruck, Austria

For additional details, please see page 8.

Coffee Break ................................ Thu 10:35 to 11:00
SESSION 14

LOCATION: SALON 7  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . THU 16:00 TO 17:25

Special Session Dedicated to Early Stage Researchers and Woman Scientists

Session Chair: Anna Lukowiak,
Institute of Low Temperature and Structure Research (Poland)

16:00: SiO$_2$-SnO$_2$:Er$^{3+}$ transparent glass-ceramics: fabrication and photonic assessment (Invited Paper), Lam Thi Ngoc Tran, CNR-Istituto di Fotonica e Nanotecnologie and Univ. degli Studi di Trento (Italy) and Ho Chi Minh City Univ. of Technology (Viet Nam) and Fondazione Bruno Kessler (Italy); Lidia Zur, Museo Storico della Fisica e Ctr. Studi e Ricerche “Enrico Fermi” (Italy) and Fondazione Bruno Kessler (Italy) and CNR-Istituto di Fotonica e Nanotecnologie (Italy); Damiano Massella, Univ. degli Studi di Trento (Italy) and CNR-Istituto di Fotonica e Nanotecnologie (Italy) and Fondazione Bruno Kessler (Italy); Beata Derkowska-Zielinska, Nicolaus Copernicus Univ. (Poland); Alessandro Chiasera, Stefano Varas, Cristina Armellini, CNR-Istituto di Fotonica e Nanotecnologie (Italy) and Fondazione Bruno Kessler (Italy); Daniele Zonta, Univ. degli Studi di Trento (Italy) and Univ. of Strathclyde (United Kingdom) and CNR-Istituto di Fotonica e Nanotecnologie (Italy); Thi Thanh Van Tran, Univ. of Science Ho Chi Minh City (Viet Nam); Anna Lukowiak, Institute of Low Temperature and Structure Research (Poland); Stefano Taccheo, Swansea Univ. (United Kingdom); Dominik Dorosz, AGH Univ. of Science and Technology (Poland); Giancarlo C. Righini, Museo Storico della Fisica e Ctr. Studi e Ricerche “Enrico Fermi” (Italy) and Istituto di Fisica Applicata “Nello Carrara” (Italy); Yann G. Boucher, Ecole Nationale Supérieure des Sciences Appliquées et de Technologie (France); Maurizio Ferrari, CNR-Istituto di Fotonica e Nanotecnologie (Italy) and Museo Storico della Fisica e Ctr. Studi e Ricerche “Enrico Fermi” (Italy) and Fondazione Bruno Kessler (Italy) ................................................... [10683-81]

16:25: Studies on carbon dots embedded Tamm plasmon polariton structures, Pratyusha Das, Subhrajit Mukherjee, Meher Wan, Indian Institute of Technology Kharagpur (India); Samit K. Ray, S.N. Bose National Ctr. for Basic Sciences (India); Shivakiran N. B. Bhaktha, Indian Institute of Technology Kharagpur (India) ............................... [10683-82]

16:40: Optical data transmission with plastic scintillating fibers, Ramona M. Galatus, Paul Farago, Technical Univ. of Cluj Napoca (Romania); Juan Vallés, Univ. de Zaragoza (Spain) ........................ [10683-83]

16:55: The role of gap states in chalcogenide glass response to photoexcitation by the high-intensity femtosecond laser pulses, Elena Romanova, Semyon Eseiko, Saratov State Univ. (Russian Federation); Vladimir Shiryayev, G. G. Devyatkyh Institute of Chemistry of High-Purity Substances of the Russian Academy of Sciences (Russian Federation); Stéphane Guizard, Ecole Polytechnique (France) ..........................[10683-85]

17:10: Dual polarization DFB fiber lasers as optical phase-locked microwave sources in the 1-10 GHz range, Marie Guionie, Ludovic Frein, François Bondu, Anthony Carré, Goulc’hen Loas, Institut de Physique de Rennes (France); Emmanuel Pinsard, Benoit Cadier, iXBlue Photonics (France); Mehdi Aouni, Marco Romanelli, Marc Vallet, Marc Brunet, Institut de Physique de Rennes, ...................................................[10683-86]
Nonlinear Optics and its Applications

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM .......................... MON 9:00 TO 11:00
Hot Topics Session I
9:00 to 9:15 Opening Remarks and Awards Presentation
9:15 to 9:25 Welcome
Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30 Introduction to Hot Topics
Thierry Georges, Oxiux, France
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

Coffee Break ................................................................. Mon 11:00 to 11:25

OPENING REMARKS
LOCATION: SALON 5 ............................................ MON 11:25 TO 11:30

SESSION 1
LOCATION: SALON 5 ............................................ MON 13:30 TO 12:40
2nd Order Nonlinear Effects
Session Chair: Andrea Blanco Redondo,
The Univ. of Sydney (Australia)
11:30: Engineering nano-oxides to enhance nonlinear optical signal for integrated devices (Invited Paper), Rachel Grange, ETH Zurich (Switzerland) .................................................. [10684-1]
12:00: Nonlinear optical properties of germanium at mid-infrared wavelengths, Byoung-Uk Sohn, Singapore Univ. of Technology & Design (Singapore); Corentin Monneyran, Lionel Kimerling, Anuradha Agarwal, Massachusetts Institute of Technology (United States); Dawn T.H. Tan, Singapore Univ. of Technology & Design (Singapore) .......................................................... [10684-2]
12:20: Asymmetrical second harmonic generation from metal-oxides and metal-metal boundaries, Michael Scalora, U.S. Army Aviation & Missile Research, Development & Engineering Ctr. (United States); Maria A. Vincenti, Univ. degli Studi di Brescia (Italy); Domenico de Ceglia, Neset AközbeK, The AEgis Technologies Group, Inc. (United States); Mark J. Bloemer, U.S. Army Aviation & Missile Research, Development, & Engineering Ctr. (United States); Jose Trull, Crina Cojocaru, Univ. Politecnica de Catalunya (Spain) .......................................................... [10684-3]
Lunch Break ................................................................. Mon 12:40 to 13:50

SESSION 2
LOCATION: SALON 5 ............................................ MON 13:30 TO 15:20
Silicon Photonics
Session Chair: Rachel Grange, ETH Zurich (Switzerland)
13:50: Slow-light and graphene-enhanced nonlinearity of silicon waveguides (Invited Paper), Nobuyuki Matsuda, Nippon Telegraph and Telephone Corp. (Japan); Eiji Kuramochi, Hiroki Takezue, Masaya Notomi, Rui Kou, NTT Basic Research Labs. (Japan); Tai Tsuizhawa, NTT Device Technology Labs. (Japan); Koji Yamada, Nippon Telegraph and Telephone Corp. (Japan); Atsushi Ishizawa, NTT Basic Research Labs. (Japan) .................................................. [10684-4]
14:20: High gain optical parametric amplification in ultra-silicon-rich nitride (USRN) waveguides, Kelvin J. A. Ooi, Singapore Univ. of Technology & Design (Singapore); Doris K. T. Ng, A*STAR - Data Storage Institute (Singapore); Ju Won Choi, Eiichi Kuramochi, Hiroki Takezue, Masaya Notomi, Rui Kou, NTT Basic Research Labs. (Japan); Arthur Chee, Lionel Kimerling, Anuradha Agarwal, Massachusetts Institute of Technology (United States); Dawn T.H. Tan, Singapore Univ. of Technology & Design (Singapore) .......................................................... [10684-5]
14:40: Intermodal four wave mixing in silicon waveguides for on-chip wavelength conversion and generation, Stefano Signorini, Univ. degli Studi di Trento (Italy); Mattia Mancinelli, Univ. degli Studi di Trento (Italy); SM Optics Srl. (Italy); Massimo Borghi, Univ. degli Studi di Trento (Italy); Martino Bernard, Fondazione Bruno Kessler (Italy) and Univ. degli Studi di Trento (Italy); Mher Ghulinyan, Georg Pucker, Fondazione Bruno Kessler (Italy); Lorenzo Pavesi, Univ. degli Studi di Trento (Italy) .................................................. [10684-6]
15:00: Controlling stimulated and spontaneous four wave mixing in coupled microring resonators, Massimo Borghi, Alessandro Trenti, Univ. degli Studi di Trento (Italy); Jean Marc Fédéli, MINATEC (France); Lorenzo Pavesi, Univ. degli Studi di Trento (Italy) .................................................. [10684-7]
Coffee Break ................................................................. Mon 15:20 to 15:50

SESSION 3
LOCATION: SALON 5 ............................................ MON 15:50 TO 18:00
Photonic Circuits
Session Chair: Nobuyuki Matsuda,
Nippon Telegraph and Telephone Corp. (Japan)
15:50: Novel nanophotonic circuits (Invited Paper), Andrea Blanco Redondo,
The Univ. of Sydney (Australia) .................................................. [10684-8]
16:20: Octave-spanning supercontinuum generation in titanium dioxide waveguides, Kamal Hammani, Lab. Interdisciplinaire Carnot de Bourgogne (France) and Univ. de Bourgogne Franche-Comté (France); Laurent Markey, Bertrand Kibler, Lab. Interdisciplinaire Carnot de Bourgogne (France); Manon Lamy, Lab. Interdisciplinaire Carnot de Bourgogne (France) and Univ. de Bourgogne Franche-Comté (France); Juan Arucos, Jean-Claude Weeber, Christophe Finot, Lab. Interdisciplinaire Carnot de Bourgogne (France) .................................................. [10684-9]
16:40: Gallium phosphate microresonator frequency combs, Simon Hönl, Katharina Schneider, IBM Research - Zurich (Switzerland); Miles Anderson, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Dalziel Wilson, IBM Research - Zurich (Switzerland) and Ecole Polytechnique Fédérale de Lausanne (Switzerland); Paul Seidler, IBM Research - Zurich (Switzerland); Tobias J. Kippenberg, Ecole Polytechnique Fédérale de Lausanne (Switzerland) .................................................. [10684-10]

Onsite News: www.spie.org/PEnews • #SPIEPhotonicsEurope
CONFERENCE 10684

17:00: Experimental demonstration of soliton-plasmon coupling in planar waveguides, Tingtu Kuriakose, FEMTO-ST (France) and Ctr. National de la Recherche Scientifique (France); Pardubice (Czech Republic); Mahmoud M. R. Elsayaw, Institut Fresnel (France) and Aix-Marseille Univ. (France) and Ecole Centrale Marseille (France); Petr Nercem, Univ. Pardubice (Czech Republic); Viriginie Nazebal, Univ. de Rennes 1 (France); Gilles Rizvresnes, Institut Fresnel (France) and Aix-Marseille Univ. (France) and Ecole Centrale Marseille (France); Mathieu Chauvet, FEMTO-ST (France) and Ctr. National de la Recherche Scientifique (France) .............................................[10684-11]

17:20: High-repetition-rate femtosecond-laser micromachining of low-loss photonic waveguides in lithium niobate, Beom Pyo Shim, PIOMD Pirojnpitpong, Aston Univ. (United Kingdom); Mykhaylo Dubov, Optoscribe Ltd. (United Kingdom); Sonia Boscolo, Aston Univ. (United Kingdom) .............................................[10684-12]

17:40: All-optical switches, unidirectional flow, and logic gates with discrete solitons in waveguide arrays, Usama Al Khawaja, United Arab Emirates Univ. (United Arab Emirates). ........................[10684-13]

MONDAY POSTER SESSION

LOCATION: HALL RHIN ........................................[MON 17:30 TO 19:00]

Conference attendees are invited to attend the Photonics Europe poster session on Monday 17.30 to 19.00. Posters will be on display after 10.00 Monday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Deciphering the energy transfer mechanism responsible for enhanced two-photon absorption in a plasmonic-organic hybrid, Kaweeri Gambhir, Parag Sharma, Ranjana Mehrotra, CSIR-National Physical Lab. (India). .............................................[10684-44]

Femtosecond filament-array in fused silica, Zuoqiang Hao, Dongwei Li, Lanru Zhang, Changchun Univ. of Science and Technology (China); Tingxi Xu, Univ. of Chinese Academy of Sciences (China). .............................................[10684-45]

Analysis of frequency modulation of femtosecond laser pulses with a variety of incident pulse shape at SHG in medium with combined nonlinear response, Vyacheslav A. Trolfimov, Dmitriy Kharlounov, Mikhail Fedotov, M.V. Lomonosov Moscow State Univ. (Russian Federation). .............................................[10684-46]

Physical parameters of ultrawide band laser sources and its impact on multiphoton imaging, Claire Lefort, XLIM Institut de Recherche (France); Laetitia Magnol, Veronique Blanquet, Univ. de Limoges (France). .............................................[10684-47]

Influence of pulse edges on femtosecond filamentation and supercontinuum generation in air, Tingxi Xu; Lindi Zhan, Mengxing Xu, Univ. of Chinese Academy of Sciences (China); Zuoqiang Hao, Changchun Univ. of Science and Technology (China). .............................................[10684-48]

Supercontinuum generation and intermodal four-wave mixing in a step-index few-mode fibre, Solveig Perrel, Gil Fanjoyoux, FEMTO-ST (France); Laurent Bigot, Institut National des Sciences et Moléculaires (France); Julien Fatome, Lab. Interdisciplinaire Carnot de Bourgogne (France); John M. Dudley, FEMTO-ST (France); Guy Millot, Lab. Interdisciplinaire Carnot de Bourgogne (France); Thibaut Sylvestre, FEMTO-ST (France). .............................................[10684-49]

Nonlinear optical characterization of new liquid niosids by a noise reduced thermometer managed EZ-Scan technique, Vinicius C. Ferreira, Ricardo R. B. Correia, Graciane Marin, Univ. Federal do Rio Grande do Sul (Brazil); Jusen A. Fernandes, The Univ. of Nottingham (United Kingdom); Jairton Dupont, Univ. Federal do Rio Grande do Sul (Brazil). .............................................[10684-50]

Effect of pump depletion on the evolution of cavity solitons in whispering gallery mode resonator structures, Maltrayee Saha, Samudra Roy, Shailendra K. Varshney, Indian Institute of Technology Kharagpur (India). .............................................[10684-51]

795-nm polarization squeezing at audio frequency band based on OPO at doped Er:YTAH Laser, Yashuai Han, Xinwen, Jinyu Liu, Lele Bai, Jun He, Mikhail S. Savelyev, Alexander Gerasimenko, Vitaly Podgaetsky, National Research Univ. of Electronic Technology (Russian Federation); Alexander M. Smirnov, Anastasiya Golinskaya, M.V. Lomonosov Moscow State Univ. (Russian Federation). .............................................[10684-52]

Nonlinear refractive index measurement by SPM-induced phase reconstruction, Piotr Kabacinski, Warsaw Univ. of Technology (Poland) and Institute of Physical Chemistry of the Polish Academy of Sciences (Poland); Michal Wierzbicki, Warsaw Univ. of Technology (Poland); Tomas M. Kardas, Institute of Physical Chemistry of the Polish Academy of Sciences (Poland); Czeslaw Radzewicz, Institute of Experimental Physics SAS (Poland) and Univ. of Warsaw (Poland). .............................................[10684-53]

Spatial-temporal pulses in a waveguide under conditions of second harmonic generation, Sergey V. Sazonov, Alexey A. Kalinovich, Maria V. Komissarova, Irina G. Zakharyeva, M.V. Lomonosov Moscow State Univ. (Russian Federation). .............................................[10684-54]

Two-dimensional semiconductors: a novel platform for integrated parametric oscillators, Andrea Marin, Istituto dei Sistemi Complessi (Italy); Alessandro Croftoni, CNR - SPIN (Italy); Carlo Rizzi, CNR - SPIN (Italy) and Univ. degli Studi dell'Aquila (Italy); Claudia Conti, Istituto dei Sistemi Complessi (Italy). .............................................[10684-55]

Fiber-based measurement of temporal intensity and phase profiles through self-phase modulation, Frederic Audo, Killian Baudin, Christian B. Finot, Lab. Interdisciplinaire Carnot de Bezons (France) .............................................[10684-56]

Dissipative soliton dynamics in non-Kerr and Kerr type nonlinear media, Abamash Sahoo, Samudra Roy, Indian Institute of Technology Kharagpur (India). .............................................[10684-57]

Generation of terahertz pulses in a nonlinear dielectric waveguide, Alexander N. Bugay, Joint team for Nonlinear Research (Russia with Federation); Sergey V. Sazonov, Russian Research Ctr. Kurchatov Institute (Russian Federation); Pavel Yu. Shestakov, M.V. Lomonosov Moscow State Univ. (Russian Federation). .............................................[10684-58]

Absorptance testing of massive nonlinear optical crystal boules of polyhedron shape, Georgii Aloian, Nikita Kovalenko, Irina Shebarshina, Alexey Konyashkin, Oleg Ryabushkin, Moscow Institute of Physics and Technology (Russian Federation). .............................................[10684-59]

Angular momentum nonlinear channelization of photonic and radio maser/ laser wave signals, space time analysis to hugely improve channel capacity related to any free-space or fibre communication system, Francesco Romano, HTEE (Italy); Rosario F. Cimmino, Consorzio Nazionale Interuniversitario per i Trasporti (Italy); Carmen Spadaro, “Sapienza” Rome Univ. (Italy). .............................................[10684-60]

Fabrication of microstructures on C/SiC surface by diffraction effect of femtosecond laser, Zhaoyang Zhai, Wenjun Wang, Xuesong Mei, Xian Jiaotong Univ. (China). .............................................[10684-61]

Compact diode-pumped Nd:YVO4 slab ns-amplifier, Yefei Mao, Lei Wang, Qinghua Lin Lab. of Space Technology (China); Alexander M. Smirnov, Anastasiya Golinskaya, M.V. Lomonosov Moscow State Univ. (Russian Federation). .............................................[10684-62]

Breakdown of optical lattice formation in dual-pumped supercontinUnits soliton states, Arkadoy Roy, Raktim Haldar, Shailendra K. Varshney, Indian Institute of Technology Kharagpur (India). .............................................[10684-63]

Piezoelectric resonance spectroscopy for measuring surface temperature distribution of optical materials interacting with laser radiation, Nikita Kovalenko, George Aloyan, Irina Shebarshina, Alexey Konyashkin, Oleg Ryabushkin, Moscow Institute of Physics and Technology (Russian Federation). .............................................[10684-64]

First demonstration of surface-enhanced stimulated Raman spectroscopy using continuous wave sources, Kevin C. Hewitt, Dalhousie Univ. (Canada). .............................................[10684-65]

Competing of saturation effect and Tyndall scattering in colloid solution of quantum dots under the action of a high-power laser radiation, Alexander M. Smirnov, Anastasiya Golinskaya, M.V. Lomonosov Moscow State Univ. (Russian Federation). .............................................[10684-66]

The saturate absorption spectroscopy effected by the temperature on the rubidium vapor cell D2 line, Nut Thahanaboonrongroj, Wilton Yingdeesk, King Mongkut's Institute of Technology Ladkrabang (Thailand); Pichet Limsuwan, King Mongkut's Institute of Technology Thonburi (Thailand); Prathan Buranasiri, King Mongkut's Institute of Technology Ladkrabang (Thailand). .............................................[10684-67]

1 μm-pumped optical parametric generator and oscillator based on orientation-patterned gallium phosphide, Hanuo Ye, IFCO - Institut de Ciencies Fotòniques (Spain); Suddapalli Chaitanya Kumar, Radiant Light SL (Spain); Junxiong Wei, IFCO - Institut de Ciencies Fotòniques (Spain); Peter G. Schunemann, BAE Systems (United States); Majid Ebrahimi-Zadeh, IFCO - Institut de Ciencies Fotòniques (Spain) and Institucio Catalana de Recerca i Estudis Avancats (Spain). .............................................[10684-68]

Threshold effect in optical limiters based on conjugates J-type phthalocyanine dimers Zn and Mg with single-walled carbon nanotubes, Mikhail S. Savelyev, Alexander Gerasimenko, Vitaly Podgaetsky, National Research Univ. of Electronic Technology (Russian Federation); Alexander Tolbin, Institute of Physiologically Active Compounds (Russian Federation); Pavel Vasilevsky, Sergey Tereschenko, National Research Univ. of Electronic Technology (Russian Federation). .............................................[10684-69]

Compact continuous wave THz source based on monolithic two-color laser diode, Jared Ombiro Gwara, Carsten Brenner, Ruhr-Univers. Bochum (Germany); Bernd Sumpf, Ferdinand-Braun-Institut (Germany) and Leibniz-Institut für Höchstfrequenztechnik (Germany); Andreas Klein, Ferdinand-Braun-Institut (Germany); Martin R. Hofmann, Ruhr-Univers. Bochum (Germany). .............................................[10684-70]

