2017 IEEE Photonics Conference (IPC 2017)

Orlando, Florida, USA
1-5 October 2017

IEEE Catalog Number: CFP17LEO-POD
ISBN: 978-1-5090-6579-0

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP17LEO-POD
ISBN (Print-On-Demand):	978-1-5090-6579-0
ISBN (Online):	978-1-5090-6578-3
ISSN:	1092-8081

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

IEEE Photonics Conference (IPC 2017)

Welcome to the
30th Annual Conference of the IEEE Photonics Society
1-5 October 2017
Hilton Orlando Lake Buena Vista
Lake Buena Vista, Florida, USA

Table of Contents

MD1: Integrated Optical Sources 8:30-10:00 Salon VI

MD1.1: High Speed Light Sources for Optical Communication System Using Active Passive Integration Technology (Page N/A)
Shigehisa Tanaka *(Oclaro Japan, Inc.)*

MD1.2: Continuous Wave Integrated DBR Laser in an InP Membrane Platform (Page 13)
Vadim Pogoretskiy *(TU/e)*
Yuqing Jiao *(TU/e)*
Meint Smit *(TU/e)*
Jos van der Tol *(TU/e)*

MD1.3: Self-Coupled Mode-Locked Laser with Switchable Repetition-Rate for mmW/THz Pulse Generation (Page 15)
Mu-Chieh Lo *(1Universidad Carlos III de Madrid)*
Robinson Guzmán *(1Universidad Carlos III de Madrid)*
Carlos Gordón *(Universidad Técnica de Ambato)*
Muhsin Ali *(1Universidad Carlos III de Madrid)*
Guillermo Carpintero *(1Universidad Carlos III de Madrid)*

MD1.4: Optimization of On-chip Colliding Pulse Mode-Locked Semiconductor Lasers (Page 17)
Carlos Gordon *(Universidad Técnica de Ambato)*
Myriam Cumbajin *(Universidad Técnica de Ambato)*
Robinson Guzman *(1Universidad Carlos III de Madrid)*
Mu-Chieh Lo *(1Universidad Carlos III de Madrid)*
Guillermo Carpintero *(Universidad Carlos III de Madr)*

ME1: Nanosensing and Plasmonics 8:30-10:00 Salon VII

ME1.1: Designing Gold Nanostar Probes for Optical and Magnetic Resonance Imaging (Page 19)
Teri Odom *(Northwestern University)*

ME1.2: Optical Trapping Assisted Enhancement of On-chip Single Molecule Detection Rate with a Solid-state Nanopore (Page 21)
Md Mahmudur Rahman *(University of California, Santa Cruz)*
Mark Harrington *(University of California, Santa Cruz)*
Matthew A. Stott *(Brigham Young University)*
Thomas D. Yuzvinsky *(University of California, Santa Cruz)*
Yucheng Li *(University of California, Santa Cruz)*
Aaron R. Hawkins *(Brigham Young University)*
Holger Schmidt *(University of California, Santa Cruz)*

ME1.3: Hyperspectral Expansion Microscopy (Page 23)
Camille Artur *(University of Houston)*
Tasha Womack *(University of Houston)*
Jingting Li *(University of Houston)*
Jason Eriksen *(University of Houston)*
David Mayerich *(University of Houston)*
Wei-Chuan Shih *(University of Houston)*

ME1.4: High-quality Microresonators for Detection and Measurement of Nanoscale Objects (Page N/A)
Lan Yang *(Washington University in St Lo)*

MF1: Receiver Technologies 8:30-10:00 Salon VIII

MF1.1: Optical Wireless Communication with Monolithic Avalanche Photodiode Receivers (Page 25)
Dinka Milovancev *(Vienna University of Technology)*
Tomislav Jukić *(Vienna University of Technology)*
Berhnard Steindl *(Vienna University of Technology)*
Michael Hofbauer *(Vienna University of Technology)*
Reinhard Enne *(Vienna University of Technology)*
Kerstin Schneider-Hornstein *(Vienna University of Technology)*
Horst Zimmermann *(Vienna University of Technology)*

MF1.2: A Comparison Between the Sensitivities of VLC Receivers Containing an off-the-shelf SPAD Array and an APD (Page 27)
Long Zhang *(University of Oxford)*
Hyunchae Chun *(University of Oxford)*
Grahame Faulkner *(University of Oxford)*
Dominic O'Brien *(University of Oxford)*
Steve Collins *(University of Oxford)*

