

Optics +
Optoelectronics

2019

TECHNICAL PROGRAMME

1 - 4 April 2019

Exhibition: 2 - 3 April 2019

Clarion Congress Hotel
Prague, Czech Republic

spie.org/eoo

CONFERENCE 11031

LOCATION: NADIR

MONDAY-WEDNESDAY 1-3 APRIL 2019 • PROCEEDINGS OF SPIE VOL. 11031

Integrated Optics: Design, Devices, Systems and Applications

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

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

MONDAY 1 APRIL

SESSION 1

LOCATION: NADIR MON 8:30 TO 10:20

Integrated Optics I

Session Chair: **Jiří Čtyroký**, Institute of Photonics and Electronics of the CAS, v.v.i. (Czech Republic)

8:30: **Medical device applications of silicon and silicon nitride integrated photonics** (*Keynote Presentation*), Roel G. Baets, Photonics Research Group (Belgium) [11031-1]

9:10: **Enhanced performance of integrated silicon nanophotonic devices engineered by subwavelength grating structures** (*Invited Paper*), Daniel Benedikovic, Mathias Berciano, Carlos Alonso-Ramos, Xavier Le Roux, Ctr. de Nanosciences et de Nanotechnologies (France); Sylvain Guerber, STMicroelectronics S.A. (France); Guillaume Marcaud, Vladyslav Vakarin, Diego Pérez-Galacho, Eric Cassan, Delphine Marris-Morini, Ctr. de Nanosciences et de Nanotechnologies (France); Pavel Cheben, National Research Council Canada (Canada); Charles Baudot, Frédéric Boeuf, STMicroelectronics S.A. (France); Laurent Vivien, Ctr. de Nanosciences et de Nanotechnologies (France) [11031-2]

9:40: **Analysis of surface-emitting thin-film superluminescent diodes with high efficiency**, Bruno Jentzsch, OSRAM Opto Semiconductors GmbH (Germany) and Univ. Kassel (Germany); Alvaro Gomez-Iglesias, Alexander Tonkikh, OSRAM Opto Semiconductors GmbH (Germany); Bernd Witzigmann, Univ. Kassel (Germany) [11031-3]

10:00: **High coupling efficiency surface illuminated 2D metasurface waveguide coupler for mid-IR wavelengths**, Asif Bilal, Usman Younis, Information Technology Univ. (Pakistan) [11031-4]

Coffee Break. Mon 10:20 to 10:50

SESSION 2

LOCATION: NADIR MON 10:50 TO 12:20

Integrated Optics II

Session Chair: **Roel G. Baets**, Photonics Research Group (Belgium)

10:50: **Surface plasmon optoelectronics and exceptional point waveguides on silicon** (*Keynote Presentation*), Pierre Berini, Univ. of Ottawa (Canada) [11031-5]

11:30: **Active tuning of all-dielectric metasurfaces** (*Invited Paper*), Isabelle Staude, Friedrich Schiller Univ Jena (Germany) [11031-6]

12:00: **Black-silicon-structured back-illuminated Ge-on-Si photodiode arrays**, David Schmelz, Martin Steglich, Kay Dietrich, Thomas Käsebier, Friedrich-Schiller-Univ. Jena (Germany); Uwe D. Zeitner, Friedrich Schiller-Univ. Jena (Germany) and Fraunhofer-Institut für Angewandte Optik und Feinmechanik IOF (Germany) [11031-7]

Lunch Break. Mon 12:20 to 13:40

SESSION 3

LOCATION: NADIR MON 13:40 TO 15:40

Integrated Optics III

Session Chair: **Pierre Berini**, Univ. of Ottawa (Canada)

13:40: **PECVD silicon nitride optical waveguide devices for sensing applications in the visible and <math><1\mu\text{m}</math> near infrared wavelength region** (*Invited Paper*), Rainer Hainberger, Paul Muellner, Stefan Nevlacsil, Florian Vogelbacher, Moritz Eggeling, Alejandro Maese-Novos, AIT Austrian Institute of Technology GmbH (Austria); Martin Sagmeister, Guenther Koppitsch, Jochen Kraft, ams AG (Austria); Xue Zhou, Jinhua Huang, Mingzhu Li, Ke-Jian Jiang, Yanlin Song, Institute of Chemistry CAS (China) [11031-8]

14:10: **Mid-infrared waveguides for biosensing** (*Invited Paper*), James Wilkinson, University of Southampton (United Kingdom) [11031-9]

14:40: **Investigation of light-controlled filament dynamics in an electro-optical memristive photodetector**, Christoph Weilenmann, Fabian Ducry, Samuel Andermatt, Bojun Cheng, Mila Lewerenz, Ping Ma, Juerg Leuthold, Alexandros Embaras, Mathieu Luisier, ETH Zurich (Switzerland) [11031-11]

15:00: **Composite cavity organic microlasers**, Markas Sudzius, Tim Wagner, Hartmut Fröb, Karl Leo, TU Dresden (Germany) [11031-13]

15:20: **Absolute optimization method of vertical grating coupler devices based on S-matrix formalism**, Anat Demeter-Finzi, Shlomo Ruschin, Tel Aviv Univ. (Israel) [11031-49]

Coffee Break. Mon 15:40 to 16:15

PLENARY SESSION

LOCATION: NADIR MON 16:15 TO 18:00

Plenary Session I

16:15 to 16:25 **Welcome Address**
Jim M. Oschmann, SPIE President
Retired, Ball Aerospace & Technologies Corp., United States

SPIE Welcome and Introduction
Bedrich Rus, ELI Beamlines, Institute of Physics, CAS v.v.i., Czech Republic

In Memoriam of Pavel Tomanek
2007-2009 symposium chair of Optics+Optoelectronics, and professor of Applied Physics at the Brno University of Technology
TRIBUTE PRESENTED BY **Ivo Rendina**, CNR/Istituto per la Microelettronica e Microsistemi, Italy

Speaker Introduction
Bedrich Rus, ELI Beamlines, Institute of Physics, CAS v.v.i., Czech Republic

16:25 to 17:10 **Recent advances in SESAM-modelocked high-power thin disk lasers**
Ursula Keller, ETH Zurich; Director, National Center of Competence in Molecular Ultrafast Science and Technology (NCCR MUST), Switzerland

17:15 to 18:00 **Detecting single photons with superconducting nanostructures**
Val Zwiller, Quantum Nano Photonics, Royal Institute of Technology, Stockholm, Sweden

For details, please see page 8-9 in the printed programme or visit <http://spie.org/EOO/special-events/Plenary-Event>