Tunable spatial compensation for polarization entangled photons, Salem F. Hegazy, Salah Hassan ElNaby, Hussen Garaanly, Cairo Univ. (Egypt). .............................................[10684-71]
Nonlinear properties of CdSe/ZnS quantum dots colloidal solution under one- and two-photon excitation by means of high-power ultrashort laser pulses, Alexander M. Smirnov, Yana Vatchuk, Maria Kozlova, Vladimir Mantsevich, Vladimir Dneprovskii, M.V. Lomonosov Moscow State Univ. (Russian Federation). [10684-75]

Nonlinear effects in colloidal nanoplatelets with two-dimensional electronic structure, Alexander M. Smirnov, Anastasiya Golinskaya, Dmitri Pzhizhikovskiy, Maria Kozlova, Fedor Sidlich, Svetlana Slepneva, Konstantin M. Smirnov, Kotel’nikov IRE RAS (Russian Federation); Ivan D. Laktaev, MV Lomonosov Moscow SU (Russian Federation); Petr I. Kuznetsov, CNR Istituto per la Microelettronica e Microsistemi (Italy) [10684-94]

Features of nonlinear absorption of Bi$_2$-xSbxTe$_3$-ySey films, Alexander M. Smirnov, Kote’nikov IRE RAS (Russian Federation); Ivan D. Laktaev, MV Lomonosov Moscow SU (Russian Federation); Petr I. Kuznetsov, CNR Istituto per la Microelettronica e Microsistemi (Italy) [10684-94]

Application of a second order nonlinear optical technique to probe gold nanoparticle-protein Interaction in solution, Kamini Mishra, Puspended K. Das, Indian Institute of Science (India) [10684-89]

Improvement of IM/DD-OFDM performance using adaptive equalization, Beesma Wcher, Sofien Mhiri, Ecole Polytechnique de Tunisie (Tunisia); Mutsam Jararejeh, Fahd Bin Sultan Univ. (Saudi Arabia); Rabah Attia, Ecole Polytechnique de Tunisie (Tunisia) [10684-90]

Performance analysis of fast-OFDM in SMF-based IM/DD link, Beesma Wcher, Sofien Mhiri, Ecole Polytechnique de Tunisie (Tunisia); Mutsam Jararejeh, Fahd Bin Sultan Univ. (Saudi Arabia); Rabah Attia, Ecole Polytechnique de Tunisie (Tunisia) [10684-90]

SESSION 5

LOCATION: SALON 5  ....................................... TUE 10:50 TO 12:40

High Harmonic Generation

Session Chair: Natalia M. Litchinitser, Univ. at Buffalo (United States)

10:50: Single molecule nonlinear optics (Invited Paper), Vahid Sandoghdar, Max-Planck-Institut für die Physik des Lichts (Germany) [10684-19]

11:20: Phase-matched optical wave mixing in the XUV region by two-color high-order harmonic generation, Khoa A. Tran, Peter Hannaford, Lap V. Dao, Swinburne Univ. of Technology (Australia) [10684-20]

11:40: Generation of extreme ultraviolet vector beams driven by high harmonic generation, Alex Turpin, Ctr. of Advanced European Studies and Research (Germany); Julio San-Román, Antonio Picón, Univ. de Salamanca (Spain); Rokas Drivėnas, Audrey Cerkaukaite, Peter G. Kazansky, Univ. of Southampton (United Kingdom); Charles G. Durfee, Colorado School of Mines (United States); Jigio J. Sola, Carlos Hernández-García, Univ. de Salamanca (Spain) [10684-21]

12:00: On the fly control of high harmonic generation using a structured pump beam, Liyia Lobachinsky, Liran Harel, Georgiy Shouglia, Yaniv Eliezer, Linor Michaeli, Ailon Bahabad, Tel Aviv Univ. (Israel) [10684-23]
CONFERENCE 10684

SESSION 6

LOCATION: SALON 5 ............................ TUE 13:50 TO 16:00

New Materials and Processes
Session Chair: Vahid Sandoghdar,
Max-Planck-Institut für die Physik des Lichts (Germany)
13:50: Structured light and nonlinear metamaterials (Invited Paper), Natalia M. Litchinitser, Univ. at Buffalo (United States) ............................................. [10684-24]
14:20: Modeling and parameters retrieving in time domain spectroscopy of material and metamaterial, Romain Peretti, Institut d’Électronique de Microélectronique et de Nanotechnologie (France); Martin Micica, Institut d’Électronique de Microélectronique et de Nanotechnologie (France) and VSB-Technical Univ. of Ostrava (Czech Republic); Sergey I. Mitryukovskiy, Kevin Froberger, Sophie Eliet, Mathias Vanwolleghem, Jean-François Lampin, Institut d’Électronique de Microélectronique et de Nanotechnologie (France) ............................................. [10684-25]
14:40: Analysis of the characteristics of the airy beam off-shooting soliton, Thomas Bouchet, Delphine Wolfsberger, Marc Sciamanna, CentraleSupélec (France) ............................................. [10684-26]
15:00: Correlated photon pair generation based on spontaneous four-wave-mixing in ultra-silicon-rich nitride waveguides, Ju Won Choi, Byoung-Uk Sohn, George F. R. Chen, Singapore Univ. of Technology & Design (Singapore); Doris K. T. Ng, A*STAR - Data Storage Institute (Singapore); Ju Won Choi, RAS (Russian Federation) ............................................. [10684-32]
15:20: Realization of a watt-level narrow-linewidth 318-nm UV laser and single-photon Rydberg excitation of cesium atoms, Jyumin Wang, Jiying Wang, Jiamong Bai, Jun He, Shaxiu Univ. (China) ............................................. [10684-29]
Coffee Break. ............................................. [10684-30]

TUESDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ............................ TUE 16:30 TO 18:05

Hot Topics Session II
16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussels, Belgium
16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany
17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain
For additional details, please see page 7.

WEDNESDAY 25 APRIL

SESSION 7

LOCATION: SALON 5 ............................ WED 08:30 TO 10:20

Nonlinear effects in optical waveguides
Session Chair: Anna C. Peacock,
Univ. of Southampton (United Kingdom)
8:30: Ultrafast fiber parametric temporal imaging (Invited Paper), Kenneth K. Y. Wong, The Univ. of Hong Kong (Hong Kong, China) ............................................. [10684-30]
9:00: Temporal optical super-resolution by super-oscillating beats, Alon Bahabad, Yaniv Eliezer, Liran Hareli, Liya Lobachinskaya, Sahar Froim, Tel Aviv Univ. (Israel), Singapore Univ. of Technology & Design (Singapore) ............................................. [10684-31]
9:20: Optimal input signal distribution and capacity for nondispersive nonlinear optical fiber channel at large signal to noise ratio. Ivan Terekhov, Alexey Reznichenko, Budker Institute of Nuclear Physics SB (Russia) ............................................. [10684-32]
9:40: Broadband four-wave mixing and optical parametric gain of broadband incoherent light using ultra-silicon-rich nitride waveguides, Ju Won Choi, Byoung-Uk Sohn, George F. R. Chen, Singapore Univ. of Technology & Design (Singapore); Doris K. T. Ng, A*STAR - Data Storage Institute (Singapore); Dawn T.H. Tan, Singapore Univ. of Technology & Design (Singapore) ............................................. [10684-33]
10:00: Mitigation of self-phase modulation by sinusoidally time varying phase, Frédéric Audo, Lab. Interdisciplinaire Carnot de Bourgogne (France); Sonia Boscolo, Aston Univ. (United Kingdom); Christophe Findot, Lab. Interdisciplinaire Carnot de Bourgogne (France) ............................................. [10684-34]
Coffee Break. ............................................. [10684-35]

LOCATION: SALON 5 ............................ WED 10:50 TO 12:40

SESSION 8

Quantum and nonlinear optics
Session Chair: Thomas H Karr III III, Tek Associates (United States)
10:50: Enhancing the performance of fibre-based nonlinear heralded single-photon sources through active switching (Invited Paper), Peter J. Mosley, Univ. of Bath (United Kingdom) ............................................. [10684-35]
11:20: Continuous-wave, multi-milliwatt, tunable difference-frequency generation across 4000–4094 nm in orientation-patterned GaP, Kavit Devi, Anupa Pahdye, ICFO - Institut de Ciències Fotòniques (Spain); Peter G. Schunemann, BAE Systems (United States); Majidbrahim-Zadeh, ICFO - Institut de Ciències Fotòniques (Spain) and Institut Catalana de Recerca i Estudis Avancats (Spain) ............................................. [10684-36]
11:40: A new way of controlling NesCOPOs (Nested Cavity doubly resonant OPO) for faster and more efficient high resolution spectrum measurement, Johann Georges des Aulnois, Benjamin Szymanski, Axel Grimmeau, Leo Sillard, Blue Industry and Science (France) ............................................. [10684-37]
12:00: Optical rectification for a new shot to shot feedback system for laser-driven plasma wakefield accelerators, Stefano Mattiello, Andreas Penirschke, Technische Hochschule Mittelhessen (Germany); Holger Schlirb, Deutsches Elektronen-Synchrotron (Germany) ............................................. [10684-38]
12:20: Temperature dependent noise in quantum frequency conversion, Pratima S. Kuo, National Institute of Standards and Technology (United States); Carsten Langrock, Jason S. Pelc, Martin M. Fejer, Stanford Univ. (United States) ............................................. [10684-39]
Lunch/Exhibition Break. ............................................. [10684-40]

LOCATION: SALON 7 ............................ WED 13:40 TO 15:35

JOINT SESSION

Mode-locked Fibre Lasers
Joint Session between Conferences 10683 and 10684
Session Chair: Neil G. R. Broderick, The Univ. Auckland (New Zealand)
13:40: Propagation of infrared ultrashort pulses in the air (Invited Paper), Thomas J. Karr, Defense Advanced Research Projects Agency (United States) ............................................. [10684-40]
14:05: High power ultrafast mode-locked ring fibre laser with InN SESAM, Francesca Gallazzi, Instituto de Optica “Daza de Valdés” (Spain); Marco Jimenez-Rodriguez, Univ. de Alcalá (Spain); Eva Monroy, Univ. Grenoble Alpes (France) and CEA Grenoble (France); Pedro Corredor, Instituto de Óptica “Daza de Valdés” (Spain); Miguel González-Herráez, Fernando B. Naranjo, Univ. de Alcalá (Spain); Juan Diego Aria-Cañastñón, Instituto de Óptica “Daza de Valdés” (Spain) ............................................. [10684-39]
14:20: Dissipative soliton resonance in the Er:Yb-doped double-clad fiber laser, François Sanchez, Georges Semaan, Fatma Benbrahim, Mohamed Sahl, Meriem Kemel, Alioue Niaa, Univ. d’Angers (France); Yichang Meng, Hebei Univ. of Science and Technology (China) ............................................. [10684-40]
14:50: Graphene-based saturable absorber for high average-power fiber lasers, Georges Semaan, Univ. d’Angers (France); Paul Mouchel, Univ. d’Angers (France) and Keopsys SA (France); Yichang Meng, Hebei Univ. of Science and Technology (China); Mohamed Sahl, Meriem Kemel, François Sanchez, Univ. d’Angers (France) ............................................. [10684-41]
15:05: High energy, femtosecond laser fiber source at 1750 nm for 3-photon microscopy, Andreas Wiencek, Dieter Wandt, Laser Zentrum Hannover e.V. (Germany); Jean-Bernard Lecourt, Didier Lekime, Yves Hermandez, Multitel A.S.B.L. (Belgium); Jorg Nielson, Laser Zentrum Hannover e.V. (Germany) ............................................. [10684-61]
15:20: Intracavity pulse dynamics in all-normal dispersion all-fiber oscillator, Jan Szczepanek, Univ. of Warsaw (Poland); Tomasz M. Kardas, Institute of Physical Chemistry of the Polish Academy of Sciences (Poland); Czeslaw Radzewicz, Univ. of Warsaw (Poland); Yuriy Stepanenko, Institute of Physical Chemistry of the Polish Academy of Sciences (Poland), Univ. of Warsaw (Poland) ............................................. [10684-43]
CONFERENCE 10685
LOCATION: SALON 6 AND MARIE CURIE B
Monday–Thursday 23–26 April 2018 • Proceedings of SPIE Vol. 10685

Biophotonics: Photonic Solutions for Better Health Care

Conference Chairs: Jürgen Popp, Leibniz-Institut für Photoneiche Technologien e.V. (Germany); Valery Y. Tuchin, N.G. Chernyshevsky Saratov State Univ. (Russian Federation); Francesco Saverio Pavone, European Lab. for Non-linear Spectroscopy (Italy)

Programme Committee: Peter E. Andersen, Technical Univ. of Denmark (Denmark); Arthur E. T. Chiu, National Yang-Ming Univ. (Taiwan); Johannes F. de Boer, Vrije Univ. Amsterdam (Netherlands); Kishan Dholakia, Univ. of St. Andrews (United Kingdom); Dror Fixler, Bar-Ilan Univ. (Israel); Paul Garside, Univ. of Glasgow (United Kingdom); Sylvain Gloux, Univ. de Strasbourg (France); Kirill V. Larin, Univ. of Houston (United States); Qiming Luo, Britton Chance Ctr. for Biomedical Photonics (China); Thomas G. Mayerhöfer, Leibniz-Institut für Photoneiche Technologien e.V. (Germany); Vasillis Ntziachristos, Helmholtz Zentrum München GmbH (Germany); David D. Sampson, The Univ. of Western Australia (Australia); Ernst H. K. Stelzer, Johann Wolfgang Goethe-Univ. Frankfurt am Main (Germany); Hugo Thienpont, Vrije Univ. Brussel (Belgium); Siva Umapathy, Indian Institute of Science (India); I. Alex Vitkin, Ontario Cancer Institute (Canada); Gert von Bally, Ctr. for Biomedical Optics and Photonics (Germany); Brian C. Wilson, Princess Margaret Hospital (Canada)

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM .......................... MON 9:00 TO 11:00
Hot Topics Session I

9:00 to 9:15
Opening Remarks and Awards Presentation

9:15 to 9:25
Welcome
Paul Montgomery, Univ. of Strasbourg, France

9:25 to 9:30
Introduction to Hot Topics
Thierry Georges, Oxxius, France

9:30 to 10:15:
From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France

10:15 to 11:00:
Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, Queen Mary, University of London, England

For additional details please visit page 6.

Coffee Break ........................................ Mon 11:00 to 11:25

OPENING REMARKS
LOCATION: SALON 6 .......................... MON 11:25 TO 13:20
SESSION 1
LOCATION: SALON 6 .......................... MON 13:30 TO 15:40

Therapy I

Session Chair: Jürgen Popp, Leibniz-Institut für Photoneiche Technologien e.V.

11:30: Investigations and developments for PDT in brain tumors (Invited Paper), Ronald Sroka, Adrian Rührm, Herbert Stepp, Niklas Markwardt, Laser-Forschungs labor (Germany). .......................................................... [10685-1]

11:55: Monte Carlo based light propagation models to improve efficacy of biophotonics based therapeutics of hollow organs and solid tumours including photodynamic therapy and photobiomodulation
Dorin A. Lilge, Albert Van Eeckhout, Angel Lluch, Leibniz-Institut für Photoneiche Technologien e.V. (Germany); Anna A. Zhikhoreva, Ioffe Institute (Russian Federation); Siva Umapathy, ITMO Univ. (Russia); Elena Kornilova, Institute of Cytology of the Russian Academy of Sciences (Russia); ..., Anna Salova, Institute of Cytology of the Russian Academy of Sciences (Russia). .......................................................... [10685-2]

12:10: Binding of cationic porphyrins and metalloporphyrins to the human transferrin for photodynamic therapy of tumors
Anna G. Gyukhanyan, Anna A. Zakoyan, Anna A. Zakoyan, Institute of Biochemistry, National Academy of Sciences of Armenia (Armenia); Aram G. Gyukhanyan, Molecules Therapeutiques in vitro (MTI) (France) and INSERF (France) and Univ. Paris Diderot (France); Marina V. Parkhots, Boris M. Dzhagavor, VI. Stepanov Institute of Physics, National Academy of Sciences of Belarus (Belarus); Marina A. Shevryanova, Yerevan State Univ. (Armenia); Guevork A. Kevorkian, Grigor V. Gyukhanyan, Institute of Biochemistry, National Academy of Sciences of Armenia (Armenia). .......................................................... [10685-3]

12:25: Photographic monitoring of living cells response to intracellular generation of singlet oxygen by means of digital holographic microscopy and holographic tomography
Andrey V. Beleslav, ITMO Univ. (Russian Federation); Anna A. Zhikhoreva, Ioffe Institute (Russian Federation) and ITMO Univ. (Russian Federation); Tatiana Belyaeva, Elena Kornilova, Anna Salova, Institute of Cytology of the Russian Academy of Sciences (Russian Federation); Anna A. Zhikhoreva, Ioffe Institute (Russian Federation). .......................................................... [10685-4]

12:45:
Lunch Break ........................................ Mon 12:40 to 13:40

SESSION 2

LOCATION: SALON 6 .......................... MON 13:40 TO 15:40

Imaging I

Session Chair: Lothar D. Lilge, Univ. Health Network (Canada)

13:40: Handheld laser speckle photometer for skin diagnostics
Rainer Riesenbeck, Andreas Wuttig, Mario Kanka, Daniel Kraus, Sarmishtha Banerjee, Leibniz-Institut für Photoneiche Technologien e.V. (Germany); ..., Michael Zieger, Martin Kaatz, SRH Wald-Klinikum Gera GmbH (Germany). .......................................................... [10685-5]

13:55: Retrieving viscoelastic properties using time-resolved spatial speckle imaging
Christelle Abou Nader, Jean-Michel Tuélie, Eric Tinet, Dominique Ettori, Lab. de Physique des Lasers, Univ. Paris 13 (France) and Institut Galilée (France). .......................................................... [10685-6]

14:10: Wide-field speckle imaging and two-photon microscopy close up for the investigation of cerebral blood flow in vivo in mice models of obesity, Fréderic Pain, Univ. Paris Sud 11 (France) and Ctr. National de la Recherche Scientifique (France); Hirac Gurden, Ctr. National de la Recherche Scientifique (France) and Univ. Paris Diderot - 7 (France) and Univ. Paris - Diderot 7 (France) and Ctr. National de la Recherche Scientifique (France). .......................................................... [10685-7]

14:25: Investigation of speckle pattern dynamics by laser speckle contrast imaging
Anton Sdovnov, Alexander Bykov, Alexey Popov, Igor A. Megininski, Univ. of Oulu (Finland). .......................................................... [10685-8]

14:40: Indices of polarimetric purity for biophotonics imaging
Albert Van Eckhout, Angel Lluch, Univ. Autónoma de Barcelona (Spain); Enric Garcia-Caurel, Ecole Polytechnique (France); Jose J. Gil, Univ. de Zaragoza (Spain); Adrià Sans, Carla Rodriguez, Irene Estévez, Univ. Autónoma de Barcelona (Spain); Emilio González, Hospital Univ. de Canarias (Spain) and Univ. Autónoma de Madrid (Spain); Juan Carlos Escalera, Univ. Autónoma de Barcelona (Spain); Ignacio Moreno, Univ. Miguel Hernández de Elche (Spain); ..., Juan Carlos Escalera, Univ. Autónoma de Barcelona (Spain). .......................................................... [10685-9]

14:55: Rotation-independent polarization parameters for distinguishing different anisotropic microstructures
Pengcheng Li, Tsinghua Univ. (China); ..., Hui Ma, Tsinghua Univ. (China). .......................................................... [10685-10]

15:10: Collinear back scattering Muller microscopy for biomedical applications
Zhenhua Chen, Yuanhuan Zhu, Tsinghua-Berkeley Shenzhen Institute (China); Honghui He, Graduate School at Shenzhen, Tsinghua Univ. (China); ..., Hui Ma, Tsinghua Univ. (China). .......................................................... [10685-11]

15:25: 3D digital histopathology of the human brain cortex
Irene Costantini, Giacomo Mazzamuto, Ludovico Silvestri, LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy); M. Neri, M. Roffilli, Bioretics Srl (Italy); Valerio Conti, Renzo Guerrini, Azienda Ospedaliera Univ. Anna Meyer (Italy); Leonardo Sacconi, Francesco Saverio Pavone, LENS - Lab. Europeo di Spettroscopie Non-Lineari (Italy). .......................................................... [10685-12]

Coffee Break ........................................ Mon 15:40 to 16:05

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CONFERENCE 10685

SESSION 3

LOCATION: SALON 6  ........................................... MON 16:05 TO 17:45

Therapy II
Session Chair: Ronald Srok, Laser-Forschungslabor (Germany)

16:05: Personalizing cytotoxic dose for RfU) coordination complex mediated photodynamic therapy in nonmuscle invasive bladder cancer (Invited Paper), Lothar D. Lighe, Univ. Health Network (Canada); Arkadi Mandel, Therasense, Inc. (Canada); Savo Lazic, Pavel Kaspler, Therasense, Inc. (Canada); Girish Kulikarni, Massachusetts General Hospital (United States) [10685-12]