MF1.3: A 2.2-mW 24-Mb/s CMOS LiFi Receiver System-on-a-Chip with Ambient Light Rejection and Post-Equalization (Page 29)
Xianbo LI *(The Hong Kong University of Science and Technology)*
Babar Hussain *(The Hong Kong University of Science and Technology)*
Li Wang *(The Hong Kong University of Science and Technology)*
Junmin Jiang *(The Hong Kong University of Science and Technology)*
C. Patrick Yue *(The Hong Kong University of Science and Technology)*

MF1.4: From Linear to Geiger Mode Avalanche Detectors for ADC-less VLC Receiver Architectures (Page 31)
Oscar Almer *(University of Edinburgh)*
Salvatore Gnecchi *(SensL Technologies Ltd.)*
Robert Henderson *(University of Edinburgh)*

MG1: Nanoscale LEDs & Lasers 8:30-10:00 Kahiki/Lily

MG1.1: Controlling Surface Recombination in a Nanoscale III-V Light Emitting Diode (Page 33)
Seth A. Fortuna *(University of California, Berkeley)*
Christopher Heidelberger *(Massachusetts Institute of Technology)*
Nicolas M. Andrade *(University of California, Berkeley)*
Eli Yablonovitch *(University of California, Berkeley)*
Ming C. Wu *(University of California, Berkeley)*

MG1.2: Cubic Phase Light Emitters Hetero-integrated on Silicon (Page 35)
C. Bayram *(University of Illinois)*
R. Liu *(University of Illinois)*

MG1.3: Parity-Time Symmetry Photonics (Page N/A)
Xiang Zhang *(University of California, Berkeley)*

MG1.4: Spectral Response of an Active Photonic Cavity at the Poynting's Threshold (Page 37)
Ali K. Jahromi *(University of Central Florida)*
Soroush Shabahang *(University of Central Florida)*
H. Esat Kondakci *(University of Central Florida)*
Petri Melanen *(Modulight Inc.)*
Seppo Orsila *(Modulight Inc.)*
Ayman F. Abouraddy *(University of Central Florida)*

MG1.5: A Novel Thin-film Blue Light Emitting Diode via GaN-on-Graphene Technology (Page 39)
C. Bayram *(University of Illinois at Urbana-Champaign)*
J. Kim *(IBM Research, T. J. Watson Research Center)*
H. Park *(IBM Research, T. J. Watson Research Center)*
C. W. Cheng *(IBM Research, T. J. Watson Research Center)*
C. Dimitrakopoulos *(University of Massachusetts Amherst)*
J. Ott *(IBM Research, T. J. Watson Research Center)*
K. B. Reuter *(IBM Research, T. J. Watson Research Center)*
S. W. Bedell *(IBM Research, T. J. Watson Research Center)*
D. K. Sadana *(IBM Research, T. J. Watson Research Center)*

MH1: SDM and Submarine System 8:30-10:00 Poinsettia/ Quince

MH1.1: Power Efficient Long-haul Transmission Using Multi-core Fiber (Page N/A)
Alex Turukhin *(TE Subcom)*

MH1.2: Two-dimensional Spatial Coherent Matched Detection Scheme for Modal Separation and Homodyne Detection of Mode-Division Multiplexed Signals (Page 41)
Takahide Sakamoto *(National Institute of Information and Communications Technology and Japan Science and Technology Agency)*
Toshimasa Umezawa *(National Institute of Information and Communications Technology)*
Naokatsu Yamamoto *(National Institute of Information and Communications Technology)*
Tetsuya Kawanishi *(National Institute of Information and Communications Technology and Waseda University)*

MH1.3: Mode Characterization of Rectangular Core Fiber (Page 43)
Lior Rechtman *(The Hebrew University)*
Dan M. Marom *(The Hebrew University)*
Jeffery S. Stone *(Corning Incorporated)*
Gaozhu Peng *(Corning Incorporated)*
Ming-Jun Li *(Corning Incorporated)*

MH1.4: The New Era of Open Submarine Cables (Page N/A)
Stephen Grubb *(Facebook)*

MA2: Label-Free Super-Resolution: Novel Theory and Concepts 10:30-12:00 Salon I

MA2.1: Perfect Imaging Via Transformation Optics (Page N/A)
Ulf Leonhardt *(Weizmann Institute of Science)*

MA2.2: Hyper-Structured Illumination: Label-free Super-resolution Imaging with Hyperbolic Metamaterials (Page 45)
Evgenii E. Narimanov *(Purdue University)*