16:30: Optical cavitation around gold nanorods for photocoustic microsurgery, Lucia Caviglio, Istituto di Fisica Applicata “Nello Carrara” (Italy); Paolo Tortoli, Univ. degli Studi di Firenze (Italy); Sonia Centi, Claudia Borri, Istituto di Fisica Applicata “Nello Carrara” (Italy); Iaria Panetelli, Ingolf Streit, Asclepiion Laser Technologies GmbH (Germany); Francesco Rossi, Fulvio Ratto, Roberto Pini, Istituto di Fisica Applicata “Nello Carrara” (Italy) [10685-13]

16:45: Blue LED treatment of superficial abrasions: in vivo experimental evidence of wound healing improvement, Francesca Rossi, Istituto di Fisica Applicata “Nello Carrara” (Italy); Riccardo Cicchi, Istituto Nazionale di Ottica (Italy); Giada Magni, Francesca Tatini, Lucia Caviglio, Istituto di Fisica Applicata “Nello Carrara” (Italy); Stefano Bacci, Univ. degli Studi di Firenze (Italy); Domenico Affere, Cristina Tripodi, Lorenzo Targhetta, EmoLED S.r.l. (Italy); Gaetano De Sienna, Univ. degli Studi di Firenze (Italy); Francesco Saverio Pavone, Istituto Nazionale di Ottica (Italy) and LENS - Lab. Europeo di Spektroskopie Non-Lineari (Italy) and Univ. degli Studi di Firenze (Italy); Roberto Pini, Istituto di Fisica Applicata “Nello Carrara” (Italy) [10685-14]

17:00: Insight into visibility of tumor on the microscopic level, Marina V. Shirmanova, Lubov Shimonova, Elena V. Zagaynova M.D., Nizhny Novgorod State Medical Academy (Russian Federation); Larisa Klapshina, G.A. Razuvaev Institute of Organometallic Chemistry, Russian Academy of Sciences (Russian Federation); Maria Lukina, Varvara Dudovenko, Nizhny Novgorod State Medical Academy (Russian Federation); Marina Kuzmina, Imperial College London (United Kingdom) [10685-15]

17:15: Evaluation of short pulse laser damage to the retinal pigment epithelium layer: a key point for the assessment of devices using the nanosecond regime, Scarlett Rami, Robert Bosch GmbH (Germany); Miriam Reh, Günther Zeck, Naturwissenschaftliches und Medizinisches Institut an der Univ. Tübingen (Germany); Nico Heusser, Robert Bosch GmbH (Germany) [10685-16]

17:30: Femtosecond laser pulses and gold nanorods towards treatment of Retinoblastoma, Niki Katschnik, Rosemary Godbout, Abdulhakem Y. Elzebbawi, Univ. of Alberta (Canada) [10685-17]

TUESDAY 24 APRIL

SESSION 4

LOCATION: SALON 6  ........................................... TUE 8:30 TO 10:40

Imaging II: Raman
Session Chair: Jürgen Popp, Leibniz-Institut für Photonische Technologien e.V. (Germany)

8:30: Molecular profiling of sepsis in mice using vibrational microspectroscopy (Invited Paper), Taru Verma, Indian Institute of Science (India); Rekha Gautam, The Univ. of Alabama at Birmingham (United States); Dipankar Nandi, Siva Unnithan, Univ. of Winnipeg (Canada) [10685-18]

8:55: In-situ species authentication of frozen-thawed meat and meat juice using shifted excitation Raman difference spectroscopy, Kay Sowoidnich, STFC Rutherford Appleton Lab. (United Kingdom); Heinz-Detlef Kronfeldt, Technical Univ. Berlin (Germany) [10685-19]

9:10: Investigations on multimodal image analysis routines for tissue diagnostics, Thomas Bockitz, Friedrich-Schiller-Univ. Jena (Germany); Shuxia Guo, Northwestern Polytechnical Univ. (China) [10685-20]

9:25: Analysis of human skin Raman and autofluorescence as predictors of chronic diseases, Ivan A. Bratchenko, Lyudmila A. Shamina, Dmitry N. Aretsyuk, Oleksii Myakin, Yuliya A. Khmelnitska, Valery P. Zakharov, Dmitry V. Kornilin, Vladimir N. Grishanov, Samara Univ. (Russian Federation); Peter A. Lebedev, Larissa A. Rogozina, Daria V. Pimenova, Samara State Medical Univ. (Russian Federation) [10685-21]

9:40: Raman spectroscopic profiling of intracellular lipid compositions of macrophages induced in the vicinity of cancer cells, Christian Matthias, Leibniz-Institut für Photonische Technologien e.V. (Germany); Simona Pace, Andreas Koebel, Univ. of Potsdam (Germany); Lena G., Jürgen Popp, Leibniz-Institut für Photonische Technologien e.V. (Germany) [10685-22]

9:55: Resonance Raman spectroscopy on whole blood in a microfluidic device with hydrodynamic cell-free layer creation, Moritz Matzthae, Technical Univ. of Munich (Germany); Oleg Zhuravlev, Technichal Xiangye Univ. of Denmark (Denmark); Rodolphie Marie, Anders Kristensen, Technical Univ. of Denmark (Denmark) [10685-23]

10:05: Time-resolved single photon spectroscopy through a single optical fibre for miniaturised medical probe design, Katjana Ehrlich, Heriot-Watt Univ. (United Kingdom); Andreas Kufcsák, Sarah McKinnie, Holly Fleming, Nicola Kristjaig, Colin J. Campbell, Robert K. Henderson, Kevin Dhalwai, The Univ. of Edinburgh (United Kingdom); Robert R. Thomson, Michael G. Tanner, Heriot-Watt Univ. (United Kingdom) [10685-24]

10:25: Investigation of brass as a real-time substrate for surface-enhanced Raman scattering (SERS) studies of DNA, Svetlana Marchuk, Yuriy Shevchenko, Timofei Sheremetiev, Dept. Chem., Sabanci Univ. (Turkey); Meriç Özcan, Sabanci Univ. (Turkey) [10685-25]

Coffee Break .................................................. TUE 10:40 TO 11:00

SESSION 5

LOCATION: SALON 6  ........................................... TUE 11:00 TO 12:40

Point of Care I
Session Chair: Sergei G. Sokolovskii, Aston Univ. (United Kingdom)

11:00: Multiparametric analysis of tumor response to chemotherapy using fluorescence imaging (Invited Paper), Elena V. Zagaynova M.D., Marina V. Shirmanova, Tatiana Sergeeva, Maria Lukina, Elena Gavr, Anastasia Shumilova, Nizhny Novgorod State Medical Academy (Russian Federation); Varvara Dudovenko, N.I. Lobachevsky State University of Nizhni Novgorod (Russian Federation); Alexander Mishin, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry RAS (Russian Federation); Olga Furman, Nizhny Novgorod State Medical Academy (Russian Federation); Vladislav Shcheslavsky, Becker & Hickl GmbH (Germany); Konstantin Lukyanov, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry RAS (Russian Federation; 10685-26]

11:25: Estimation of blood Raman spectrum from tissue measurements utilizing blood pulse, Maciej S. Wróbel, Janusz Smulko, Gdansk Univ. of Technology (Poland) [10685-27]

11:40: Engineering nanopattern geometry at molecular resolution to enhance sensitivity of nanoplasmic biosensors, Shibash Rastogi, Luxembourg Institute of Science and Technology (Luxembourg); Suresh Pooventhaling, Luxembourg Ctr. for Systems Biomedicine, Univ. of Luxembourg [Luxembourg]; Pierre Michel Adam, Univ. de Technologie Troyes (France); Jewgeni Starikov, Karlsruhe Institute of Technology (Germany); Saulius Juodkazis, Swinburne Univ. of Technology (Australia); Sivashankar Krishnamoorthy, Luxembourg Institute of Science and Technology (Luxembourg) [10685-28]

11:55: Quantifying the glucose, urea, and lactic acid concentration in mixture by confocal Raman microscopy, Zhengan Tang, Sinead Baratou, Tomáš Ward, Bryan Hennelly, National Univ. of Ireland, Maynooth (Ireland) [10685-29]

12:10: Chiral hybrid nanostructures for biomedical applications, Anastasia Visheratina, ITMO Univ. (Russian Federation); Vera Kuznetsova, Trinity College Dublin (Ireland) and ITMO Univ. (Russian Federation); Finn Pirzel-Milton, Trinity College Dublin (Ireland); Anna Orlova, Alikolov Fedorov, Alexander Technological Institute, Greece; Yuri Gun’ko, Trinity College Dublin (Ireland) and ITMO Univ. (Russian Federation) [10685-30]

12:25: Combined label-free/fluorescence platform based on Blood surface waves biochip for cancer biomarker detection, Norbert Danz, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Alberto Sinibaldi, Sapienza Univ. di Roma (Italy); Matteo Allegretti, Instituto Nazionale Tumori Regina Elena (Italy); Peter Munzert, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Elisabetta Sepe, Sapienza Univ. di Roma (Italy); Patrizio Giacomini, Instituto Nazionale Tumori Regina Elena (Italy); Francesco Michelotti, Sapienza Univ. di Roma (Italy) [10685-32]

Lunch/Exhibition Break ........................................ TUE 12:40 TO 13:50

SESSION 6

LOCATION: SALON 6  ........................................... TUE 13:50 TO 16:00

Point of Care II
Session Chair: Elena V. Zagaynova M.D., Nizhny Novgorod State Medical Academy (Russian Federation)

13:50: Laser-induced singlet oxygen generation in biotic systems and its emerging applications (Invited Paper), Sergei G. Sokolovskii, Aston Univ. (United Kingdom); Oxana V. Semyachkina-Glushakskaya, Saratov State Univ. (Russian Federation); Edik U. Rafailov, Aston Univ. (United Kingdom) [10685-33]

14:15: Optical focussion technique based on optogenetic and whispering gallery modes for drinking water purification, Amir R. Ali, Southern Methodist Univ. (United States) and the German Univ. in Cairo (Egypt); Amal S. Tourky, Al-Azhar Univ. (Egypt); Roushdy A. Ali, Al-Azhar Univ. (Egypt) [10685-34]

14:30: An injection-locking OF-CEAS for trace gas detection, Zhongyi Tan, Zhanran Xu, Zhifu Luo, Xingwu Long, National Univ. of Defense Technology (China) [10685-35]
Coffee Break. ...................................... Tue 16:00 to 16:30

WEDNESDAY 25 APRIL

JOINT SESSION 1

LOCATION: MARIE CURIE B .......................... WED 8:30 TO 10:40

NOTE ROOM CHANGE

Optics in Surgery I

Session Chair: Sylvain Gioux, Icube (France)

8:30: Looking and listening to tissues: advances in fluorescence and optoacoustic bio-imaging (Invited Paper), Vasillis Ntziachristos, Technische Univ. München (Germany) and Helmholtz Zentrum München GmbH (Germany) .......................................................... [10677-51]

9:10: Real-time oxygenation imaging using spatio-temporal modulation of light, Manon Schmidt, Amir Nahas, Swapnesh Panigrahi, Murielle Torregrossa, Sylvain Gioux, Icube (France) ............................................. [10677-57]

9:25: Quantitative subsurface fluorescence imaging enabled by spatial frequency domain imaging for enhanced fluorescence-guided surgery, Mira Silbai, Univ. of Toronto (Canada) and Princess Margaret Cancer Ctr. (Canada); Andrea Carini, CNR-Istituto di Fotonica e Nanotecnologia (Italy); Sanathana Konugolu Venkata Sekar, Claudia Guadagnio, Politecnico di Milano (Italy); Lorenzo Spinelli, CNR-Istituto di Fotonica e Nanotecnologia (Italy); Enzo Nisoli, Univ. of Studi di Milano (Italy); Paola Taroni, Rinaldo Cubeddu, Politecnico di Torino (Italy); Lorenzo Spinelli, CNR-Istituto di Fotonica e Nanotecnologia (Italy); Cristiano Bolognini, Univ. of Milano (Italy); Paolo Sestito, Univ. of L'Aquila (Italy); Andrea Farina, CNR-Istituto di Fotonica e Nanotecnologia (Italy) .................. [10677-39]

9:40: Phantom and methodology for fluorescence molecular imaging systems benchmarking, Dimitris Gorpas, Helmholtz Zentrum München GmbH (Germany); Maximilian Koch, Maria Anastasopoulou, Helmholtz Zentrum München GmbH (Germany) and Technische Univ. München (Germany); Uwe Klemm, Helmholtz Zentrum München GmbH (Germany); Vasillis Ntziaschristos, Helmholtz Zentrum München GmbH (Germany) and Technische Univ. München (Germany) .................. [10677-53]

9:55: Real-time imaging using an OCT device steered by a robotized flexible endoscope, Oscar Caravaca Mora, Lucile Zorn, Philippe Zanne, Florent Nageotte, Paul G. Montgomery, Michel De Mathelin, Icube (France); Michalina Gora, Icube, Univ. of Strasbourg (France) and Ctr. National de la Recherche Scientifique (France) .................. [10677-53]

10:10: CMOS-based contact imaging system for skin condition diagnosis by spatially resolved diffuse reflectance spectroscopy, Nils Pettdidier, Anne Koenig, Remy Gerbelot, Henri Grelante, CEA-LETI (France); Sylvain Gioux, Univ. de Strasbourg (France); Sophie Morales, CEA-LETI (France) .................. [10677-59]

10:25: Differentiation of femur bone from surrounding soft tissue using laser-induced breakdown spectroscopy as a feedback system for smart laserosteotomy, Hamed Abbassi, Georg Rauter, Raphael Guzman, Uldis Rubins, Andris Grabovskis, Janis Cimurs, Anastasias Caica, Univ. of Latvia (Latvia) .................. [10677-37]

Coffee Break. ...................................... Wed 10:40 to 11:00

CONFERENCE 10685

SESSION 7

LOCATION: SALON 6 .............................. WED 8:30 TO 10:15

Imaging III

Session Chair: Francesco Saverio Pavone, LENS - Lab. Europeo di Spettroscopia Non-Lineare (Italy)

8:30: Hyperspectral evaluation of skin blood oxygen saturation at baseline and during arterial occlusion, Zbigniev Marcinek, Ulidis Rubins, Andris Grabovskis, Janis Cimurs, Anastasias Caica, Univ. of Latvia (Latvia) .................. [10685-42]

8:45: In vivo fast automatic skin cancer recognition using a multispectral dermatoscopy imaging tool, Oleg O. Myakkin, Oleg A. Meisllov, Semyon G. Konovolov, Ivan A. Bratchenko, Samara National Research Univ. (Russian Federation); Alexander A. Moryatov, Sergey V. Kozlov, Samara State Medical Univ. (Russian Federation); Valery P. Zakharov, Samara National Research Univ. (Russian Federation) .................. [10685-43]

9:00: Hydrogel-based light guides for the design of optogenetic implants, Sonja Johannsmeyer, Laser Zentrum Hannover e.V. (Germany); Maria Leilani Torres, Leibniz Univ. Hannover (Germany); Tammo Ripken, Dag Heinemann, Laser Zentrum Hannover e.V. (Germany); Alexander Heisterkamp, Leibniz Univ. Hannover (Germany) .................. [10685-44]

9:15: Analysis of the connectivity of in vitro human iPSC-derived neuronal networks using holographic illumination, Felix Schmiede, TU Dresden (Germany); Simon Klapper, DFG-Ctr. for Regenerative Therapies Dresden (Germany); Lars Böttner, TU Dresden (Germany); Volker Busskamp, DFG-Ctr. for Regenerative Therapies Dresden (Germany); Jürgen Czarske, TU Dresden (Germany) .................. [10685-45]

9:30: Deep tissue optogenetics: targeted stimulation of light-sensitive cardiac tissues using near-infrared lasers, Maria Leilani Torres-Mapa, Institut fur Quantieneoptik, Leibniz Univ. Hannover (Germany); Monica Jara-Avaca, Mine Bakar, Ina Gruh, Medizinische Hochschule Hannover (Germany); Rajesh Komban, Christoph Gimmler, CAN GmbH (Germany); Sonja Johannsmeyer, Tammo Ripken, Dag Heinemann, Laser Zentrum Hannover e.V. (Germany); Alexander Heisterkamp, Leibniz Univ. Hannover (Germany) .................. [10685-46]

9:45: High-resolution magnetic field biosensor based on optical resonators, Amir R. Ali, Southern Methodist Univ. (United States) and The University of Texas System; Brian C. Wilson, Princess Margaret Cancer Ctr., Univ. Health Network (Canada); Yury V. Kistenev, Tomsk State Univ. (Russia) and A.M. Prokhorov General Physics Institute (Russian Federation); Alexander A. Moryatov, Sergey V. Kozlov, Samara State Medical Univ. (Russian Federation); Kirill I. Zaytsev, Bauman Moscow State Technical Univ. (Russian Federation); Kirill M. Malakhov, Anna S. Kucheryavenko, Russian Academy of Sciences (Russian Federation); Dmitry A. Kuzmin, Yury V. Kistenev, Tomsk State Univ. (Russia) and A.M. Prokhorov General Physics Institute (Russian Federation); Anna G. Syrkina, Research Institute for Cardiology, Russian Academy of Sciences (Russian Federation); Sergey A. Goryainov, N.N. Burdenko Neurosurgical Institute (Russian Federation); Kirill I. Zaytsev, Bauman Moscow State Technical Univ. (Russian Federation) and A.M. Prokhorov General Physics Institute (Russian Federation) .................. [10685-47]

Coffee Break. ...................................... Wed 10:15 to 10:45
JOINT SESSION 2

SESSION 8

LOCATION: SALON 6

SESSION 8

LOCATION: SALON 6

Imaging IV: OCT

Session Chair: Kirill V. Larin, Univ. of Houston (United States)

10:45: Multimodal approaches for skin cancer diagnosis (Invited Paper)
Valery P. Zakharov, Samara National Research Univ. (Russian Federation);
Sergey V. Kozlov, Samara State Medical Univ. (Russian Federation);
Ivan A. Bratchenko, Oleg D. Myakhin, Samara National Research Univ.
(Russian Federation); Alexander A. Moryatov, Samara State Medical Univ.
(Russian Federation); Andrey E. Orlov, Samara Regional Oncology Clinical Ctr.
(Russian Federation). [10685-50]

11:10: Bladder cancer biomarkers in co-localised two-photon excited
fluorescence and optical coherence microscopy images from fresh
biopsies, Björn-Ole Meyer, Dominik Marti, Peter E. Andersen, DTU Fotonik
(Denmark); Karin Mogensen, Herlev Hospital (Denmark) and Gentofte Hospital
(Denmark); Gregers G. Hermann, Frederiksberg Hospital (Denmark). [10685-51]

11:25: Micromotor catheters for dual-beam manually-actuated
distortion-corrected imaging, Anthony Lee M.D., Madeline Harlow,
Geoffrey Hohert, Calum MacAulay, Pierre Lane, BC Cancer Research Ctr.
(Canada). [10685-52]

11:40: Optical coherence tomography for noninvasive evaluation of
the middle ear effusion, Pavel A. Shilyagin, Dmitry Terpelov, Institute of
Applied Physics of the Russian Academy of Sciences (Russian Federation);
Valery Gelikonov, N.I. Lobachevsky State Univ. of Nizhni Novgorod
(Russian Federation); Grigory V. Gelikonov, Institute of Applied Physics of the
Russian Academy of Sciences (Russian Federation); Andrey Shakhov,
The Volga District Medical Ctr. (VDMC) (Russian Federation) and Institute of Applied
Physics of the Russian Academy of Sciences (Russian Federation); Natalia
Shiliagina, N.I. Lobachevsky State Univ. of Nizhni Novgorod (Russian
Federation). [10685-54]

11:55: Depth of focus extension in OCT by numerical emulation of
diffractionless beam illumination, Alexander A. Moiseev,
Grigory V. Gelikonov, Pavel A. Shilyagin, Sergey U. Ksenofontov,
Valentine M. Gelikonov, Institute of Applied Physics of the Russian Academy of
Sciences (Russian Federation). [10685-55]

12:10: Development of OCT-based strain- and stiffness-mapping
techniques for applications in thermomechanical reshaping of
collagenous tissues, Vladimir Y. Zaitsev, Alexandr Matveev, Lev A. Matveev,
Dmitry Shabanov, Grigory V. Gelikonov, Institute of Applied Physics of the
Russian Academy of Sciences (Russian Federation); Andrey E. Orlov,
Samara Regional Oncology Clinical Ctr. (Russian Federation). [10685-56]

12:25: Highly sensitive SPR-based PCF for biological substance sensing:
design and analysis, Sayed Asaduzzaman, Bikash Kumar Paul, Kawsar
Ahmed, Mawlana Bhathani Science and Technology Univ. (Bangladesh);
Touhid Bhuian, S.A.M. Matiur Rahman, Daffodil International Univ.
(Bangladesh). [10685-38]

Lunch/Exhibition Break. [10685-38]

Wed 12:40 to 13:45
SESSION 9

LOCATION: SALON 6 ........................................... WED 13:45 TO 15:10

Imaging V: OCT

Session Chair: Valery V. Pakharov, Samara Univ. (Russian Federation)

13:45: All-optical dynamic coherence elastography using laser excited dye-labeled polymer hydrogels. (Contributed Paper) Kshetrimayum, Kiran V. L. Chih - Hao Liu, Alexander Schill, Susanosh Das, Univ. of Houston (United States); Dmitry Neezov, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States); Mansannot Sinng, Univ. of Houston (United States); Konstantin Sokolov, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States). ................................................ [10685-65]


14:25: Pre-clinical parametric imaging for tumor delineation with optical coherence tomography. Valentin Demidov, Univ. of Toronto (Canada); Dina Guryanova, Saratov State Univ. (Russian Federation); Costel Flueraru, National Research Council Canada (Canada); I. Alex Vitkin, Univ. of Toronto (Canada) and Princess Margaret Cancer Ctr. (Canada). ........................................ [10685-67]


14:55: Towards swept-source mid-infrared OCT, Suzanna Freer, Dmitry Revin, Kristian Groom, Stephen J. Matcher, The Univ. of Sheffield (United Kingdom). ........................................ [10687-70]

Coffee Break. .................................................. Wed 15:10 to 15:35

SESSION 10

LOCATION: SALON 6 ........................................... WED 15:35 TO 17:50

Imaging VI

Session Chair: Valery V. Tuchin, Saratov State Univ. (Russian Federation)

15:35: Tumour detection and staging through multimodal fibre-probe spectroscopy, Enrico Baria, Suresh Anand, LENS - Lab. Europeo di Fisica della Materia (Portugal); Tatiana I. Avsievich, Alexey Popov, Alexander Bykov, Instituto Interuniversitario de Reconocimiento y Automatización de Orígenes (Spain) and Tomsk State Univ. (Russian Federation); Elena A. Sagaidachnaya, Saratov State Univ. (Russian Federation); Nikita A. Novolokhin, Saratov State Medical Univ. (Russian Federation); Ramamurti Anantharaman, University at Buffalo, State University of New York (United States); Valery V. Tuchin, Univ. of Houston (United States); Sergey B. Kuznetsov, Novichy Novgorod State Medical Academy (Russian Federation); Lev A. Matveev, Alexander A. Moiseev, Novichy Novgorod State Medical Academy (Russian Federation) and Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation); Anna A. Zhyzakov, Novichy Novgorod State Medical Academy (Russian Federation) and N.I. Lobachevsky State Univ. of Nizhni Novgorod (Russian Federation); Felix Feldlein, Elena V. Zhukhorov, M.D., Nizhny Novgorod State Medical Academy (Russian Federation); I. Alex Vitkin, Novichy Novgorod State Medical Academy (Russian Federation) and Univ. of Toronto (Canada); Natalia D. Gladkova, Nizhny Novgorod State Medical Academy (Russian Federation). ........................................ [10685-68]

Bedside revitalization by laser therapy (LLLT), Mohammad Nazrul Islam, Shaheed Suhrawardy Medical College and Hospital (Bangladesh). [10685-101]

Eating habits characterization with NIR spectroscopy and bioimpedance wearable sensor, Vladislav Lygachov, Samsung Russia Research Institute (Russian Federation). ........................................ [10685-102]

Polymeric optical fiber tweezers trapping performance of single biological and synthetic structures: a theoretical and experimental approach. Joana J. Paiva, INESC TEC (Portugal) and Univ. do Porto (Portugal); Rita S. R. Ribeiro, 4DCell (France) and Elveys (France); Pedro A. S. Jorge, Carlos C. Rosa, INESC TEC (Portugal) and Univ. do Porto (Portugal); Maria M. Azevedo, Paula Sampaio, IST - Institut de Investigação e Inovação em Saúde (Portugal); Joao P. S. Cunha, INESC TEC (Portugal) and Univ. do Porto (Portugal). ........................................ [10685-103]

Interaction of upconversion luminescent nanoparticles with tissues and organisms, Irina Yu Romanova, Valeria Ignatova, Yuliya V. Kuzmin, Alexey Valkov, Saint-Petersburg State Polytechnical Univ. (Russian Federation); Leonid Zoubkov, Drexel Univ. (United States). ........................................ [10685-72]

16:00: Depth profiling of stratum corneum hydration and lipids in vivo: comparison between short-wave infrared spectroscopic and biophysical measurements. Anna Ezerzakova, Philipps Research Institute (Netherlands) and Technische Univ. Delft (Netherlands); Silvania Pereira, Paul Urbach, Technische Univ. Delft (Netherlands); Babu Varghese, Philips Research Institute (Netherlands). ........................................ [10685-73]

16:20: The portable ‘hand held’ digital ophthalmoscope: a new type of high-resolution handheld retinal imaging instrument, Peter Bryanston-Cross, The Univ. of Warwick (United Kingdom) and Optical Diagnostics Ltd. (United Kingdom). ........................................ [10685-74]

16:35: Novel nanomaterials for applications in lung cancer imaging, Michal M. Godlewski, Paula Kielbik, Jaroslav Kaszewski, Ermilong Borstgraw, Warsaw Univ. of Life Sciences SGGW (Poland); Bartlomiej J. T. Duex, Institute of Physics, Polish Academy of Sciences (Poland); Zdzislaw J. Kuzmin, Alexey Valkov, Saint-Petersburg State Polytechnical Univ. (Russian Federation). ........................................ [10685-75]


17:05: Classification of cancerous tissue spectra using variational mode decomposition and artificial neural network, Savon Prathee, Indian Institute of Technology Kanpur (India); Sabyasachi Mukhopadhyay, Indian Institute of Science Education and Research Kolkata (India); Jay Chhablani, Ashutosh Richhariya, LR Pharmacinetics RAS (Russian Federation) and Tomsk State Univ. (Russian Federation); Elena A. Sagaidachnaya, Saratov State Univ. (Russian Federation); Nikita A. Novolokhin, Saratov State Medical Univ. (Russian Federation); Ramamurti Anantharaman, University at Buffalo, State University of New York (United States); Valery V. Tuchin, Univ. of Houston (United States); Maria M. Azevedo, Paula Sampaio, IST - Institut de Investigação e Inovação em Saúde (Portugal); Joao P. S. Cunha, INESC TEC (Portugal) and Univ. do Porto (Portugal). ........................................ [10685-104]

2D MFDA analysis to diagnose solar retinopathy, Sabyasachi Mukhopadhy, Nandan Das, Sawan Prathee, Indian Institute of Science Education and Research Kolkata (India); Jay Chhablani, Ashutosh Richhariya, LV Prasad Eye Institute (India); Nirmalya Ghosh, Prasanta K. Panigrah, Indian Institute of Science Education and Research Kolkata (India). ........................................ [10685-105]

Photonic immobilization techniques used for the detection of cardiovascular disease biomarkers, Olide Sofia Gonçalves, Annick Verbeeck Babila, Rahul Nandkoro, Pilar Jiménez-Meneses, Ángel Maquieira, Instituto Interuniversitario de Reconocimiento Molecular y Desarrollo Tecnológico (IDM) (Spain); Henrik Vorum M.D., Stian Bjørner Petersen, Maria Teresa Neves-Petersen, Aalborg Univ. (Denmark). ........................................ [10685-106]

Ex vivo characterization of cancerous and noncancerous tissues by multispectral Mueller polymetric imaging, Azael Mora-Núñez, Univ. de Guadalajara (Mexico); Geminiano Martinez-Ponce, Centro de Investigaciones en Optica, A.C. (Mexico); Guillermo Garcia Torales, Beethoven medico-Arven, Anar Beltrán-González, Univ. de Guadalajara (Mexico). ........................................ [10685-107]

Nanoparticle-induced aggregation of red blood cells probed with optical tweezers, Tatiana I. Avsievich, Alexey Popov, Alexander Bykov, Igor A. Meglinski, Univ. of Oulu (Finland). ........................................ [10685-108]

Multimodal optical diagnostic approach in psoriasis diagnosis, Viktor D. Kuzmin, Alexey Valkov, Saint-Petersburg State Polytechnical Univ. (Russian Federation) and Tomsk State Univ. (Russian Federation); Evgeny A. Zherbstov, Anton Univ. (United Kingdom); Elena V. Potapova, Orel State Univ. named after I.S. Turgenev (Russian Federation); Fazilla S. Malekzadeh, Association of Clinicians for Laser and Photobiology Dispersal (Russian Federation); Irina A. Sinshchikova, Andrey V. Dunaev, Orel State Univ. named after I.S. Turgenev (Russian Federation). ........................................ [10685-109]
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Monitoring of fibrinogen in blood using double slot hybrid plasmonic waveguide, Lokendra Singh, Santosh Kumar, DIT Univ. (India).

High-speed functional optical-resolution photoacoustic microscopy using stimulated Raman scattering source and contrast agent, Sang-Won Lee, Korea Research Institute of Standards and Science (Korea, Republic of) and Korea Univ. of Science and Technology (Korea, Republic of); Soon-Woo Cho, Pusan National Univ. (Korea, Republic of); Hyeong Kang, Korea Research Institute of Standards and Science (Korea, Republic of); Sung Min Park, Pusan National Univ. (Korea, Republic of); Tae Geol Lee, Korea Research Institute of Standards and Science (Korea, Republic of); Chang-Seek Kim, Pusan National Univ. (Korea, Republic of).

Optical properties of colorectal muscle in visible/NIR range, Ismael Carvalho, Rui Henrique, Luís Oliveira, IPO-PORTO (Portugal); Valery V. Tuchin, Saratov State Univ. (Russian Federation).

Fluorescent properties of nanodiamonds in result of interactions of nanomaterial layers by laser irradiation, Elena V. Zagaynova M.D., Nizhny Novgorod State Medical Academy (Russian Federation); Igor A. Medyanik, Privolzhsky Federal Research Ctr. (Russian Federation); Elena V. Zagaynova M.D., Nizhny Novgorod State Medical Academy (Russian Federation); Leonid Y. Kravets, Privolzhsky Federal Research Ctr. (Russian Federation); Natalya D. Gladkova, Nizhny Novgorod State Medical Academy (Russian Federation).

Determination of optical properties of mices internal organs in the range of 380 nm to 1900 nm, Marcelo Saito Nogueira, Tyndall National Institute (Ireland) and Univ. College Cork (Ireland); Michael Raju, Jacqueline Guntupalli, Katarzyna Komolobis, Konstantin Grygoryev, Huihui Lu, Eduardo Moriyama, Stefan Andersson-Engels, Tyndall National Institute (Ireland).

Fibrational spectroscopy of tissue-engineered structures based on proteins, chitosan and carbon nanotube conjugates, Yuliya Fedorova, Antokhina, Alexandra Kostina, Samara State Medical Univ. (Russia) and Samara State University (Russian Federation).

OCT-based characterization of the nonlinear properties of biological tissues in various states, Alexander A. Sovetsky, Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation); Ekaterina V. Gubarkova, Nizhny Novgorod State Medical Academy (Russian Federation); Lev A. Matveev, Alexander L. Matveyev, Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation); Marina A. Sirotkina, Natalia D. Gladkova, Nizhny Novgorod State Medical Academy (Russian Federation); Vladimir Y. Zaitsev, Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation).


An automated preprocessing method based on multiple wavelength measurements for image reconstruction of ultrasound-guided DOT, Murad Alhoolbi, Imam Abdurrahman Bin Faisal Univ. (Saudi Arabia); Quang Chu, Univesit (United States).

Optical fibre ultrasound transmitters using polydimethylsiloxane (PDMS) composites with wavelength-selective inks, Richard J. Colchester, Sacha Naimark, Erwin J. Ales, Sunish J. Mathews, Univ. College London (United Kingdom); Malcolm C. Finlay, Queen Mary Univ. of London (United Kingdom) and Barts Health NHS Trust (United Kingdom); Edward Z. Zhang, Paul C. Beard, Ivan P. Parkin, Sbastien Ourselin, Ioannis Papakonstantinou, Adrien E. Desjardins, Univ. College London (United Kingdom).

Pork spoilage examination by visible and near-infrared spectroscopy, Maria Perez, Ekaterina G. Borisova, Ioana B. Pascu, Oleg A. Samokhin, Victor Alexeev, Optoelectronics and Measurement Techniques Lab. (Finland).

Multimodal OCT characterization of human breast cancer morphological types: preliminary study, Ekaterina V. Gubarkova, Nizhny Novgorod State Medical Academy (Russian Federation); Alexander A. Sovetsky, Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation); Lev A. Matveev, Nizhny Novgorod State Medical Academy (Russian Federation) and Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation); Vladimir Y. Zaitsev, Nizhny Novgorod State Medical Academy (Russian Federation) and Institute of Applied Physics of the Russian Academy of Sciences (Russian Federation); Dmitry A. Vorontsov, Alexey Y. Vorontsov, Nizhny Novgorod Regional Oncology Hospital (Russian Federation); Slavchenko, Natalya D. Gladkova, Marina A. Sirotkina, Nizhny Novgorod State Medical Academy (Russian Federation).

High-speed functional optical-resolution photoacoustic microscopy using stimulated Raman scattering source and contrast agent, Sang-Won Lee, Korea Research Institute of Standards and Science (Korea, Republic of) and Korea Univ. of Science and Technology (Korea, Republic of); Soon-Woo Cho, Pusan National Univ. (Korea, Republic of); Hyeong Kang, Korea Research Institute of Standards and Science (Korea, Republic of); Sung Min Park, Pusan National Univ. (Korea, Republic of); Tae Geol Lee, Korea Research Institute of Standards and Science (Korea, Republic of); Chang-Seek Kim, Pusan National Univ. (Korea, Republic of).

Feasibility study of polarization imaging and confocal fluorescence microscopy for histology analysis of soft tissue neoplasia, Taislava I. Genovs-Hristova, Institute of Electronics (Bulgaria); Thomas Sang Hyuk Yoo, Hye Ryung Lee, Ecole Polytechnique (France) and Univ. Paris-Saclay (France) and Ctr. National de la Recherche Scientifique (France); Ekaterina G. Borisova, Institute of Electronics (Bulgaria); Enric Garcia-Caurel, Ecole Polytechnique (France) and Univ. Paris-Saclay (France) and Ctr. National de la Recherche Scientifique (France); Marius Hinsberger, Univ. des Saarlandes (France); Stefan Naumann, Klaus-Uwe Golliner, Hochschule Trier (Germany); Achim Langenbucher, Bernhard Schick, Gentiana I. Wenzel M.D., Univ. des Saarlandes (Germany).

In vivo study of skin cancers with dermatoscopy, hyperspectral imaging and Raman spectroscopy, Ivan A. Bratchenko, Samara Univ. (Russian Federation); Alexander A. Monyatov, Samara State Medical Univ. (Russian Federation); Yulia A. Krishtoforova, Dmitry N. Artemyev, Oleg O. Myakina, Samara Univ. (Russian Federation).

Analysis of the microtubule electrical transmission from the mathematical crystal theory approach: is it feasible using transport electrical properties to detect diseases?, Noemi Sanchez Castro, Benemérita Univ. Autónoma de Puebla (Mexico) and Ecole d’optométrie, Univ. of Montreal (Canada); Marcela A. Palomo Ovando, Benemérita Univ. Autónoma de Puebla (Mexico); Kanad Ray, Amity Institute of Applied Physics, Amity Univ. (India); Anirban Bandyopadhyay, National Institute for Materials Sciences, Japan; Eduard H. Lub, Erin C. Loo, Aarne Eero, Aalto University, Finland; Univ. of Montreal (Canada).

Study of photodynamic diagnosis for peritoneal metastasis using talaporfin sodium, Kensho Suzuki, Liming Li, Chitone Institute of Science and Technology (Japan).

Component analysis of gallstones using FE-SEM and EDS, Hajime Iwamoto, Chitone Institute of Science and Technology (Japan).

Photacoagulation microscopy with transmissive adaptive optics using liquid crystal, Yusuke Notsuka, Saga Univ. (Japan); Makoto Kurihara, Yasuhiro Hashitsume, Citizen Watch Co., Ltd. (Japan); Yoshihito Harada M.D., Kyoto Prefectural Univ. of Medicine (Japan); Eiji Takahashi, Yoshihisa Yamaoka, Saga Univ. (Japan).

A heuristic algorithm to calculate optical properties of turbid media, Marius Hinsberger, Univ. des Saarlandes (Germany); Stefan Naumann, Klaus-Uwe Golliner, Hochschule Trier (Germany); Achim Langenbucher, Bernhard Schick, Gentiana I. Wenzel M.D., Univ. des Saarlandes (Germany).

In vivo study of skin cancers with dermatoscopy, hyperspectral imaging and Raman spectroscopy, Ivan A. Bratchenko, Samara Univ. (Russian Federation); Alexander A. Monyatov, Samara State Medical Univ. (Russian Federation); Yulia A. Krishtoforova, Dmitry N. Artemyev, Oleg O. Myakina, Samara Univ. (Russian Federation).

Stimulation of the specific conductivity of the biocompatible nanomaterial layers by laser irradiation, Lev Ichiizidzuni, National Research Univ. of Electronic Technology (Russian Federation); Olga Glushkov, Georgia, Saratov, Russia; M. S. Batyev, Natalya D. Gladkova, Marina A. Sirotkina, Nizhny Novgorod State Medical Academy (Russian Federation); Alexander Gerasimenko, Vitaly Podgaetsky, Sergei Selishchev, National Research Univ. of Electronic Technology (Russian Federation).

Relationship between NIR laser power and the human forehead tissue backscattering image features, Jirapong Manit, Achim Schweikard, Floris Ernst, Univ. zu Lübeck (Germany).

Optical UV-VIS-NIR spectroscopy of benign, dysfunctional and malignant cutaneous lesions ex vivo, Ekaterina G. Borisova, Taislava I. Genovs-Hristova, Institute of Electronics (Bulgaria); Thomas Sang Hyuk Yoo, Hye Ryung Lee, Ecole Polytechnique (France) and Univ. Paris-Saclay (France) and Ctr. National de la Recherche Scientifique (France); Kai Huang, Institut fòr Biomedicine (Ireland) and Univ. College Cork (Ireland); Michael Raju, Jacqueline Guntupalli, Katarzyna Komolobis, Konstantin Grygoryev, Huihui Lu, Eduardo Moriyama, Stefan Andersson-Engels, Tyndall National Institute (Ireland).
Multispectral analysis and characterization of biological tissues for the evaluation of occular changes derived from folic acid deficiency.