MA2.3: Super-resolution Imaging with Near-field Probes Having Complex Point Spread Functions (Page N/A)
Micheal Sumetsky *(Aston University, UK)*

MB2: Integrated Photodetector Systems 10:30-12:00 Salon II

MB2.1: 1.3μm III-nitride Nanowire Monolithic Diode Lasers and Photonic Integrated Circuits on (001) Silicon (Page 47)
Pallab Bhattacharya *(University of Michigan)*
Arnab Hazari *(University of Michigan)*

MB2.2: Waveguide-Integrated High-Speed and High-Power Photodiode with >105 GHz Bandwidth (Page 49)
Qinglong Li *(University of Virginia)*
Keye Sun *(University of Virginia)*
Kejia Li *(University of Virginia)*
Qianhuan Yu *(University of Virginia)*
Jizhao Zang *(University of Virginia)*
Ze Wang *(University of Virginia)*

Patrick Runge *(Fraunhofer Heinrich-Hertz-Ins)*
Willi Ebert *(Fraunhofer Heinrich-Hertz-Ins)*
Andreas Beling *(University of Virginia)*
Joe C. Campbell *(University of Virginia)*

MB2.3: Si3N4 Photonic Integrated Circuit for Multi-baseline Interferometric Imaging (Page 51)
Guangyao Liu *(University of California, Davis)*
Tiehui Su *(University of California, Davis)*
Siwei Li *(University of California, Davis)*
Jaeyi Chun *(University of California, Davis)*
Weicheng Lai *(University of California, Davis)*
Mathias Prost *(University of California, Davis)*
Chad Ogden *(Lockheed Martin ATC)*
Samuel T. Thurman *(Lockheed Martin Coherent Technologies)*
Richard L. Kendrick *(Lockheed Martin ATC)*
Alan Duncan *(Lockheed Martin ATC)*
S.J. Ben Yoo *(University of California, Davis)*

MB2.4: Thermal Investigation of High-Power Photodiodes (Page 53)
Yang Shen *(University of Virginia, Charlottesville)*
John Gaskins *(University of Virginia, Charlottesville)*
Xiaojun Xie *(University of Virginia, Charlottesville)*
Brian M. Foley *(University of Virginia, Charlottesville)*
Ramez Cheaito *(University of Virginia, Charlottesville)*
Patrick E. Hopkins *(University of Virginia, Charlottesville)*
Joe C. Campbell *(University of Virginia, Charlottesville)*

MB2.5: Nonplanar Focal Plane with Silicon Based Photodetector (Page 55)
Zhao Ma *(University of Central Florida)*
Xiaochen Wang *(University of Central Florida)*
Hyoung Jin Cho *(University of Central Florida)*
Kyle Renshaw *(University of Central Florida)*

MC2: GaN Materials, LEDs and AMOLEDs 10:30-12:00 Salon III

MC2.1: Progress in GaN Substrates for Lighting and Beyond (Page N/A)
Siddha Pimputkar *(Lehigh University)*

MC2.2: Multi-Color Nanowire LEDs on a Single Chip (Page 57)
Zetian Mi *(University of Michigan and McGill University)*
Yong-Ho Ra *(McGill University)*
Renjie Wang *(McGill University)*
Roksana Rashid *(McGill University)*

MC2.3: Dilute-Anion Boron Nitride Semiconductor for Light Emitters (Page 59)
Chee-Keong Tan *(Clarkson University and Lehigh University)*
Damir Borovac *(Lehigh University)*
Wei Sun *(Lehigh University)*
Nelson Tansu *(Lehigh University)*

MC2.4: Applying Inverter Circuitry to the Driving Scheme of Active-Matrix Organic Light-Emitting Displays (Page 61)
Henglong Yang *(Taipei Tech)*

: (Page 61)
Pin-Jui Huang *(Taipei Tech)*

MD2: Datacom VCSELs 10:30-12:00 Salon VI

MD2.1: Optical Components for 56Gbps datalinks (Page N/A)
Petter Westbergh *(Finisar Corporation)*
Deepa Gazula *(Finisar Corporation)*
Gary D. Landry *(Finisar Corporation)*
Timo Gray *(Finisar Corporation)*
Ed Shaw *(Finisar Corporation)*
Jim A. Tatum *(Finisar Corporation)*

MD2.2: High-Speed Zn-Diffusion/Oxide-Relief VCSELs with Stable High-Temperature Performance at 940 nm Wavelength (Page 63)
Kai-Lun Chi *(National Central University)*
Zheng-Ting Xie *(National Central University)*
Jin-Wei Shi *(National Central University)*