Cristina Kurschi, D.D.S., Instituto de Física de São Carlos (Brazil); Mariana Portaccio, Antônella D’Agostino, Univ. degli Studi della Campania Luigi Vanvitelli (Italy); José M. Pio, Univ. de São Paulo (Brazil); and Eduardo A. V. da Silva, Univ. Federal do Rio de Janeiro (Brazil). [10685-140]

Double-snapshot mapping of up to five skin chromophores, Ilze Ošietā, Raimonda Ciems, Kalvis Lauberts, Edgars Kiviesis-Kippe, Janis Sigulda, Univ. of Latvia (Latvia); and Ines Delfino, Univ. degli Studi della Tuscia (Italy). [10685-141]

Optimal monitoring of cell migration processes in a 3D scaffold, Ines Delfino, Univ. degli Studi della Tuscia (Italy); and Valentina Gavritko, Univ. degli Studi della Tuscia (Italy). [10685-142]

Snapshot hyperspectral system for noninvasive skin blood oxygen saturation monitoring, Ulidis Rubins, Zbignevs Marcinkevics, Janis Cimurs, Māra Lange, Institute of Atomic Physics and Spectroscopy, Univ. of Latvia (Latvia); and Dmitry S. Raupov, Ivan A. Bratchenko, Dmitry Viktorovich Kornilin, Vyacheslav I. Kochubey, Saratov State Univ. (Russian Federation) and National Research Tomsk State Univ. (Russian Federation). [10685-143]

Assessment of oxidative stress in liver grafts using time-resolved fluorescence spectroscopy, Marcelo Saito Nogueira, Alessandro Cosci, Instituto de Física de São Carlos, Univ. de São Paulo (Brazil); Cristina Kurschi D.D.S., Instituto de Física de São Carlos (Brazil). [10685-144]

Studies of normal and glycerated hemoglobin refraction, fluorescence and Raman scattering, Ekaterina N. Lazareva, Saratov State Univ. (Russian Federation) and Immanuel Kant Baltic Federal Univ. (Russian Federation) and National Research Tomsk State Univ. (Russian Federation); Andrey Y. Zybun, Ilya A. Samusenko, Immanuel Kant Baltic Federal Univ. (Russian Federation); and Valeriy P. Zakharov, Samara Univ. (Russian Federation). [10685-145]

Application of portable fluorescence reader for evaluation of skin autofluorescence in patients with age-related macular degeneration and cataract, Ivan A. Bratchenko, Vladimir N. Grishanov, Dmitry N. Kornilin, Valery P. Zakharov, Samara Univ. (Russian Federation); Peter A. Lebedev, Igor V. Malov, Elena S. Pahenitsina, Elena V. Baykina, Samara State Medical University (Russian Federation). [10685-146]

Optical design improvement for noncontact skin cancer diagnostic device, Emilija V. Plorina, Institute of Atomic Physics and Spectroscopy, Univ. of Latvia (Latvia); Dmitrij Bliznuka, Riia Technical Univ. (Latvia); Alexey Lihachev, Aleksandrs Derjabo, Ilze Lihacova, Marta Lange, Institute of Atomic Physics and Spectroscopy, Univ. of Latvia (Latvia). [10685-147]


Raman spectral features of human body fluids from the patients with oral cancer, Anand Srivastava, Indian Institute of Technology Delhi (India); Chun Ho Tan, Wan Maryam Wan Ahmad Kamil, Mohd Zubir Mat Lykina, Samara Regional Clinical Oncology Dispensary (Russian Federation); and Valery P. Zakharov, Samara Univ. (Russian Federation). [10685-149]

Dynamical and structural properties of flavin adenine dinucleotide in aqueous solutions, Ines Delfino, Univ. degli Studi della Tuscia (Italy); Marianna Portaccio, Maria Lepore, Univ. degli Studi di Napoli Federico II (Italy); and Luca De Stefano, Marta Pintor, Istituto per la Microelettronica e Microsistemi (Italy); and Ivo Rendina, Istituto per la Microelettronica e Microsistemi (Italy). [10685-150]

Effect of excitation wavelength and light exposure time on quantum dots luminescent properties, Julie Hotchamps, Univ. de Liège (Belgium); and Thomas Noblet, Christophe Humbert, Univ. Paris-Sud 11 (France). [10685-151]

On-the-fly respiratory cycle estimation method based on photoplethysmography waveform morphology analysis, Sylwestor Nowocień, Wrocław Univ. of Science and Technology (Poland). [10685-152]

Raman spectra comparative analysis of human tissues excited at 785 nm using LDPLS and PLS, Nikola N. Artemyev, Andrey A. Moryatov, Samara State Medical University (Russian Federation); and Evgeny A. Zherebtsov, Aston Univ. (United Kingdom). [10685-153]

Study of the effectiveness of sunscreen lotion under long-term exposure to ultraviolet, Chuon Ho Tan, Bishweshwar Prasad Vyas, Michael W. Lam, Mohammad Vahid, Mohamed Zuhair Mahfuz, Ahmad Fairuz Omar, Univ. Sains Malaysia (Malaysia). [10685-154]

Visible light communication-based safe and accurate healthcare system for EGG using a cell phone, Anand Srivastava, Indian Institute of Technology Delhi (India). [10685-155]

Cardiovascular effects of mannitol infusion: a comparison study performed on mouse and human, Teemu S. Myllölä, Mika Kaakinen, Aleksandr Zelenev, Erdal Ural, Vesa Korhonen, Matti Huotari, Univ. of Oulu (Finland); Outi Kuttinen M.D., Oulu Hospital (Finland); Lauri Eklund, Univ. of Oulu (Finland); Kiviniemi M.D., Oulu Hospital (Finland). [10685-156]

Strategic combination of antimicrobial photodynamic therapy with mathematical tools to eradicate Enterococcus faecalis, Janice R. Peruski, Eduardo A. V. da Silva, Unicamp (Brazil); and Raimondas Ciems, Westsächsische Hochschule Zwickau (Germany); and Florian Rudek, Clemens Richter, Bryan Nelesen, Westsächsische Hochschule Zwickau (Germany) and Fraunhofer IWS Dresden (Germany) and Technische Universität Dresden (Germany); and Chen Chen, Fraunhofer IWS Dresden (Germany). [10685-157]

Verification of NADH content measurements by portable optical diagnostic system in living brain tissue, Evgeny Zherebtsov, Aston Univ. (United Kingdom); Plamena Angelieva, Univ. College London (United Kingdom); Sergei G. Sokolovskiy, Aston Univ. (United Kingdom); Andrey Abramov, Univ. College London (United Kingdom); and Edik U. Rafalov, Aston Univ. (United Kingdom). [10685-158]

Enhanced Savitzky-Golay smoothing for optimal denoising of Raman spectra, Sinead Bart, Tomas Ward, Bryan Hennelly, National Univ. of Ireland, Maynooth (Ireland). [10685-159]

Precision farming solutions powered by laser applications, Christian Marx, Laser Zentrum Hannover e.V. (Germany). [10685-160]

2D photonic crystal membranes for biosensing applications, Nestor E. Chippa, K. Shrinivasan, K. L. Narasimhan, Indian Institute of Science (India). [10685-161]

Nonlinear microscopy differentiates normal from pathobiological breast tissue, Evangelia Gavriotaki, George Filipidis, Foundation for Research and Technology-Hellas (Greece); Sofia Agelaki, Savvas Bosvassinos, Vassilios Georgoulas, Maria N. Tsirtsi, Irene Athanassakis, Univ. of Crete (Greece). [10685-162]

Diomiate nanovectors uptake in cancer cells: a Raman imaging study, Stefano Manfio, Consiglio Nazionale delle Ricerche (Italy); Nunzia Migliaccio, Univ. degli Studi di Napoli Federico II (Italy); Monica Terracciano, Michela Napoliottino, Istituto di la Microelettronica e Microsistemi (Italy); and Lauro D. Fattore, Univ. Martucci, Univ. degli Studi di Napoli Federico II (Italy); Luca De Stefano, Ivo Rendina, Istituto per la Microelettronica e Microsistemi (Italy); and Anna Chiara De Luca, Consiglio Nazionale delle Ricerche (Italy); Annalisa Lamberti, Univ. degli Studi di Napoli Federico II (Italy); Iara Rea, Istituto per la Microelettronica e Microsistemi (Italy). [10685-163]

Investigating the progression of oral cancer using Raman spectroscopy, Nikki Kuhn, Indian Institute of Science (India); Shaili S. Nazer, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Rekha V. Kumar, Sree Chitra Umapathy, Indian Institute of Science (India). [10685-164]

Insights into phenotypic antibiotic resistance in E. coli: a Raman spectroscopic approach, Tur A. Urvaa, Dipankar Nandi, Siva Umapathy, Indian Institute of Science (India). [10685-165]

Selective detection of MMP-9 using peptide fluorescent gold nanocolloid for metastatic cancer imaging, Minhee Ku, Jaemoon Yang, Yonsei Univ. College of Medicine (Korea, Republic of). [10685-166]

Dynamical and structural properties of flavin adenine dinucleotide in aqueous solutions, Ines Delfino, Univ. degli Studi della Tuscia (Italy); Rosario Esposito, Univ. degli Studi di Napoli Federico II (Italy); Marriana Portaccio, Maria Leopre, Univ. degli Studi della Campania Luigi Vanvitelli (Italy). [10685-167]

Laser Doppler spectrum decomposition applied in diagnostics of microcirculatory disturbances, Igor O. Kozlov, Orel State Univ. named after I.S. Turgenev (Russian Federation); Evgeny A. Zherebtsov, Aston Univ. (United Kingdom); Victor V. Dremin, Elena V. Zharkikh, Andrey V. Dunaev, Orel State Univ. named after I.S. Turgenev (Russian Federation); and Edik U. Rafalov, Aston Univ. (United Kingdom). [10685-168]

Application of the fluorescence spectroscopy for the analysis of the state of abdominal cavity organs tissues in mini-invasive surgery, Ksenia Kandurova, Victor V. Dremin, Orel State Univ. named after I.S. Turgenev (Russian Federation); Evgeny A. Zherebtsov, Aston Univ. (United Kingdom); Andriy V. Dunaev, Orel State Univ. named after I.S. Turgenev (Russian Federation); and Andrii V. Maminshch, Alexandr L. Alyanov, Orel State Univ. named after I.S. Turgenev (Russian Federation). [10685-169]
Imaging VII: Fluorescence
Session Chair: Valery V. Tuchin,
Saratov State Univ. (Russian Federation)

15:45: Structured illumination for live cell microscopy (Invited Paper),
Herbert Schneckenburger, Verena Richter, Michael Wagner, Mathis Piper,
Hochschule Aalen (Germany). .................................................. [10685-93]

16:10: Novel fluorescent oxides provide insight into the dynamics of
nanoparticle-mediated drug uptake from the gastro-intestinal tract,
Waldemar Lipinski, Jaroslaw Kaszewski, Zdzislaw Gajewski,
Michal M. Godlewski, Warsaw Univ. of Life Sciences SGGW (Poland);
Marek Godlewski, Institute of Physics, Polish Academy of Sciences
(Poland). ................................................................. [10685-94]

16:25: Synchronous fluorescence spectroscopy with and without
polarization sensitivity for colorectal cancer differentiation,
Tsanislava I. Genova-Hristova, Ekaterina G. Borisova, Institute of Electronics
(Bulgaria); Nikolay Penkov M.D., Univ. Hospital “Tsaritsa Yoanna-ISUL”
(Bulgaria); Borislav Vladimirov M.D., Univ. Hospital “Tsaritsa Yoanna-ISUL”
(Bulgaria); Latchez Avramov, Institute of Electronics (Bulgaria) . . . [10685-95]

16:40: Multimodal non-gadolinium oxide nanoparticles for MRI and
fluorescence labelling, Jaroslaw Olszewski, Michal M. Godlewski,
Paula Kielbik, Jaroslav Kaszewski, Warsaw Univ. of Life Sciences SGGW
(Poland); Bartlomiej S. Witkowski, Institute of Physics, Polish Academy of
Sciences (Poland); Zdzislaw Gajewski, Warsaw Univ. of Life Sciences SGGW
(Poland). ................................................................. [10685-96]

16:55: Measurement of skin autofluorescence by fluorescent
spectrometry for diabetes diagnostics and control,
Yulia Kononova, Saint Petersburg National Research Univ. of Information Technologies, Mechanics
and Optics (Russian Federation) and Almazov National Medical Research Ctr. (Russian Federation); Anastasiya Arkhipova, Almazov National Medical Research Ctr. (Russian Federation); Garry Papayan, Saint Petersburg National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation) and Almazov National Medical Research Ctr. (Russian Federation) and Pavlov First Saint Petersburg State Medical Univ. (Russian Federation); Mikhail Khodzitsky, Saint Petersburg National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation); Alina Babenko, Elena Grineva, Saint Petersburg National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation) and Almazov National Medical Research Ctr. (Russian Federation). .................................................. [10685-97]

17:10: Biodegradable, fluorescent oxide nanocrystals for application in
biology and medicine, Paula Kielbik, Warsaw Univ. of Life Sciences SGGW
(Poland); Jaroslav Kaszewski, Warsaw Univ. of Life Sciences SGGW (Poland); Jaroslav Kaszewski, Institute of Physics, Polish Academy of Sciences
(Poland); Ewelina Wolska-Kornio, Bartlomiej S. S. Witkowski, Institute of
Physics, Polish Academy of Sciences (Poland); Mikolaj A. Gralak, Zdzislaw
Gajewski, Warsaw Univ. of Life Sciences SGGW (Poland); Marek Godlewski,
Institute of Physics, Polish Academy of Sciences (Poland); Michal M.
Godlewski, Warsaw Univ. of Life Sciences SGGW (Poland). ............... [10685-98]

17:25: Simple fibre-based dispersion management for two-photon
excited fluorescence imaging through an endoscope, Dominik Marti,
Konstantinos Dimopoulos, DTU Risø Campus (Denmark); Bjørn-Ole Meyer,
Peter E. Andersen, DTU Fotonik (Denmark) ......................... [10685-99]

17:40: Multispectral fibre endoscope imaging system for enhanced
visualisation of smartprobes, Helen Parker, The Univ. of Edinburgh (United Kingdom); James M. Stone, Univ. of Bath (United Kingdom); Tom Speight, The Univ. of Edinburgh (United Kingdom); Robert R. Thomson, Heriot-Watt Univ. (United Kingdom); Kevin Dhalilaw M.D., Nikola Krstajić, Michael G. Tanner, The Univ. of Edinburgh (United Kingdom) ................... [10685-100]
Silicon Photonics: from Fundamental Research to Manufacturing

Conference Chairs: Roel G. Baets D.D.S., Univ. Gent (Belgium); Peter O’Brien, Tyndall National Institute (Ireland); Laurent Vivien, Ctr. de Nanosciences et de Nanotechnologies (France)

Programme Committee: Frédéric Boué, STMicroelectronics (France); Jean-Marc Fédéli, CELA-LETI (France); José Capmany Francoy, Univ. Politécnica de Valencia (Spain); Frederic Y. Gardes, Univ. of Southampton (United Kingdom); Martin J. R. Heck, Aarhus Univ. (Denmark); Lorenzo Pavesi, Univ. degli Studi di Trento (Italy); Stefano Pelli, Istituto di Fisica Applicata “Nello Carrara” (Italy); Andrew W. Poon, Hong Kong Univ. of Science and Technology (Hong Kong, China); Joyce K. Poon, Univ. of Toronto (Canada); Miloš A. Popović, Boston Univ. (United States); Stefan F. Preble, Rochester Institute of Technology (United States); Jeremy Witzens, RWTH Aachen Univ. (Germany); Dan-Xia Xu, National Research Council Canada (Canada); Koji Yamada, National Institute of Advanced Industrial Science and Technology (Japan); Zhiping Zhou, Peking Univ. (China).

MONDAY 23 APRIL

MONDAY HOT TOPICS

LOCATION: SCHWEITZER AUDITORIUM  MON 9:00 TO 11:00

Hot Topics Session I

9:00 to 9:15: Opening Remarks and Awards Presentation
9:15 to 9:25: Welcome
9:25 to 9:30: Introduction to Hot Topics
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale

For additional details please visit page 6.

Coffee Break

LOCATION: SALON 1  MON 11:00 TO 11:25

OPENING REMARKS

SESSION 1

LOCATION: SALON 1  MON 11:30 TO 13:00

Optical Transceivers and Manufacturing

Session Chair: Roel G. Baets D.D.S., Photonics Research Group (Belgium)

11:30: Advanced optical transceivers based on III-V-on-silicon photonic integrated circuits (Invited Paper), Günther Roelkens, Univ. Gent (Belgium). [10686-1]

12:00: Path for the silicon photonic transceiver to sit on the host-ASIC-substrate: III-V and 3D integration (Invited Paper), Sylvie Menez, CELA-LETI (France). [10686-2]

12:30: Silicon photonics in 300mm: recent results and new applications (Invited Paper), Antonio Fincato, Marco Piazza, P. Orlandi, STMicroelectronics (Italy); Angelica Simbula, Univ. degli Studi di Pavia (Italy); Enrico Temporiti, STMicroelectronics SRL (Italy); Frédéric Boeuf, Charles Baudot, Sébastien Crémier, STMicroelectronics S.A. (France). [10686-3]

Lunch Break

SESSION 2

LOCATION: SALON 1  MON 14:10 TO 15:30

Emerging Concepts and Technologies I

Session Chair: Peter O’Brien, Tyndall National Institute (Ireland)

14:10: Single atom electronics and photonics (Invited Paper), Juerg Leuthold, Alexandros Embaros, Bojin Cheng, Mathieu Luysier, Samuel Andermatt, Fabian Duci, ETH Zurich (Switzerland); Thomas Schimmel, Karlsruher Institut für Technologie (Germany). [10686-4]

14:40: Reconfigurable photonics enabled by optical phase change materials (Invited Paper), Yifei Zhang, Massachusetts Institute of Technology (United States); Jeffrey B. Chou, MIT Lincoln Lab. (United States); Qihang Zhang, Junying Li, Massachusetts Institute of Technology (United States); Huashan Li, Sun Yat-Sen Univ. (China); Qingyang Du, Massachusetts Institute of Technology (United States); Anupama Yadav, Yunpeng Kong, Cesar Blanco, Univ. of Central Florida (United States); Hukai Zhong, Mikhail Y. Shalaginov, Jeffrey C. Grossman, Massachusetts Institute of Technology (United States); Richard Soref, Univ. of Massachusetts Boston (United States); Vladimir Liberman, MIT Lincoln Lab. (United States); Kathleen Richardson, Univ. of Central Florida (United States); Juejun Hu, Tian Gu, Massachusetts Institute of Technology (United States). [10686-5]

15:10: High-speed characteristics of strain-induced pockels effect in silicon, Matthias Berciano, Guillaume Marcaud, Xavier Le Roux, Paul Crozat, Carlos Alonso-Ramos, Daniel Benedikovic, Delphine Marris-Morini, Eric Cassan, Ctr. de Nanosciences et de Nanotechnologies (France); Pedro Dasmas, Ctr. de Nanosciences et de Nanotechnologies (France) and Caliopa (Belgium); Laurent Vivien, Ctr. de Nanosciences et de Nanotechnologies (France). [10686-6]

Coffee Break

SESSION 3

LOCATION: SALON 1  MON 16:00 TO 17:10

Emerging Concepts and Technologies II

Session Chair: Peter O’Brien, Tyndall National Institute (Ireland)

16:00: Photonic wirebonding and 3D nanoprinting in optical packaging: from research to manufacturing (Invited Paper), Christian Koos, Karlsruher Institut für Technologie (Germany). [10686-7]

16:30: Coherent absorption with plasmonics nanoantennas on SOI racetrack resonator, Bigen Chen, Roman Bruck, Univ. of Southampton (United Kingdom); Nicholas J. Dinsdale, Optoelectronics Research Ctr., Univ. of Southampton (United Kingdom); David J. Thomson, Goran Z. Mashanovich, Graham T. Reed, Otto L. Muskens, Univ. of Southampton (United Kingdom). [10686-8]

16:50: Demonstration of photonic digital-to-analog conversion utilizing a single silicon Mach-Zehnder modulator, Guangwei Cong, National Institute of Advanced Industrial Science and Technology (Japan); Shota Kita, Kengo Nakazi, NTT Nanophotonics Ctr. (Japan) and NTT Basic Research Labs. (Japan); Takashi Inoue, National Institute of Advanced Industrial Science and Technology (Japan); Atsushi Shinya, NTT Nanophotonics Ctr. (Japan) and NTT Basic Research Labs. (Japan); Makoto Okano, Yuriho Maegami, Noritsugu Yamamoto, Moritumi Ohno, National Institute of Advanced Industrial Science and Technology (Japan); Masaya Notomi, NTT Nanophotonics Ctr. (Japan) and NTT Basic Research Labs. (Japan); Koji Yamada, National Institute of Advanced Industrial Science and Technology (Japan). [10686-9]
CONFERENCE 10686

SESSION 7

Mode Diversity and Light Coupling
Session Chair: Peter O’Brien, Tyndall National Institute (Ireland)

13:30: Mode selection switch using multimode interference for on-chip optical interconnects (Invited Paper), Rubana Prill, Odile Liboiron-Ladouceur, McGill Univ. (Canada) .................................................. [10686-25]

14:00: Mode converters based on periodically perturbed waveguides for mode division multiplexing, Carlos Alonso-Ramos, Univ. Paris-Sud 11 (France); Delphine Marris-Morini, Vladyslav Vakarin, Xavier Le Roux, Laurent Vivien, Ctr. de Nanosciences et de Nanotechnologies (France) ................................................................. [10686-26]

14:20: Vertically-bent silicon waveguide for high-efficiency optical fiber coupling (Invited Paper), Youichi Sakakibara, Yuki Atsumi, Emiko Omoda, Tomoya Yoshida, National Institute of Advanced Industrial Science and Technology (Japan) .................................................. [10686-27]

14:50: Low-loss grating-coupled optical interfaces for large volume fabrication with deep ultraviolet optical lithography, Daniel Benedikovic, Ctr. de Nanosciences et de Nanotechnologies (France); Carlos Alonso-Ramos, Univ. Paris-Sud 11 (France); Sylvain Guerber, STMicroelectronics S.A. (France); Diego Pérez-Galacho, Vladyslav Vakarin, Xavier Le Roux, Guillaume Marcaud, Eric Cassan, Delphine Marris-Morini, Univ. Paris-Sud 11 (France); Pavel Cheben, National Research Council Canada (Canada); Frédéric Boeuf, Charles Baudot, STMicroelectronics S.A. (France); Laurent Vivien, Univ. Paris-Sud 11 (France) ................................................................. [10686-28]