MD2.3: 1060 nm Single and Multimode VCSELs for up to 50 Gb/s Modulation (Page 65)
Ewa Simpanen *(Chalmers University of Technology)*
Johan S. Gustavsson *(Chalmers University of Technology)*
Erik Haglund *(Chalmers University of Technology)*
Emanuel P. Haglund *(Chalmers University of Technology)*
Tamas Lengyel *(Chalmers University of Technology)*
Anders Larsson *(Chalmers University of Technology)*
Peter A. Andrekson *(Chalmers University of Technology)*
Wayne V. Sorin *(Hewlett Packard Enterprise)*
Sagi Mathai *(Hewlett Packard Enterprise)*
Michael Tan *(Hewlett Packard Enterprise)*

Scott Bickham *(Corning R&D Corporation)*

MD2.4: Low Dimension High Bandwidth 980-nm VCSELs for Very-short-reach Optical Interconnects and Integration (Page 67)
James A. Lott *(Technische Universität Berlin)*

ME2: Datacenter Architectures 10:30-12:00 Salon VII

ME2.1: Inter Datacenter Networking (Page N/A)
Monia Ghobadi *(Microsoft Research)*

ME2.2: Optical Technologies for Scaling Datacenters (Page N/A)
Chongjin Xie *(Alibaba Group)*

ME2.3: Web-scale Data Center Interconnect Market and Technologies (Page N/A)
Stuart Elby *(Infinera)*

MF2: Sources for LiFi and Laser Lighting 10:30-12:00 Salon VIII

MF2.1: Novel Phosphors and Integrated Devices for Laser Lighting and High Rate VLC (Page N/A)
Boon Ooi *(KAUST)*

MF2.2: MicroLED-pumped Perovskite Quantum Dot Color Converter for Visible Light Communications (Page 69)
Miguel Leitão *(University of Strathclyde)*
Mohamed S. Islim *(University of Edinburgh)*
Liang Yin *(University of Edinburgh)*
Shaun Viola *(University of Glasgow)*
Scott Watson *(University of Glasgow)*
Anthony Kelly *(University of Glasgow)*
Xiaoming Li *(Nanjing University of Science)*
D. Yu *(Nanjing University of Science)*
Haibo Zeng *(Nanjing University of Science)*
Stefan Videv *(University of Edinburgh)*
Harald Haas *(University of Edinburgh)*
Erdan Gu *(University of Strathclyde)*
Nicolas Laurand *(University of Strathclyde)*
Martin D. Dawson *(University of Strathclyde)*

MF2.3: Development, Performance and Application of Novel GaN-based Micro-LED Arrays with Individually Addressable N-Electrodes (Page 71)
Enyuan Xie *(University of Strathclyde)*
Mark Stonehouse *(University of Strathclyde)*
Ricardo Ferreira *(University of Strathclyde)*
Jonathan J.D. McKendry *(University of Strathclyde)*
Johannes Herrnsdorf *(University of Strathclyde)*
Xiangyu He *(University of Strathclyde)*
Sujan Rajbhandari *(University of Oxford)*
Hyunchae Chun *(University of Oxford)*
Aravind V.N. Jalajakumari *(University of Edinburgh)*
Oscar Almer *(University of Edinburgh)*
Stefan Videv *(University of Edinburgh)*
Grahame Faulkner *(University of Oxford)*
Ian M. Watson *(University of Strathclyde)*
Erdan Gu *(University of Strathclyde)*
Robert Henderson *(University of Edinburgh)*
Dominic O'Brien *(University of Oxford)*
Harald Haas *(University of Edinburgh)*
Martin D. Dawson *(University of Strathclyde)*

MF2.4: The Development of High-Speed III-Nitride Based Light-Emitting Diode for Visible Light and Plastic Optical Fiber Communications (Page 73)
Jin-Wei Shi *(National Central University)*
J.-K. Sheu *(National Cheng Kung University)*

MG2: Plasmonics 10:30-12:00 Kahiki/Lily

MG2.1: Molecular Optomechanics in Atomic-scale Plasmonic Hot Spots (Page 75)
Mikolaj Schmidt *(Center for Materials Physics and Donostia International Physics Center)*
Alejandro Gonzalez-Tudela *(Max-Planck-Institute)*
Geza Giedke *(Center for Materials Physics and Donostia International Physics Center)*
Tomas Neuman *(Center for Materials Physics and Donostia International Physics Center)*
Yao Zhang *(Center for Materials Physics and Donostia International Physics Center)*
Ruben Esteban *(Center for Materials Physics and Donostia International Physics Center)*
Javier Aizpurua *(Center for Materials Physics and Donostia International Physics Center)*

MG2.2: Design of Plasmonic Modulators with Vanadium Dioxide on Silicon-On-Insulator (Page 77)
Miao Sun *(University of Melbourne)*
W. Shieh *(University of Melbourne)*
R. R. Unnithan *(University of Melbourne)*

MG2.3: Geometry Dependence and Effects in Plasmonic Lattices (Page 87)
Rui Guo *(Aalto University)*
T. K. Hakala *(Aalto University)*

P. Törmä *(Aalto University)*

MG2.4: Electro-Absorption Plasmonic Modulator in Lithium Niobate (Page 89)
Javed Ali *(Texas A&M University)*
Ohannes Eknoyan *(Texas A&M University)*

MH2: OC Tutorial / Probabilistic Shaping 10:30-12:00 Poinsettia/ Quince

MH2.1: Probabilistic Shaping Benefit and Practicality for Higher-Order QAM (Page 93)
Georg Böcherer *(Technical University of Munich)*
Schulte *(Technical University of Munich)*
Steiner *(Technical University of Munich)*

MA3: Devices for Microwave Photonic Applications 1:30-3:00 Salon I

MA3.1: Low-Dark Current III-V Photodiodes Grown on Silicon Substrate (Page 95)
Keye Sun *(University of Virginia)*
Daehwan Jung *(University of California, Santa Barbara)*
Chen Shang *(University of California, Santa Barbara)*
Alan Liu *(University of California, Santa Barbara)*
John Bowers *(University of California, Santa Barbara)*
Andreas Beling *(University of Virginia)*

MA3.2: 110 GHz Zero-bias Based UTC-PD for Radio-over-fiber Transmission Through Multicore Fiber (Page 97)
Toshimasa Umezawa *(National Institute of Information and Communications Technology)*
Pham Tien Dat *(National Institute of Information and Communications Technology)*
Atsushi Kanno *(National Institute of Information and Communications Technology)*
Naokatsu Yamamoto *(National Institute of Information and Communications Technology)*
Tetsuya Kawanishi *(National Institute of Information and Communications Technology and Waseda University)*

MA3.3: Temperature Dependence of Nonlinearity in High-speed, High-power Photodetectors (Page 99)
Josue Davila-Rodriguez *(Time and Frequency Division, NIST)*
Holly Leopardi *(Time and Frequency Division, NIST)*
Tara M. Fortier *(Time and Frequency Division, NIST)*
Xiaojun Xie *(University of Virginia)*
Joe C. Campbell *(University of Virginia)*
James Booth *(Communications Technology Laboratory, NIST)*
Nathan Orloff *(Communications Technology Laboratory, NIST)*
Scott A. Diddams *(Time and Frequency Division, NIST)*
Franklyn Quinlan *(Time and Frequency Division, NIST)*

MA3.4: Microring Weight Bank Designs with Improved Channel Density and Tolerance (Page 101)
Alexander N. Tait *(Princeton University)*
Allie X. Wu *(Princeton University)*
T. Ferreira de Lima *(Princeton University)*
M. A. Nahmias *(Princeton University)*
Bhavin J. Shastri *(Princeton University)*
Paul R. Prucnal *(Princeton University)*

MA3.5: Integrated Photodiodes for Microwave Photonics Applications (Page 103)
Andreas Beling *(University of Virginia)*

MB3: Hybrid Detectors and Phased Arrays 1:30-2:45 Salon II

MB3.1: Near-infrared and Mid-infrared Integrated Photonics Based on Ge-on-insulator Platform (Page 105)
Mitsuru Takenaka *(The University of Tokyo)*
Jian Kang *(The University of Tokyo)*
Shinichi Takagi *(The University of Tokyo)*

MB3.2: Germanium-on-silicon Nitride: A promising Platform for Mid-IR Sensing Applications (Page 107)
Wei Li *(Nanyang Technological University)*
P. Anantha *(Nanyang Technological University)*
Kwang Hong Lee *(Singapore-MIT Alliance for Research and Technology (SMART))*
Hao Dong Qiu *(Nanyang Technological University)*
Xin Guo *(Nanyang Technological University)*
Lin Zhang *(Nanyang Technological University)*
Hong Wang *(Nanyang Technological University)*
Chuan Seng Tan *(Nanyang Technological University and Singapore-MIT Alliance for Research and Technology (SMART))*