15:40: Coffee Break ...................................... Wed 15:10 to 15:40

SESSION 8

LOCATION: SALON 2 ............................... WED 15:40 TO 17:30

Wavelength Diversity Devices and Systems Session Chair: Andrea I. Melloni, Politecnico di Milano (Italy)

15:40: Silicon nitride photonic circuits for phase array antennas (Invited Paper), Chris G. H. Rizosztejfer, Univ. Twente (Netherlands) ................................................................. [10686-29]

16:10: Low crosstalk and wavelength tunable silicon arrayed waveguide gratings for on-chip optical multiplexing, Claudio Castellano, Stefano Tondini, Mattia Mancinelli, Univ. degli Studi di Trento (Italy); Christophe Kopp, CEA-LETI (France); Lorenzo Pavesi, Univ. degli Studi di Trento (Italy) ................................................................. [10686-30]

16:30: Integrated SiN on SOI dual photonic platform for advanced datacom solutions, Sylvain Guerber, STMicroelectronics S.A. (France); Carlos Alonso-Ramos, Daniel Benedikovic, Diego Pérez-Galacho, Xavier Le Roux, Ctr. de Nanosciences et de Nanotechnologies (France); Nathalie Vulliet, Sébastien Crémer, Laurene Babaud, Jonathan Plancho, Daniel Benoît, Paul Chaïntraine, François Leverd, Delia Ristoiu, STMicroelectronics S.A. (France); Philippe Grosse, MINATEC (France); Delphine Marris-Morini, Ctr. de Nanosciences et de Nanotechnologies (France); Charles Baudot, STMicroelectronics S.A. (France); Laurent Vivien, Ctr. de Nanosciences et de Nanotechnologies (France); Frédéric Boeuf, STMicroelectronics S.A. (France) ................................................................. [10686-31]

16:50: Enhanced hybrid Si-SiN photonic platform and performances of passive components for CWDM applications, Quentin Wilmart, Dalvíd Fowler, Corrado Sciancalepore, Karim Hassan, Laetitia Adelmé, Stéphanie Garcia, Daniel Robin-Brosse, Stéphane Mahoulte, Ségolène Olivier, CEA-LETI (France) ................................................................. [10686-32]

17:10: Silicon photonic microring resonator dedicated to an optoelectronic oscillator loop, Do Thi Phuong, Ecole normale supérieure Paris-Saclay (France); Carlos Alonso-Ramos, Xavier Le Roux, Diego Pérez-Galacho, Laurent Vivien, Ctr. de Nanosciences et de Nanotechnologies (France); Isabelle Ledoux-Rak, Bernard Jouvet, Ecole normale supérieure Paris-Saclay (France); Eric Cassan, Ctr. de Nanosciences et de Nanotechnologies (France) ................................................................. [10686-33]

18:00: Coffee Break ...................................... Wed 17:10 to 17:40

SESSION 9

LOCATION: SALON 2 ............................... WED 15:40 TO 17:30

Reconfigurable and Tunable Photonic Devices Session Chair: Fabrice Raineri, Lab. de Photonique et de Nanostructures (France)

13:30: Harnessing photonic integrated circuits (Invited Paper), Andrea I. Melloni, Politecnico di Milano (Italy) ................................................................. [10686-34]

14:00: Automatic alignment of photonic components of massive optical switch to ITU channels, Ashghak Chalyan, Univ. degli Studi di Trento (Italy); Maria Kafesaki, Foundation for Research and Technology-Hellas (Greece); Costas Soukoulis, Ames Lab., Iowa State Univ. of Science and Technology (United States); Angela C. Tasolamprou, Foundation for Research and Technology-Hellas (Greece); Thomas Koschny, Ames Lab., Iowa State Univ. of Science and Technology (United States); Maria Kafesaki, Foundation for Research and Technology-Hellas (Greece); Costas Soukoulis, Ames Lab., Iowa State Univ. of Science and Technology (United States) and Foundation for Research and Technology-Hellas (Greece) ................................................................. [10686-35]

15:00: Silicon photonic crystal beam steering and frequency splitting at telecom wavelengths based on the manipulation of surface states, Anna C. Tasolamprou, Foundation for Research and Technology-Hellas (Greece); Thomas Koschny, Ames Lab., Iowa State Univ. of Science and Technology (United States); Maria Kafesaki, Foundation for Research and Technology-Hellas (Greece); Costas Soukoulis, Ames Lab., Iowa State Univ. of Science and Technology (United States) and Foundation for Research and Technology-Hellas (Greece) ................................................................. [10686-42]
CONFERENCE 10687
LOCATION: SALON 8

Tuesday–Thursday 24–26 April 2018 • Proceedings of SPIE Vol. 10687

Organic Electronics and Photonics: Fundamentals and Devices

Conference Chairs: Sebastian Reineke, TU Dresden (Germany); Koen Vandewal, TU Dresden (Germany)
Programme Committee: Artem A. Bakulin, Imperial College London (United Kingdom); David Beljonne, Univ. de Mons (Belgium); Vladimir Dyakonov, Julius–Maximilians-Universität Würzburg (Germany); Peter Ho, National Univ. of Singapore (Singapore); Kristaana Neyts, Univ. Gent (Belgium); Markus Clark Scharber, Johannes Kepler Univ. Linz (Austria); Franky So, North Carolina State Univ. (United States); Natalie Stingelin, Georgia Institute of Technology (United States); He Yan, Hong Kong Univ. of Science and Technology (Hong Kong, China); Eli Zysman-Colman, Univ. of St. Andrews (United Kingdom)

TUESDAY 24 APRIL

OPENING REMARKS
LOCATION: SALON 8 ................................................ 10:30 TO 10:40

SESSION 1
LOCATION: SALON 8 ........................................ TUE 10:40 TO 12:40
Thermally Activated Delayed Fluorescence for OLEDs I
Session Chair: Sebastian Reineke, TU Dresden (Germany)

10:40: Recent progress in highly efficient TADF emitter materials for OLEDs (Invited Paper), Sebastian Dück, David Ambrosek, Thomas Baumann, Cynora GmbH (Germany) ................................................... [10687-1]
11:20: Deep blue electroluminescence from D-A compounds with oxadiazole acceptor units exhibiting thermally activated delayed fluorescence, Simonas Krotkus, Univ. of St Andrews (United Kingdom); Michael Y. Wong, Gordon Hedley, David B. Cora, Alexandra N. Zawadzka, Caroline Murawski, Malte C. Gather, Univ. of St Andrews (United Kingdom); Yoann Olivier, David Beljonne, Univ. de Mons (Belgium); Ibor D. W. Samuel, Eli Zysman-Colman, Univ. of St. Andrews (United Kingdom) ................... [10687-2]
11:40: Deep blue organic TADF emitters for electroluminescent devices (Invited Paper), Eli Zysman-Colman, Univ. of St. Andrews (United Kingdom) ................... [10687-3]
12:20: On the nature of the singlet and triplet excitations mediating thermally activated delayed fluorescence, Yoann Olivier, Univ. de Mons (Belgium); Brett Yarash, Univ. of California, Santa Barbara (United States); Luca Muccioli, Univ. degli Studi di Bologna (Bologna); Gabriele D’Avino, Univ. Grenoble Alpes (France) and CNRS (France); Monika Moraí, Univ. de Castilla-La Mancha (Spain); Oleksandr Mikhenko, Univ. of California, Santa Barbara (United States); Juan-Carlos Garcia, Univ. de Alicante (Spain); Chihaya Adachi, Kyushu Univ. (Japan); Thuc-Quyen Nguyen, Univ. of California, Santa Barbara (United States); David Beljonne, Univ. de Mons (Belgium) ................... [10687-3]

Lunch/Exhibition Break ........................................ TUE 12:40 TO 14:00

SESSION 2
LOCATION: SALON 8 ........................................ TUE 14:00 TO 16:00
Thermally Activated Delayed Fluorescence for OLEDs II
Session Chair: Sebastian Reineke, TU Dresden (Germany)

14:00: Ultrafast reverse intersystem crossing and 100% PLOY in the same TADF molecule, rally! (Invited Paper), Andrew P. Monkman, Durham Univ. (United Kingdom) ................... [10687-5]
14:40: Warm-white hybrid emission from TADF and phosphorescence and its application in OLEDs, Ludwig Popp, Paul Kleine, TU Dresden (Germany); Ramunas Lygaitis, Kaunas Univ. of Technology (Lithuania); Reinhard Scholz, Simone Lenk, Sebastian Reineke, TU Dresden (Germany) ................... [10687-6]
15:00: Spin states in organic light emitting diodes (Invited Paper), Vladimir Dyakonov, Andreas Sperlich, Nikolai Bunzmann, Sebastian Weillenseel, Ljudmila Kudriashova, Julius-Maximilians-Universität Würzburg (Germany) ................... [10687-7]
15:40: Kinetic Monte Carlo simulation studies of the efficiency and rolloff of 3rd and 3.5th generation TADF-based OLEDs, Reinier Coehoorn, Peter A. Bobbert, Technische Univ. Eindhoven (Netherlands); Stefano Gottardi, Siebe L. M. van Mensfoort, Harm van Eersel, Simbeyond B.V. (Netherlands) ................... [10687-8]

Coffee Break ........................................... TUE 16:00 TO 16:30

TUESDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ........................... TUE 16:30 TO 18:05

16:30 to 16:35: Introduction
Francis Berghmans, Vrije Univ. Brussel, Belgium

16:35 to 17:20: Coherent combination of fiber amplified ultrafast laser pulses
Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany

17:20 to 18:05: 2D materials and their heterostructures: fundamentals, applications and prototypes
Frank Koppens, ICFO-The Institute of Photonic Sciences, Spain

For additional details, please see page 7.

WEDNESDAY 25 APRIL

SESSION 3
LOCATION: SALON 8 ........................................ WED 08:30 TO 10:30
Organic Photovoltaics and Photodetectors I
Session Chairs: Vladimir Dyakonov, Julius–Maximilians-Universität Würzburg (Germany); Koen Vandewal, TU Dresden (Germany)

8:30: Morphology in dip-coated blend films for photovoltaics studied by static and dynamic fluorescence, Jan van Stam, Leif Ericsson, Dargie Deribew, Ellen Moons, Karlstad Univ. (Sweden) ................... [10687-9]
8:50: The triplet-pair state in singlet fission materials (Invited Paper), Jenny Clark, University of Sheffield (United Kingdom) ................... [10687-10]
9:30: Diketopyrrolopyrrole-based polymer solar cells: effect of alkyl branching point on phase purity, Rishi Shivhare, TU Dresden (Germany); Takuya Tsuda, Leibniz-Institut für Polymerforschung Dresden e.V. (Germany); Koen Vandewal, Stefan Mannsfeld, TU Dresden (Germany); Anton Kiriy, Leibniz-Institut für Polymerforschung Dresden e.V. (Germany) ................... [10687-11]
9:50: Nonfullerene organic solar cells: importance of molecular interaction and vitrification (Invited Paper), Harald W. Ade, North Carolina State Univ. (United States) ................... [10687-12]

Coffee Break ........................................... Wed 10:30 TO 11:00

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CONFERENCE 10687

SESSION 4  SESSION 5

LOCATION: SALON 8 ............................................. WED 11:00 TO 12:40
Organic Photovoltaics and Photodetectors II
Session Chairs: Vladimir Dyakonov, Julius-Maximilians-Univ. Würzburg (Germany); Koen Vandewal, TU Dresden (Germany)
11:00: Charge generation in bilayer polymer:non-fullerene solar cells (Invited Paper), Natalie Banerji, Univ. Bern (Switzerland); Yufei Zhong, Univ. of Bern (Switzerland); Martina Causa, Julien Réhault, Lisa Peterhans, Univ. Bern (Switzerland); Johannes Benduhn, Koen Vandewal, TU Dresden (Germany); Erjun Zhou, National Ctr. for Nanoscience and Technology of China (China).  
[10687-13]
11:40: Do triplet excited states impact nonradiative voltage losses in organic solar cells?, Johannes Benduhn, TU Dresden (Germany); Fortunato Pietro, Univ. Potsdam (Germany); Christian Körner, TU Dresden (Germany); Dieter Neher, Univ. Potsdam (Germany); Donato F. Spotore, Koen Vandewal, TU Dresden (Germany).  
[10687-14]
12:00: Nonequilibrium and equilibrium operation of organic disordered semiconductor devices, Andrea Hitzenberger, TU Dresden (Germany); Dieter Neher, Univ. Potsdam (Germany); Karl Leo, TU Dresden (Germany).  
[10687-15]
12:20: A single component organic photovoltaic cell based on oligothiophene-fullerene conjugate, Han Young Woo, Korea Univ. (Korea, Republic of).  
[10687-16]
Lunch/Exhibition Break ........................................... Wed 12:40 to 13:50

LOCATION: SALON 8 ............................................. WED 13:50 TO 15:30
Organic Photovoltaics and Photodetectors III
Session Chairs: Vladimir Dyakonov, Julius-Maximilians-Univ. Würzburg (Germany); Koen Vandewal, TU Dresden (Germany)
13:50: Photo-current conversion in non-fullerene solar cells (Invited Paper), Nicola Gasparini, Xin Song, Joel Troughton, Derya Baran, King Abdullah Univ. of Science and Technology (Saudi Arabia).  
[10687-17]
14:30: Fast organic near-infrared detectors, Donato F. Spotore, Sascha Ulbrich, Bernhard Siegmund, Johannes Benduhn, Koen Vandewal, TU Dresden (Germany).  
[10687-18]
14:50: Organic photodetectors for artificial retinal implants, Giulio Simone, Dario Di Carlo, Stefano Meskers, René Janssen, Technische Univ. Eindhoven (Netherlands); Gerwin Gelincx, Technische Univ. Eindhoven (Netherlands).  
[10687-19]
15:10: Organic photovoltaics in industry: successes and challenges to enable production of commercially viable modules, Ignasi Burque, Merck Chemicals Ltd. (United Kingdom).  
[10687-54]
Coffee Break .................................................... Wed 15:30 to 16:00

SESSION 6

LOCATION: SALON 8 ............................................. WED 16:00 TO 17:40
Organic Optoelectronic and Photonic Devices
Session Chairs: Wolfgang Brütting, Univ. Augsburg (Germany); Sebastian Reineke, TU Dresden (Germany)
16:00: How microstructure defines function in organic electronics: morph A instead of B, Bezzi, U. de Mons (Belgium).  
[10687-20]
16:40: Wide field-of-view fluorescent antenna for visible light communications beyond the étendue limit, Pavlos Manousiadis, Univ. of St. Andrews (United Kingdom); Sujan Rajbhandari, Coventry Univ. (United Kingdom); Rahmat Mulyawan, Univ. of Oxford (United Kingdom); Dimali A. Vithanage, Univ. of St. Andrews (United Kingdom); Hyunchae Chun, Grahame Faulkner, Dominic C. O’Brien, Univ. of Oxford (United Kingdom); Graham A. Turnbull, Univ. of St. Andrews (United Kingdom); Stephen Collins, Univ. of Oxford (United Kingdom).  
[10687-21]
17:00: Room temperature polariton lasing from strongly coupled pentafufluorene in a planar microcavity, Sai Kiran Rajendran, Arunandan Kumar, Arvydas Ruseckas, Mengjie Wei, Jonathan Keeling, Graham A. Turnbull, Ior D. W. Samuel, Univ. of St. Andrews (United Kingdom).  
[10687-22]
17:20: The effects of being thick: light-emitting electrochemical cells and solution processing, E. Mattias Lindh, Peter Lundberg, Thomas Lanz, Uméa Univ. (Sweden); Jonas Mindemark, Uppsala Univ. (Sweden); Ludvig Edman, Uméa Univ. (Sweden).  
[10687-23]

WEDNESDAY POSTER SESSION

LOCATION: HALL RHIN ............................................. WED 17:45 TO 19:30
Conference attendees are invited to attend the Photonics Europe poster session on Wednesday 17:45 to 19:30. Posters will be on display after 10.00 Wednesday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions.
Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/334963.xml and on page 10.

Hybrid light-emitting devices based on zinc oxide, titanium dioxide and tris(carboxytrithiophene) terpolymer arrays as the electron transporting layers, Sheng-Hsiang Yang, Wei-Chi Chen, Tsung-Yan Tsai, Chun-Kai Chang, National Chiao Tung Univ. (Taiwan).  
[10687-36]
A white random laser, Yu-Ming Liao, Shu-Wei Cheng, Wei-Cheng Liao, Shih-Yao Lin, Wei-Ju Lin, Cheng-Han Chang, Hung-I Lin, Paciayar Perumal, Yang-Fang Chen, National Taiwan Univ. (Taiwan).  
[10687-37]
Optical and amplified spontaneous emission of neat films containing 2-cyanoacetic derivatives, Aivars Vembris, Julija Pervencica, Univ. of Latvia (Latvia); Elmars Zarins, Vaidis Koks, Riga Technical Univ. (Latvia).  
[10687-38]
Solution-processable green phosphorescent iridium(III) complexes bearing 3,3,3-triphenylpropionic acid fragment for use in OLED devices, Kaspars Traskovskis, Riga Technical Univ. (Latvia); Aivars Vembris, Univ. of Latvia (Latvia); Vaidis Koks, Riga Technical Univ. (Latvia).  
[10687-39]
Time-resolved excited and charge transport in donor-acceptor junction, Katalinaii Beltako, Nicola Cavassilas, Fabienne Michelini, Institut Matériaux Microélectronique Nanosciences de Provence (France).  
[10687-40]
Investigation of photoluminescence and amplified spontaneous emission properties of cyanoacetic acid derivative (KTB) in PVK amorphous thin films, Julija Pervencica, Aivars Vembris, Univ. of Latvia (Latvia); Elmars Zarins, Vaidis Koks, Riga Technical Univ. (Latvia).  
[10687-41]
3,3'-dicarbazole structural derivatives as charge transporting materials for use in OLED devices, Armanda Rudus, Kaspars Traskovskis, Elina Otkova, Riga Technical Univ. (Latvia); Aivars Vembris, Raitis Gribzovskis, Univ. of Latvia (Latvia); Vaidis Koks, Riga Technical Univ. (Latvia).  
[10687-42]
Design of an all-optical four bit binary to gray code converter based on beam interference principle in 2D photonic crystals, Sandip Swarnakar, Santosh Kumar, Sandeep Sharma, Santasi Kale, DIT Univ. (India).  
[10687-43]
Whispering gallery mode-assisted random lasing in dye-doped PVA coated silica microsphere, Priyanka S. Choubey, Shailendra K. Varshney, Shivkumar Bhakta B. N., Indian Institute of Technology Kharagpur (India).  
[10687-44]
Spectroscopic characterization of organic films for integrated photonics applications, Isis Maqueira-Albo, Politecnico di Milano (Italy); Marco Caironi, Istituto Italiano di Tecnologia (Italy); Francesco Morchetti, Politecnico di Milano (Italy).  
[10687-45]
Improved thermal and mechanical stability of small molecule donor polymer acceptor-based organic solar cells, Sora Oh, Chang Eun Song, Univ. of Science and Technology (Korea, Republic of) and Korea Research Institute of Chemical Technology, Seoul (Korea, Republic of).  
[10687-46]
Energy level determination of purine containing blue light emitting organic compounds, Raitis Gribzovskis, Aivars Vembris, Univ. of Latvia (Latvia); Armands Sebrs, Armands Sebrs, Zigriffs Kapilinskis, Maris Turks, Riga Technical Univ. (Latvia).  
[10687-47]
Refractive index profile characterization in polymer optical fibres using Raman spectroscopy, Mikel Asunde, Ignar Ayesta, Gotzon Aldabaldetxe, Iñaki Bikandi, Eneko Arrospide, Joseba Zubia, Univ. del País Vasco (Spain).  
[10687-48]
Stacked dual narrowband organic near-infrared photodetectors, Yazhong Wang, Zheng Tang, Bernhard Siegmund, Zafel Ma, Koen Vandewal, TU Dresden (Germany).  
[10687-49]
Efficient quantum dot light-emitting diodes, Shuming Chen, Southern Univ. of Science and Technology of China (China).  
[10687-50]
Coffee Break .......................... Thu 10:35 to 11:00

SESSION 7
LOCATION: SALON 8 .......................... THU 11:00 TO 12:00
Organic Light-emitting Devices I
Session Chairs: Andrew P. Monkman, Durham Univ. (United Kingdom); Sebastian Reineke, TU Dresden (Germany)
11:00: Flexible and highly segmented OLED for automotive applications, Hermann Bechert, Sebastian Wittmann, OSRAM OLED GmbH (Germany); Christoph J. Brabec, i-MEET (Germany); Thomas Wehls, OSRAM OLED GmbH (Germany) ........................ [10687-24]
11:20: Improving the thermal stability of organic light-emitting diodes by doping the electron transport layer with a reactive metal, Changmin Keum, Nils M. Kronenberg, Caroline Murawski, Kou Yoshida, Yali Deng, Wenbo Li, Mengjie Wei, Ilor D. W. Samuel, Malte C. Gather, Univ. of St. Andrews (United Kingdom) ........................ [10687-25]
11:40: The effect of exciton confinement on the efficiency loss due to triplet-triplet annihilation in OLEDs, Arnout Ligthart, Le Zhang, Technische Univ. Eindhoven (Netherlands); Harm van Eersel, Simbeyond, Arnout Ligthart, Le Zhang, Technische Univ. Eindhoven (Netherlands) ........................ [10687-26]
Lunch Break .......................... Thu 12:00 to 13:10