MB3.3: Photodiode-Integrated UWB Phased Array Antennas (Page 109)
Dylan D. Ross *(University of Delaware)*
Matthew R. Konkol *(University of Delaware)*
Shouyuan Shi *(University of Delaware)*
Dennis W. Prather *(University of Delaware)*

MC3: SL Tutorial 1:30-3:00 Salon III

MC3.1: Wavelength Beam Combined High-brightness kW Class Direct Diode Lasers (Page N/A)
Hagen Zimer *(TRUMPF Photonics, Inc.)*

MC3.2: Numerical and Experimental Investigation of Near-field Narrowing in Broad-area Laser Diodes Due to Longitudinally Asymmetric Self-heating (Page 111)

Simon Rauch *(TRUMPF Laser GmbH)*
Matthias Haas *(TRUMPF Laser GmbH)*
Hagen Zimer *(TRUMPF Photonics, Inc.)*

MC3.3: Blue and Red Shifted, Partially Intermixed InGaAsP Quantum Well Semiconductor Laser Diodes. (Page 113)
Thamer Tabbakh *(University of Central Florida)*
Patrick LiKamWa *(University of Central Florida)*

MD3: Modulated and Tunable Microresonators 1:30-3:00 Salon VI

MD3.1: Synthetic dimensions in dynamically modulated resonators (Page N/A)
Shanhui Fan *(Stanford University)*

MD3.2: Piezoelectric Tuning of a Suspended Silicon Nitride Ring Resonator (Page 117)
Warren Jin *(University of California, Santa Barbara)*
E.J. Stanton *(University of California, Santa Barbara)*
N. Volet *(University of California, Santa Barbara)*
R.G. Polcawich *(U.S. Army Research Laboratory)*
Dan Baney *(Keysight Technologies)*
P. Morton *(Morton Photonics)*
J. E. Bowers *(University of California, Santa Barbara)*

MD3.3: Tunable Optical Delay Line Based on Si3N4 Ring Resonators (Page 119)
Chao Xiang *(University of California, Santa Barbara)*
Michael L. Davenport *(University of California, Santa Barbara)*
Jacob B. Khurgin *(Johns Hopkins University)*
Paul A. Morton *(Morton Photonics)*
John E. Bowers *(University of California, Santa Barbara)*

MD3.4: Heterogeneous MOS Microring Resonators (Page 121)
Xue Huang *(Hewlett Packard Laboratories)*
Di Liang *(Hewlett Packard Laboratories)*
Chong Zhang *(Hewlett Packard Laboratories)*
Geza Kurczveil *(Hewlett Packard Laboratories)*
Xuema Li *(Hewlett Packard Laboratories)*
Jiaming Zhang *(Hewlett Packard Laboratories)*
Marco Fiorentino *(Hewlett Packard Laboratories)*
Raymond Beausoleil *(Hewlett Packard Laboratories)*

ME3: Photonic Components for Datacenters 1:30-3:00 Salon VII

ME3.1: Partially Configurable Optical Switching for Data Center Networks (Page 123)
William M. Mellette *(University of California San Diego)*
Joseph E. Ford *(University of California San Diego)*
George Porter *(University of California San Diego)*

ME3.2: Petascale Networking for Datacenters (Page N/A)
Dan Marom *(University of Jerusalem)*

ME3.3: Hybrid Optical Routing Switches for Datacenter Applications (Page N/A)
Ian Hugh White *(University of Cambridge)*

MF3: LiFi and Optical Wireless Applications 1:30-2:45 Salon VIII

MF3.1: Optical Wireless Communications in Industrial Production Environments (Page 125)
Pablo Wilke Berenguer *(Fraunhofer HHI)*
Dominic Schulz *(Fraunhofer HHI)*
Johannes Karl Fischer *(Fraunhofer HHI)*
Volker Jungnickel *(Fraunhofer HHI)*

MF3.2: MEMS-Based Reconfigurable Optical Wireless Networking in Data Centers (Page 127)
Mohsen Kavehrad *(State College)*

MF3.3: An Integrated Indoor Visible Light Communication and Positioning System Based on FBMC-SCM (Page 129)
Helin Yang *(Nanyang Technol. University)*
Chen Chen *(Nanyang Technol. University)*
Wen-De Zhong *(Nanyang Technol. University)*
Sheng Zhang *(Nanyang Technol. University)*
Pengfei Du *(Nanyang Technol. University)*