SESSION 8
LOCATION: SALON 8 .......................... THU 13:10 TO 15:10
Organic Light-emitting Devices II
Session Chairs: Andrew P. Monkman, Durham Univ. (United Kingdom); Sebastian Reineke, TU Dresden (Germany)
13:10: Molecular orientation as key parameter in organic optoelectronics (Invited Paper), Wolfgang Brütting, Univ. Augsburg (Germany) ........................ [10687-27]
13:50: Effect of matrix anisotropy on the apparent emitter orientation in OLED, Norbert Danz, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Nils Haase, Christof Pflumm, Antonia Morherr, Merck KGaA (Germany); Dirk Michaelis, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany) ........................ [10687-28]
14:10: Angular resolved photoluminescence from nonideal emission spots, Christian Hänsch, Sebastian Reineke, Simone Lenk, TU Dresden (Germany) ........................ [10687-29]
14:30: Optical design of OLEDs: from ultimate efficiency to sensor applications (Invited Paper), Seunghyup Yoo, Jinouk Song, Hyeomwoo Lee, Jaeho Lee, Eunhye Kim, KAIST (Korea, Republic of) ........................ [10687-30]
Coffee Break .......................... Thu 15:10 to 15:40

SESSION 9
LOCATION: SALON 8 .......................... THU 15:40 TO 17:40
Organic Light-emitting Devices III
Session Chairs: Andrew P. Monkman, Durham Univ. (United Kingdom); Sebastian Reineke, TU Dresden (Germany)
15:40: OLED light extraction in nanostructured OLEDs (Invited Paper), Franky So, North Carolina State Univ. (United States) ........................ [10687-31]
16:20: Organic light-emitting diodes as neurophotonics platform, Caroline Murawski, Andrew Morton, Changmin Keum, Yali Deng, Ilor D. W. Samuel, Stefan R. Pulver, Malte C. Gather, Univ. of St. Andrews (United Kingdom) ........................ [10687-32]
16:40: Improved light outcoupling of organic light-emitting diodes by combined optimization of thin film layers and external textures, Milan Kovacic, Univ. of Ljubljana (Slovenia); Paul-Anton Will, TU Dresden (Germany); Benjamin Lipovšek, Marko Topic, Univ. of Ljubljana (Slovenia); Simone Lenk, Sebastian Reineke, TU Dresden (Germany); Janz Krc, Univ. of Ljubljana (Slovenia) ........................ [10687-33]
17:00: Optimizing the outcoupling efficiency and the radiation pattern of organic light emitting devices by inkjet printing of microlens arrays, Martijn Cramer, Inge Verboven, Jeroen Drijkoningen, Wim Deferme, Univ. Hasselt (Belgium) ........................ [10687-34]
17:20: Organic light-emitting transistors with overlapping gate structure: towards high efficiency at high current density, Cedric Rolin, IMEC (Belgium); Jeong-Hwan Lee, INHA Univ. (Korea, Republic of); Tung-Huei Ke, IMEC (Belgium); Jan Genoe, Paul Heremans, IMEC (Belgium) and KU Leuven (Belgium) ........................ [10687-35]
Photonics for Solar Energy Systems

CONFERENCE 10688
LOCATION: SALON 10
Monday-Wednesday 23-25 April 2018 • Proceedings of SPIE Vol. 10688

Conference Chair: Ralf B. Wehrspohn, Fraunhofer-Institut für Werkstoffmechanik (Germany)
Conference Co-Chair: Alexander N. Sprafke, Martin-Luther Univ. Halle-Wittenberg (Germany)
Programme Committee: Benedikt Bläsi, Fraunhofer-Institut für Solare Energiesysteme (Germany); Christoph J. Brabc, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); Mark Brongersma, Geballe Lab. for Advanced Materials (GLAM) (United States); Ning Dai, Shanghai Institute of Technical Physics (China); Jung-Ho Lee, Hanyang Univ. (Korea, Republic of); Martin P. Pfeiffer, Heliatek GmbH (Germany)

MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ........................... MON 9:00 TO 11:00
Hot Topics Session I
9:00 to 9:15  Opening Remarks and Awards Presentation
9:15 to 9:25  Welcome
Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30:  Introduction to Hot Topics
Thierry Georges, Oxiulos, France
9:30 to 10:15:  From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Gr., Univ. of Cambridge, United Kingdom
For additional details please visit page 6.

Coffee Break .................................................... Mon 11:00 to 11:25

OPENING REMARKS
LOCATION: SALON 10 ............................................ 11:25 TO 11:30

MONDAY 23 APRIL

SESSION 1
LOCATION: SALON 10 ............................................ MON 11:30 TO 12:50

NanoPhotonics for Photovoltaics
Session Chair: Ralf B. Wehrspohn, Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen (Germany)
11:30: Light management and the dream of photovoltaic energy for 0.01 euro/kWh (Invited Paper), Albert Polman, FOM Institute AMOLF (Netherlands) ........................ [10688-1]
12:00: Photonic structures for III-V/Si multijunction solar cells with efficiency >33% (Invited Paper), Benedikt Bläsi, Oliver Höhn, Hubert Hauser, Romain Cariou, Jan Benick, Frank Feldmann, Paul Beutel, Fraunhofer-Institut für Solare Energiesysteme (Germany); Nasser Razeq, Markus Wimplinger, EV Group (Austria); David Lackner, Martin Hermle, Gerald Siefers, Fraunhofer-Institut für Solare Energiesysteme (Germany); Stefan W. Glunz, Fraunhofer-Institut für Solare Energiesysteme (Germany) and Univ. of Freiburg (Germany); Andreas W. Bet, Frank Dimroth, Fraunhofer-Institut für Solare Energiesysteme (Germany) ........................ [10688-2]
12:30: Photon recycling in solar cells under nonideal conditions, Muluneh G. Abebe, Gaullme Gomard, Karlsruher Institut für Technologie (Germany); Lin Zschiedrich, JCMwave GmbH (Germany); and Konrad-Zuse-Zentrum für Informationsstechnik Berlin (Germany); Carsten Rockstuhl, Ulrich Paetzold, Almi Abass, Karlsruher Institut für Technologie (Germany) ........................ [10688-3]
Lunch Break ..................................................... Mon 12:50 to 14:10

SESSION 2
LOCATION: SALON 10 ............................................ MON 14:10 TO 15:30

NanoPhotonics for Solar Modules
Session Chair: Alexander N. Sprafke, Martin-Luther-Univ. Halle-Wittenberg (Germany)
14:10: Advanced module optics of textured perovskite silicon tandem solar cells, Nico Tucher, Fraunhofer-Institut für Solare Energiesysteme (Germany) and Univ. of Freiburg (Germany); Oliver Höhn, Martin Hermle, Benedikt Bläsi, Jan Christoph Goldschmidt, Fraunhofer-Institut für Solare Energiesysteme (Germany) ........................ [10688-4]
14:30: Optimization of encapsulated invisibility cloaks for solar modules
Malte Langenhorst, Martin F. Schumann, Raphael Schmager, Jonathan Lehr, Uli Lemmer, Karlsruher Institut für Technologie (Germany); Bryce S. Richards, Karlsruhe Institute of Technology (Germany); Martin Wegener, Karlsruher Institut für Technologie (Germany) ........................ [10688-5]
14:50: Microcavprotected encapsulated cloaks with light trapping in photovoltaics, Stephan Dotterrurssh, Raphael Schmager, Efthymios Kampanidis, Bryce S. Richards, Ulrich Paetzold, Karlsruher Institut für Technologie (Germany); Kaining Ding, Forschungszentrum Jülich GmbH (Germany) ........................ [10688-6]
15:10: Viola flower for improved light harvesting in photovoltaics, Raphael Schmager, Benjamin Fritz, Karlsruher Institut für Technologie (Germany); Kaining Ding, Forschungszentrum Jülich GmbH (Germany); Ulrich Lemmer, Bryce S. Richards, Gaullme Gomard, Ulrich W. Paetzold, Karlsruher Institut für Technologie (Germany) ........................ [10688-7]
Coffee Break ..................................................... Mon 15:30 to 16:00

SESSION 3
LOCATION: SALON 10 ............................................ MON 16:00 TO 17:50

Nanostructured Antireflection Coatings and Energy Saving in Buildings
Session Chair: Benedikt Bläsi, Fraunhofer-Institut für Solare Energiesysteme (Germany)
16:00: Broadband and omnidirectional antireflection coatings for III-V concentrating multijunction solar cells (Invited Paper), Lucio C. Andresani, Marco Liscidini, Marco Passoni, Maddalena Patrini, Univ. degli Studi di Pavia (Italy); Gianluca Timò, Franco Trespidi, RSE SpA (Italy) ........................ [10688-8]
16:30: Antireflective nanotextures for perovskite-silicon tandem solar cells, Klaus Jäger, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (Germany); Duote Chen, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (Germany) and Zuse Institute Berlin (Germany); Rainer Jahn, Walther Glaubitt, Fraunhofer-Institut für Solare Energiesysteme (Germany) ........................ [10688-9]
17:00: Nanoimprinted sol-gel materials for antireflective structures on silicon solar cells, Laura Stevens, Hubert Hauser, Oliver Höhn, Fraunhofer-Institut für Solare Energiesysteme (Germany); Nico Tucher, Fraunhofer-Institut für Solare Energiesysteme (Germany) and Univ. of Freiburg (Germany); Christine Wellens, Fraunhofer-Institut für Solare Energiesysteme (Germany); Rainer Jahn, Walther Glaubitt, Fraunhofer-Institut für Silicoforschung ISC (Germany); Claas Müller, Univ. of Freiburg (Germany); Benedikt Bläsi, Fraunhofer-Institut für Solare Energiesysteme (Germany) ........................ [10688-10]
17:30: A combined experimental and theoretical study into the performance of multilayer vanadium dioxide composite films for energy saving applications, Christian Sol, Johannes Schläfer, Tao Li, Ivan P. Parkin, Ioannis Papakonstantinou, Univ. College London (United Kingdom) ........................ [10688-12]
MONDAY POSTER SESSION

LOCATION: HALL RHIN ............................... MON 17:30 TO 19:00

Conference attendees are invited to attend the Photonics Europe poster session on Monday 17:30 to 19:00. Posters will be on display after 10.00 Monday morning in the Hall Rhin. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.

Ultrafast transport of plasmonic hot electron via graphene interface for efficient CO2 photoconversion, Dong-Kwon Lim, Korea Univ. (Korea, Republic of). [10688-33]

Algorithm for precise positioning of the Sun’s position in solar energy system using the GPS/GLONASS system, Kamila Plachta, Wrocław Univ. of Science and Technology (Poland). [10688-34]

Modeling of luminous stream in photovoltaic systems, Kamila Plachta, Wrocław Univ. of Science and Technology (Poland). [10688-35]

Analysis of mirrors geometry of V-trough solar concentrator in photovoltaic system, Kamila Plachta, Wrocław Univ. of Science and Technology (Poland). [10688-36]

Electronics and photonics towards plasmonics and new solar energy devices, Mihaela Girtan, Univ. d’Angers (France). [10688-37]

Improvement and regeneration of perovskite solar cells via methyleamine gas post-treatment, Li Hong, Huazhong Univ. of Science and Technology (China). [10688-38]

Solvent engineering enhances pore filling in fully printable mesoporous perovskite solar cells, Yee Ming, Huazhong Univ. of Science and Technology (China). [10688-39]

Excitation-intensity dependent charge carrier dynamics in methylammonium lead tri-iodide perovskite semiconductors, In-Sik Kim, Cheol Jo, Gwangju Institute of Science and Technology (Korea, Republic of); Rira Kang, Korea Atomic Energy Research Institute (Korea, Republic of); Dong-Yu Kim, Do-Kyung Cho, Gwangju Institute of Science and Technology (Korea, Republic of). [10688-40]

Stochastic modelling of hopping charge carrier transport mechanism in organic photovoltaic materials, Anna Blasczak, Doina Mandâla-Măcinca, Marian Vlădescu, Paul Schiopu, Octavian Dănăilă, Univ. Politehnica of Bucharest (Romania). [10688-41]

Static and dynamic transfer characteristics of high-efficiency photovoltaic converters for optical beaming, Arkady Blank, S.P. Korolev Rocket and Space Corp. Energia (Russian Federation); Stanislav Bogdanov, Roman Voropayev, Daniel Begdav, M.V. Lomonosov Moscow State Univ. (Russian Federation); Anton Razuvaev, S.P. Korolev Rocket and Space Corp. Energia (Russian Federation); Natalia Suhareva, M.V. Lomonosov Moscow State Univ. (Russian Federation); Vjatcheslav Tugaenko, S.P. Korolev Rocket and Space Corp. Energia (Russian Federation); Gennady Untila, Arkadiy Blank, S.P. Korolev Rocket and Space Corp. Energia (Russian Federation); Natalia Suhareva, M.V. Lomonosov Moscow State Univ. (Russian Federation). [10688-42]

Formation of nanostructures on the surface of CIGS films by picosecond laser with different beam patterns, Huizhu Yang, Gedong Jiang, Wenjun Wang, Xuesong Mei, Xinjiao Jiaodong Univ. (China); Ming Li, Xinjiao Jiaodong Univ. (China). [10688-43]

Plasmonic nanoscatter antireflective coating for efficient CZTS solar cells, Omar A. M. Abdelraouf, The American Univ. in Cairo (Egypt) and Ain Shams Univ. (Egypt); Ahmed Shaker, Ain Shams Univ. (Egypt); Nageh K. Allam, The American Univ. in Cairo (Egypt). [10688-44]

Design methodology for selecting optimum plasmonic scattering nanostructures inside CZTS solar cells, Omar A. M. Abdelraouf, The American Univ. in Cairo (Egypt) and Ain Shams Univ. (Egypt); Ahmed Shaker, Ain Shams Univ. (Egypt); Nageh K. Allam, The American Univ. in Cairo (Egypt). [10688-45]

Design of optimum back contact plasmonic nanostructures for enhancing light coupling in CZTS solar cells, Omar A. M. Abdelraouf, The American Univ. in Cairo (Egypt) and Ain Shams Univ. (Egypt); Ahmed Shaker, Ain Shams Univ. (Egypt); Nageh K. Allam, The American Univ. in Cairo (Egypt). [10688-46]

Angle-selective reflection surface for energy efficiency, Kazutaka Isoda, Koki Nagata, Mizue Ebisawa, Tokyo Metropolitan Industrial Technology Research Institute (Japan); Yukitoshi Ohira, Utsunomiya Univ. (Japan). [10688-47]

Linear and nonlinear light sensors in SCC-based maximum power point search algorithms, Mariusz Ostrowski, Wrocław Univ. of Science and Technology (Poland). [10688-48]

The multi-input photovoltaic maximum power point tracker with integrated linear light sensor, Mariusz Ostrowski, Wrocław Univ. of Science and Technology (Poland). [10688-49]

Petrovskite solar cells: from materials to devices, Tanvi Pradhan, Karlsruher Institut für Technologie (Germany). [10688-50]


Large area graphene electrodes for photovoltaic applications, Adlan Kalseh, Gareth Jones, Matthew Barnes, Conor Murphy, Adolfo De Sanz-Castiel, Saverio Russo, Monica Craciun, Univ. of Exeter (United Kingdom). [10688-52]

Cost-effective solutions for dye sensitized solar cells, Ramshoor Tash, Muhammad Hassan Sayyad, Ghalam Isqaq Khan Institute of Engineering Sciences and Technology (Pakistan). [10688-53]

Phase-separated scattering nanostructures for light trapping back reflectors in thin film solar cells, Ydenekachew J. Donie, Karlsruher Institut für Technologie (Germany); Michael Smeets, Forschungszentrum Jülich GmbH (Germany); Amos Egel, Karlsruher Institut für Technologie (Germany); Florian Lentz, Forschungszentrum Jülich GmbH (Germany); Jan B. Preinfalk, Adrian Merens, Ulf Lemmer, Karlsruher Institut für Technologie (Germany); Karsten Bitkau, Forschungszentrum Jülich GmbH (Germany); Guillaume Gomard, Karlsruher Institut für Technologie (Germany). [10688-54]

Solar cell thin film technology transparent conductive aluminum doped zinc oxide, Victor Anyanwu, University of Kwa-Zulu Natal (South Africa). [10688-55]

TUESDAY 24 APRIL

SESSION 4

LOCATION: SALON 10 ............................... TUE 8:50 TO 10:30

Thin-film and Tandem Solar Cells

Session Chair: Lucio C. Andreani, Univ. degli Studi di Pavia (Italy)

8:50: Optical confinement in thin CIGS solar cells (Invited Paper), Marko Topic, Janez Krc, Univ. of Ljubljana (Slovenia). [10688-13]


9:50: Nanophotonic perovskites for enhanced absorption in solar cells, Raphael Schnagger, Philipp Brenner, Karlsruher Institut für Technologie (Germany); Dong Jae Lee, KAIST (Korea, Republic of); Tobias Abzieher, Somayeh Moghadamzadeh, Iheatze Muhaimeen Hossain, Ulrich Lemmer, Bryce Sydney Richards, Ulrich Wilhelm Paetzold, Karlsruher Institut für Technologie (Germany). [10688-15]

10:10: Waveguide-based spectrum-splitting concept for parallel-stacked tandem solar cells, Tom P.N. Veeken, AMOLF (Netherlands); Jorik van de Groep, Stanford Univ. (United States); Mark W. Knight, A. Polman, AMOLF (Netherlands). [10688-16]

Coffee Break. [10688-17]

SESSION 5

LOCATION: SALON 10 ............................... TUE 11:00 TO 12:30

Spectral Conversion and Light Trapping

Session Chair: Thomas White, The Australian National Univ. (Australia)

11:00: Multiresonant light trapping in ultrathin solar cells (Invited Paper), Andrea Cattoni, CZN-CNRS, Université Paris-Sud, Université Paris-Saclay (France). [10688-18]

11:30: Lambertian scattering metasurfaces for photovoltaics, Verena Neder, AMOLF (Netherlands); Radoslav Nianos, Andras Alu, The Univ. of Texas at Austin (United States); Albert Polman, AMOLF (Netherlands). [10688-19]

11:50: Modified PV structures with a nanostructured top electrode, Marek Godlewski, Rafael Kowalczyk, Bartłomiej Witkowski, The Institute of Physics (Poland); Monika Ozga, Centrum Badania i Rozwoju Technologi dla Przemysłu S.A. - CBTP (Poland). [10688-20]

12:10: Mie resonators as rear side structures for light trapping in solar cells, Alexander N. Sprafke, Martin-Luther Univ. Halle-Wittenberg (Germany); Peter Michael Piechulla, Martin-Luther Univ. Halle-Wittenberg (Germany); Michael E. Pollard, The Univ. of New South Wales (Australia); Ralf B. Wehrspohn, Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen (Germany). [10688-21]

Lunch/Exhibition Break. [10688-22]

Poster authors, view poster presentation guidelines and set-up instructions at http://spie.org/x34963.xml and on page 10.
**CONFERENCE 10688**

**SESSION 6**

LOCATION: SALON 10 ........................... TUE 14:30 TO 16:00

**Nanowire Solar Cells and Disordered Photonic Nanostructures I**

Session Chair: Marko Topic, Univ. of Ljubljana (Slovenia)

14:30: **Nanophotonics in III-V nanowire arrays toward tandem solar cells (Invited Paper)**, Nicklas Anttu, Sol Voltacics AB (Sweden) and Aalto Univ. (Finland) and Lund Univ. (Sweden). ................................................... [10688-22]

15:00: **TBA1 (Invited Paper)**, Willem L. Vos, Univ. Twente (Netherlands). ................................................... [10688-23]

15:30: **Light’s topology at the nanoscale: faithfulness, tragedy and usefulness (Invited Paper)**, Laurens Kobus Kuipers, Kavli Institute of Nanoscience Delft (Netherlands). ................................................... [10688-24]

Coffee Break. ........................................... Wed 10:00 to 10:30

**TUESDAY HOT TOPICS**

LOCATION: SCHWEITZER AUDITORIUM .............. TUE 16:30 TO 18:05

**Hot Topics Session II**

16:30 to 16:35: **Introduction**

Francis Berghmans, Wije Univ. Brussel, Belgium

16:35 to 17:20: **Coherent combination of fiber amplified ultrafast laser pulses**

Jens Limpert, Institute of Applied Physics, Friedrich Schiller Univ. Jena, Germany

17:20 to 18:05: **2D materials and their heterostructures: fundamentals, applications and prototypes**

Frank Koppens, IFToM-The Institute of Photonic Sciences, Spain

For additional details, please see page 7.

**WEDNESDAY 25 APRIL**

**SESSION 7**

LOCATION: SALON 10 ............................ WED 08:50 TO 10:30

**Disordered Photonic Nanostructures II**

Session Chair: Aimi Abass, Karlsruher Institut für Technologie (Germany)

8:50: **Hyperuniform solar light absorbers (Invited Paper)**, Marian Florescu, George Gkantzounis, Richard Spalding, Univ. of Surrey (United Kingdom). ................................................... [10688-25]

9:20: **Self-assembly of nanoparticles into nearly hyperuniform 2D structures**, Peter Michael Pichelulla, Martin-Luther Univ. Halle-Wittenberg (Germany); Stefan Nanz, Karlsruher Institut für Technologie (Germany); Alexander Sprake, Martin-Luther-Univers. Halle-Wittenberg (Germany); Aimi Abass, Carsten Rockstuhl, Karlsruher Institut für Technologie (Germany); Ralf B. Wehrspohn, Martin-Luther Univ. Halle-Wittenberg (Germany) and Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen (Germany). ................................................... [10688-26]

9:40: **A strategy for tailoring the size distribution of nanospheres to optimize rough interfaces of solar cells**, Stefan Nanz, Aimi Abass, Karlsruher Institut für Technologie (Germany); Peter M. Pichelulla, Martin-Luther-Univers. Halle-Wittenberg (Germany); Alexander Sprake, Martin-Luther-Univers. Halle-Wittenberg (Germany); Ralf B. Wehrspohn, Martin-Luther-Univers. Halle-Wittenberg (Germany) and Fraunhofer-Institut für Mikrostruktur von Werkstoffen und Systemen (Germany); Carsten Rockstuhl, Karlsruher Institut für Technologie (Germany). ................................................... [10688-27]

10:00: **Localization and correlations of light in disordered photonic systems for photovoltaic applications (Invited Paper)**, Francesco Riboli, LENS - Lab. Europeo di Spettroscopia Non-Lineari (Italy). ................................................... [10688-28]

Coffee Break. ........................................... Wed 11:00 to 11:30

**SESSION 8**

LOCATION: SALON 10 ............................ WED 11:00 TO 12:30

**Disordered Photonic Nanostructures III**

Session Chair: Klaus Jäger, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (Germany)

11:00: **Photonic network random lasers (Invited Paper)**, Dhruv Saxena, Michele Gaio, Imperial College London (United Kingdom); Jacopo Bortolotti, Univ. of Exeter (United Kingdom); Dario Pispignano, Univ. del Salento (Italy); Andrea Camposeo, Istituto Nanoscienze (Italy); Riccardo Sapenzia, Imperial College London (United Kingdom). ................................................... [10688-29]

11:30: **Polymer blend lithography: a versatile approach for the fabrication of disordered light harvesting nanostructures**, Yidenekachew J. Donie, Anna Osypka, Karlsruher Institut für Technologie (Germany); Radwanul H. Siddique, California Institute of Technology (United States); Tatjelena Merdzhanova, Forschungszentrum Jülich GmbH (Germany); Vikas R. Voggu, Brian A. Korgel, The Univ. of Texas at Austin (United States); Jan B. Preinfalk, Amos Egel, Hendrik Hölzcher, Uli Lemmer, Guillaume Gomard, Karlsruher Institut für Technologie (Germany). ................................................... [10688-30]

11:50: **Design of a near-infrared random spectrometer**, Paris Varytis, Max-Born-Institut für Nichtlineare Optik und Kurzzeitpektroskopie (Germany); Dan-Nha Huynh, Humboldt-Univ. zu Berlin (Germany); Wladislaw Hartmann, Wolfram Pernice, Westfälische Wilhelms-Univers. Münster (Germany); Kurt Busch, Max-Born-Institut für Nichtlineare Optik und Kurzzeitpektroskopie (Germany). ................................................... [10688-31]

12:10: **Waveguide-integrated single photon spectrometer based on tailored disorder**, Wladick Hartmann, Westfälische Wilhelms-Univers. Münster (Germany); Paris Varytis, Kurt Busch, Humboldt-Univ. zu Berlin (Germany); Wolfram Pernice, Westfälische Wilhelms-Univers. Münster (Germany). ................................................... [10688-32]
MONDAY 23 APRIL

MONDAY HOT TOPICS
LOCATION: SCHWEITZER AUDITORIUM ................. MON 9:00 TO 11:00
Hot Topics Session I
9:00 to 9:15 Opening Remarks and Awards Presentation
9:15 to 9:25 Welcome
Paul Montgomery, Univ. of Strasbourg, France
9:25 to 9:30: Introduction to Hot Topics
Thierry Georges, Oxxius, France
9:30 to 10:15: From Einstein doubts to quantum bits: a second quantum revolution
Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
10:15 to 11:00: Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom
For additional details please visit page 6.

Coffee Break ........................................... Mon 11:00 to 11:25

WELCOME AND INTRODUCTION
LOCATION: SALON 9 ................................. 11:25 TO 11:30

SESSION 1
LOCATION: SALON 9 ................................. MON 11:30 TO 12:40
Scalability of Photonic Computing
Session Chair: Marc Sciamanna, CentraleSupélec (France)
11:30: Photonic reservoir computing (Invited Paper), Jean-Pierre Lloquet, KU Leuven (Belgium) ........................................ [10689-1]
12:00: Towards integrated parallel photonic reservoir computing based on frequency multiplexing, Wosen Kassa, Evangelia Dimitriadou, Marc Haelterman, Serge Massar, Univ. Libre de Bruxelles (Belgium); Erwin Bente, Technische Univ. Eindhoven (Netherlands) ........................ [10689-2]
12:20: Parallel optical reservoir computing: towards a high-performance scalable implementation, Jiael Pauvels, Guy Van der Sande, Vrije Univ. Brussel (Belgium); Arno Bouwens, KU Leuven (Belgium); Marc Haelterman, Serge Massar, Univ. Libre de Bruxelles (Belgium) ........................ [10689-3]
Lunch Break ............................................. Mon 12:40 to 14:00

SESSION 2
LOCATION: SALON 9 ................................. MON 14:00 TO 15:30
Improved Performances of Optical Reservoir Computing
Session Chair: Peter Bienstman, Photonics Research Group (Belgium)
14:00: Reservoir computing with delay in structured networks (Invited Paper), André Röhm, Technische Univ. Berlin (Germany) ........................ .... [10689-4]
14:30: Scaling up reservoir computing with multiple light scattering, Jonathan Dong, Lab. Kastler Brossel (France); Gilles Waintz, Ecole Normale Supérieure (France); Sylvain Oigian, Lab. Kastler Brossel (France); Florent Krzakala, Ecole Normale Supérieure (France) ........................ .... [10689-5]
15:10: Towards neuro-inspired computing using a small network of micro-ring resonators on an integrated photonic chip, Florian Denis-le Coarer, CentraleSupélec (France); Andrew Katumba, Matthias Freiberger, Joni Dambre, Peter Bienstman, Univ. Ghent (Belgium) ........................ .... [10689-6]
15:10: Laser Dynamics and Reservoir Computing
Session Chair: Marc Sciamanna, CentraleSupélec (France)
16:00: Pulse train control in excitable micropillar lasers with optical delayed feedback (Invited Paper), Sylvain Barbey, Ctr. de Nanosciences et de Nanotechnologies (France); Foud Selmi, Louis Andréoli, Rémy Braive, Isabelle Sagness, Grégoire Beaudoin, Ctr. de Nanosciences et de Nanotechnologies (France); Soizic Terrien, Neil Broderick, Bernd Krauskopf, The Univ. of Auckland (New Zealand) ........................ .... [10689-8]
16:30: Generalized synchronization of a population of semiconductor lasers in one- and all-to-all coupling configurations, Axel Dolcemascio, Univ. de Nice Sophia Antipolis (France); Francesco Marino, Istituto Nazionale di Fisica Nucleare (Italy) and Univ. degli Studi di Firenze (Italy); Stéphane Barland, Univ. de Nice Sophia Antipolis (France) ........................ .... [10689-9]
16:50: Dual-mode semiconductor lasers in reservoir computing, Krishan Harkhao, Guy Van der Sande, Vrije Univ. Brussel (Belgium) ........................ .... [10689-10]

MONDAY POSTER SESSION
LOCATION: HALL RHIN ................................. MON 17:30 TO 19:00
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Design and simulation of optoelectronic neuron equivalents as hardware accelerators of self-learning equivalent convolutional neural structures (SLECNS), Vladimir G. Krasišenko, Vinnitsa Social Economy Institute (Ukraine); Alexander Lazarev, Diana Nikitovich, Vinnitsa National Tech. Univ. (Ukraine) ........................ .... [10689-11]
Focus Session:

**Light Shaping Focus Session**

**Conference Chairs:** Frank Wyrowski, Friedrich-Schiller-Univ. Jena (Germany); Youri Meuret, KU Leuven (Belgium); John T. Sheridan, Univ. College Dublin (Ireland)

**MONDAY 23 APRIL**

**MONDAY HOT TOPICS**

**Location:** Schweitzer Auditorium

**MON 9:00 TO 11:00**

- **9:00 to 9:15** Opening Remarks and Awards Presentation
- **9:15 to 9:25** Welcome
  - Paul Montgomery, Univ. of Strasbourg, France
- **9:25 to 9:30** Introduction to Hot Topics
  - Thierry Georges, Oxxius, France
- **9:30 to 10:15** From Einstein doubts to quantum bits: a second quantum revolution
  - Alain Aspect, Lab. Charles Fabry, Institut d’Optique, France
- **10:15 to 11:00** Pico-Photonics: watching and sensing single molecules by confining light to the atom scale
  - Jeremy J. Baumberg, NanoPhotonics Ctr., Univ. of Cambridge, United Kingdom

Coffee Break: Mon 11:00 to 11:25

**SESSION 1**

**Location:** Salon 8

**MON 11:30 TO 12:20**

- **11:30** Micro-optics for light shaping, Reinhard Voelkel, SUSS MicroOptics SA (Switzerland)
- **11:30** Lunch Break

**SESSION 2**

**Location:** Salon 8

**MON 13:30 TO 17:20**

- **13:30** Tailored illumination with freeform optics for lighting applications, Youn Meuret, KU Leuven (Belgium)
- **14:20** Bringing freeform optics into real-world applications, Jürgen Van Erps, Michael Vervaeke, Fabian Duerr, Hugo Thienpont, Vrije Univ. Brussel (Belgium)
- **15:40** A physical-optics based concept for geometric and diffractive light shaping, Frank Wyrowski, LightTrans International UG (Germany) and Univ. of Jena (Germany)
- **16:30** Volume holographic elements for light shaping, John T. Sheridan, Univ. College Dublin (Ireland)

Coffee Break: Mon 15:10 to 15:40

**DISCUSSION**

**Location:** Salon 8

**MON 17:20 TO 18:00**

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Registration

Onsite Registration and Badge Pick-up Hours
Sunday 22 April .......................... 7:30 to 18:00
Monday 23 April .......................... 7:30 to 17:00
Tuesday 24 April .......................... 8:00 to 17:00
Wednesday 25 April .......................... 8:00 to 17:00
Thursday 26 April .......................... 8:00 to 16:00

CONFERENCE REGISTRATION
Includes admission to all conference sessions, plenaries, panels, and poster sessions, admission to the Exhibition, Welcome Reception, coffee breaks, and a choice of online proceedings.

EXHIBITION REGISTRATION
Exhibition-Only visitor registration is complimentary.

SPIE MEMBER, SPIE STUDENT MEMBER, AND STUDENT PRICING

• SPIE Members receive conference registration discounts. Discounts are applied at the time of registration.

• Student registration rates are available only to undergraduate and graduate students who are enrolled full time and have not yet received their Ph.D. Post-docs may not register as students. A student ID number or proof of student status is required with your registration.

PRESS REGISTRATION
For credentialed press and media representatives only. Please email contact information, title, and organization to media@spie.org.

SPIE CASHIER
Registration Area
Open during registration hours

REGISTRATION PAYMENTS
If you are paying by cash or cheque as part of your onsite registration, wish to add a course, workshop, or special event requiring payment, or have questions regarding your registration, visit the SPIE Cashier.

RECEIPT AND CERTIFICATE OF ATTENDANCE
Preregistered attendees who did not receive a receipt or attendees who need a Certificate of Attendance may obtain those from the SPIE Cashier.

BADGE CORRECTIONS
Badge corrections can be made by the SPIE Cashier. Please have your badge removed from the badge holder and marked with your changes before approaching the counter.

REFUND INFORMATION
There is a €50 service charge for processing refunds. Requests for refunds must be received by 11 April 2018; all registration fees will be forfeited after this date. Membership dues, SPIE Digital Library subscriptions, or Special Events purchased are not refundable.

CAR RENTAL

Hertz Car Rental is the official car rental agency for this event. To reserve a car, call the Hertz International Reservation Center at 1-800-654-3001 in the USA or your local Hertz Reservations Center to receive a special discount for SPIE. Reservations may also be placed on-line at www.hertz.com. You will receive 15% off qualifying rates at participating locations in France. Be sure to identify yourself as a SPIE attendee. The PC#137480 must be on your advance reservation to receive this special offer. You must present online coupon at the time of rental in order to receive this discount.

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PARKING
250 free parking spaces on-site and a 570-space park-and-ride nearby.

Author / Presenter Information

SPEAKER CHECK-IN AND PREVIEW STATION
Location: Salon 11
Sunday through Thursday ........................ 8:00 to 17:00
All presenters must stop by Speaker Check-In to upload their file(s) at least two hours before their scheduled talk. Authors are not able to present using their own devices. All conference rooms have a laptop, projector, screen, lapel microphone, and laser pointer.

Onsite Services

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Complimentary WiFi will be available. Connection speeds will depend on the number of users.

SPIE CONFERENCE AND EXHIBITION APP
Download the free SPIE Conference App, available for iPhone and Android phones. Search and browse the programme, special events, participants, exhibitors, and more.

SPIE LUGGAGE + COAT CHECK
Location: Vestiaire Schweitzer
Daily ........................................ 8.00 to 20.00
Luggage, package, and coat storage are available free of charge / against charge. Please note opening hours.

URGENT MESSAGE LINE
An urgent message line is available during registration hours: +33 3 88 37 67 38. Attendees are asked to check with the Registration Desk for messages.

Food and Beverage Services

FOOD & REFRESHMENTS FOR PURCHASE

MONDAY AND THURSDAY
Food trucks will be located near the front entrance of the facility for attendees to purchase lunch.
TUESDAY AND WEDNESDAY
Food stations will be available in Hall Rhin on Tuesday and Wednesday. Sandwiches, salads, and beverages will be available.

COFFEE BREAKS

Sunday, Monday and Thursday ...... Galérie Schweitzer
Tuesday and Wednesday ...... Exhibition Hall (Hall Rhin)
Complimentary coffee will be served twice daily, at 10:00 and 15:00 hrs. Check individual conference listings for exact times and locations.

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SPIE EVENT POLICIES

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The following Policies and Conditions apply to all SPIE Events. As a condition of registration, you will be required to acknowledge and accept the SPIE Registration Policies and Conditions contained herein.

Attendee Registration and Admission Policy
SPIE, or their officially designated event management, in their sole discretion, reserves the right to accept or decline an individual’s registration for an event. Further, SPIE, or event management, reserves the right to prohibit entry to or to remove any individual whether registered or not, be they attendees, exhibitors, representatives, or vendors, whose conduct is not in keeping with the character and purpose of the event. Without limiting the foregoing, SPIE and event management reserve the right to remove or refuse entry to anyone who has registered or gained access under false pretenses, provided false information, or for any other reason whatsoever that they deem is cause under the circumstances.

Payment Policy
Registrations must be fully paid before access to the conference is allowed. SPIE accepts VISA, MasterCard, American Express, Discover, Diner’s Club, checks and wire transfers. Onsite registrations can also be paid with cash.

SPIE Safe Meeting and Misconduct Policy
SPIE is a professional, not-for-profit society committed to providing valuable and safe conference and exhibition experiences. SPIE is dedicated to equal opportunity and treatment for all its members, meeting attendees, staff, and contractors. Attendees are expected to be respectful to other attendees, SPIE staff, and contractors. Harassment and other misconduct will not be tolerated; violations will be addressed promptly and seriously. Consequences up to and including expulsion from the event as appropriate may be implemented immediately.

The SPIE anti-harassment policy can be found at http://spie.org/policy

Reporting of Unethical or Inappropriate Behavior
Onsite at an SPIE meeting, contact any SPIE Staff with concerns or questions for thorough follow-up. If you feel in immediate danger, please dial the local emergency number for police intervention.
SPIE has established a confidential reporting system for staff and all meetings participants to raise concerns about possible unethical or inappropriate behavior within our community. Complaints may be filed by phoning toll-free to +1-888-818-6898 from within the United States and Canada, or online at www.SPIE.ethicspoint.com and may be made anonymously.

Identification Requirement Policy
To verify registered participants and provide a measure of security, SPIE will ask attendees to present a government-issued photo identification at registration to collect registration materials.

Individuals are not allowed to pick up badges for other attendees. Further, attendees may not have some other person participate in their place at any conference-related activity. Such other individuals will be required to register on their own behalf to participate.

Access to Conference Events / Access for Children Younger than 18
All conference technical and networking events require a badge for admission. Registered attendees may bring children with them as long as they have been issued a badge. Registration badges for children under 18 are free and available at the SPIE registration desk onsite. Children under 14 years of age must be accompanied by an adult at all times, and guardians are asked to help maintain a professional, disturbance-free conference environment.

Exhibition Hall Access / Access for Children Younger than 18
Everyone who attends the exhibition must be registered and have a badge. Badges for children are free and available onsite at the registration desk. Children under 14 years of age must be accompanied by an adult at all times. Guardians are asked to help maintain a professional, disturbance-free exhibition environment. Children under 18 are not allowed in the exhibition area during exhibition move-in and move-out.

Unauthorized Solicitation Policy
Unauthorized solicitation in the Exhibition Hall is prohibited. Any nonexhibiting manufacturer or supplier observed to be distributing information or soliciting business in the aisles, or in another company’s booth, will be asked to leave immediately.

Recording Policy
Conferences, courses, and poster sessions: For copyright reasons, recordings of any kind are prohibited without prior written consent of the presenter or instructor. Attendees may not capture or use materials presented in any meeting/course room or in course notes on display without written permission. Consent forms are available at Speaker Check-In or SPIE Registration. Individuals not complying with this policy will be asked to leave a given session and/or asked to surrender their recording media. Refusal to comply with such requests is grounds for expulsion from the event.

Exhibition Hall: Recordings of any kind are prohibited without explicit permission from on-site company representatives. Individuals not complying with this policy will be asked to surrender their recording media and to leave the exhibition hall. Refusal to comply with such requests is grounds for expulsion from the event.
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Laser Pointer Safety Information/Policy

SPIE supplies tested and safety-approved laser pointers for all conference meeting rooms. For safety reasons, SPIE requests that presenters use provided laser pointers. Use of a personal laser pointer represents the user’s acceptance of liability for use of a non-SPIE-supplied laser pointer. If you choose to use your own laser pointer, it must be tested to ensure <5 mW power output. Lasers in Class II and IIIa (<5 mW) are eye safe if power output is correct, but output must be verified because manufacturer labeling may not match actual output. You are required to sign a waiver releasing SPIE of any liability for use of potentially non-safe, personal laser pointers. Waivers are available at Speaker Check-In.

Unsecured Items Policy

Personal belongings should not be left unattended in meeting rooms or public areas. Unattended items are subject to removal by security. SPIE is not responsible for items left unattended.

Wireless Internet Service Policy

At most events, SPIE provides wireless access for attendees. Properly secure your computer before accessing the public wireless network. SPIE is not responsible for computer viruses or other computer damage.

No-Smoking Policy

Smoking, including e-cigarettes, is not permitted at any SPIE event.

Agreement to Hold Harmless

Attendee agrees to release and hold harmless SPIE from any and all claims, demands, and causes of action arising out of or relating to your participation in the event you are registering to participate in and use of any associated facilities or hotels.

Event Cancellation Policy

If for some unforeseen reason SPIE should have to cancel an event, processed registration fees will be refunded to registrants. Registrants will be responsible for cancellation of travel arrangements or housing reservations and the applicable fees.
Mark your calendar
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The Premier European Optics and Photonics R&D Conference
April 2020 · Strasbourg, France
www.spie.org/PE