MG3: Quantum Photonics 1:30-2:45 Kahiki/Lily

MG3.1: Performance Limit of Monolithically Integrated Gaussian Modulated Coherent States Quantum Key Distribution Receiver in Silicon-on-Insulator CMOS (Page 131)
Sungwon Chung *(University of Southern California)*
Abhilash B. Ravindranath *(GlobalFoundries)*
Xi Yang *(Massachusetts Institute of Technology)*

MG3.2: Quantum Light-matter Interfaces Based on Rare-earth Ions and Nano-photonics (Page 133)
Andrei Faraon *(California Institute of Technology)*
Tian Zhong *(California Institute of Technology)*
Jonathan M. Kindem *(California Institute of Technology)*
Ioana Craiciu *(California Institute of Technology)*

Jonathan G. Bartholomew *(California Institute of Technology)*
Evan Miyazono *(California Institute of Technology)*
Jake Rochman *(California Institute of Technology)*

MG3.3: An Integrated Diamond Nanophotonics Platform for Quantum-optical Networks (Page N/A)
Alp Sipahigil *(Harvard University)*

MH3: Nonlinear Optics in Fibers 1:30-3:00 Poinsettia/ Quince

MH3.1: Observation of Stimulated Brillouin Scattering in Si3N4 Waveguides (Page 135)
Razi Dehghannasiri *(Georgia Institute of Technology)*
Ali Asghar Eftekhar *(Georgia Institute of Technology)*
Ali Adibi *(Georgia Institute of Technology)*

MH3.2: Nonlinear Aharonov-Bohm Suppression of Optical Tunneling in Twisted Multicore Optical Fibers (Page 137)
Midya Parto *(University of Central Florida)*
Helena Lopez *(University of Central Florida)*
Mercedeh Khajavikhan *(University of Central Florida)*
Rodrigo Amezcua Correa *(University of Central Florida)*
Demetrios Christodoulides *(University of Central Florida)*

MH3.3: Soliton Microcomb Operation to 778 nm (Page 139)
Qi-Fan Yang *(California Institute of Technology)*
Seung Hoon Lee *(California Institute of Technology)*
Dong Yoon Oh *(California Institute of Technology)*
Boqiang Shen *(California Institute of Technology)*
Heming Wang *(California Institute of Technology)*
Ki Youl Yang *(California Institute of Technology)*
Yu Hung Lai *(California Institute of Technology)*
Xu Yi *(California Institute of Technology)*
Kerry Vahala *(California Institute of Technology)*

MH3.4: Generation of a 128-GHz Optical Pulse Train from a 250-MHz Frequency Comb Using Temporal Self-imaging (Page 141)
Mohamed Seghilani *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*
Reza Maram *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*
Luis Romero Cortés *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*
José Azana *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*

MH3.5: Demonstration of Diffraction-Free, Acceleration-Free Space-Time Airy Beams (Page 143)
H. Esat Kondakci *(University of Central Florida)*
Ayman F. Abouraddy *(University of Central Florida)*

MH3.6: All-fiber Chalcogenide Raman Laser at 2 μm (Page 145)
Nurmemet Abdukerim *(McGill University)*
Lizhu Li *(McGill University)*
Mohammed El Amraoui *(Laval University)*
Younès Messaddeq *(Laval University)*
Martin Rochette *(McGill University)*

MA4: High Speed and Digital Communications 3:30-4:30 Salon I

MA4.1: Wireless Multi-Subcarrier THz Communications Using Mixing in a Photoconductor for Coherent Reception (Page 147)
Tobias Harter *(Institute of Photonics and Quantum Electronics and Institute of Microstructure Technology)*
Md Mosaddek Hossain Adib *(Institute of Photonics and Quantum Electronics)*
Stefan Wolf *(Institute of Photonics and Quantum Electronics)*
Sascha Muehlbrandt *(Institute of Photonics and Quantum Electronics and Institute of Microstructure Technology)*
Marco Weber *(Institute of Photonics and Quantum Electronics)*
Matthias Blaicher *(Institute of Photonics and Quantum Electronics and Institute of Microstructure Technology)*
Florian Boes *(Karlsruhe Institute of Technology)*
Hermann Massler *(Fraunhofer Institute for Applied Solid State Physics)*
Axel Tessmann *(Fraunhofer Institute for Applied Solid State Physics)*
Simon Nellen *(Fraunhofer Institute for Telecommunications)*
Thorsten Goebel *(Fraunhofer Institute for Telecommunications)*
Joachim Giesekus *(Fraunhofer Institute for Telecommunications)*
Martin Walther *(Fraunhofer Institute for Applied Solid State Physics)*
Thomas Zwick *(Karlsruhe Institute of Technology)*
Wolfgang Freude *(Institute of Photonics and Quantum Electronics)*
Sebastian Randel *(Institute of Photonics and Quantum Electronics)*
Christian Koos *(Institute of Photonics and Quantum Electronics and Institute of Microstructure Technology)*

MA4.2: 144 Gb/s Dual-Polarization Photonic Wireless Link Operating in the V-Band (Page 149)
Micah Jenkins *(Harris Corporation)*
Elias Soto *(Harris Corporation)*
Richard DeSalvo *(Harris Corporation)*

MA4.3: Recovery of Spectrally Overlapping QPSK Signals Using a Nonlinear Optoelectronic Filter (Page 151)
William Loh *(MIT Lincoln Laboratory)*
Siva Yegnanarayanan *(MIT Lincoln Laboratory)*
Kenneth E. Kolodziej *(MIT Lincoln Laboratory)*
Paul W. Juodawlkis *(MIT Lincoln Laboratory)*

MB4: PSSI Tutorial / Advances in Infrared Detectors 3:30-5:00 Salon II

MC4: Integrated Grating Based Lasers 3:30-5:00 Salon III

MD4: Nonlinear Fiber Propagation 3:30-5:00 Salon VI

Géraud Bouwmans *(Université Lille)*
Stephano Trillo *(Università di Ferrara)*
Francois Copie *(Université Lille)*
Alexandre Kudlinski *(Université Lille)*

ME4: Optical Network Design and Performance Optimization 3:30-5:00 Salon VII

ME4.1: Multi-Broker based Software-Define Optical Networks (Page 177)
Xiaoliang Chen *(University of California, Davis)*
Zuqing Zhu *(University of Science and Technology of China)*
Alberto Castro *(University of California)*
Roberto Proietti *(University of California)*
S.J.B. Yoo *(University of California)*

ME4.2: Metro-Scale Optical Access Supporting Service Convergence and SDN Controlled Reconfigurability (Page 179)
Giuseppe Talli *(Tyndall National Institute)*
Stefano Porto *(Tyndall National Institute)*
Daniel Carey *(Tyndall National Institute)*
Nicola Brandonisio *(Tyndall National Institute)*
Peter Ossieur *(Tyndall National Institute)*
Frank Slyne *(CONNECT Research Center)*
Seamas McGettrick *(CONNECT Research Center)*
Christian Blümm *(CONNECT Research Center)*
Marco Ruffini *(CONNECT Research Center)*
Alan Hill *(CONNECT Research Center)*
David Payne *(CONNECT Research Center)*
Paul Townsend *(Tyndall National Institute)*

ME4.3: Performance Optimization of 64QAM for Next-Generation High Capacity Transmission Link (Page N/A)
Stephen Ralph *(Georgia Institute of Technology, Atlanta, GA, US)*

MF4: Coupling & Multilayer Integration 3:30-5:00 Salon VIII

MF4.1: Multilayer Silicon Integrated Photonic Platforms for 3D Photonic Devices and Circuits (Page 181)
Joyce K.S. Poon *(University of Toronto)*

MF4.2: Scalable Broadband Optical Interface for Silicon Photonics to Fiber Coupling using Polymer Waveguides (N/A)
Roger Dangel *(IBM Research - Zurich)*
Antonio La Porta *(IBM Research - Zurich)*
Daniel Jubin *(IBM Research - Zurich)*
Norbert Meier *(IBM Research - Zurich)*
Folkert Horst *(IBM Research - Zurich)*
Bert Jan Offrein *(IBM Research - Zurich)*

MF4.3: Monolithic Integration of Waveguide Photodiodes (WGPD) with Vertically Integrated AlGaAs Waveguides (Page 185)
Zhongfa Liao *(University of Toronto)*
J. Stewart Aitchison *(University of Toronto)*

MF4.4: Passive Tuning of Optical Couplers Using a Thin-Film Cladding Material (Page 187)
Ugochukwu J. Nsofor *(University of Delaware)*
Peng L. Yao *(Phase Sensitive Innovation Inc.)*
Shouyuan Shi *(University of Delaware)*
Dennis W. Prather *(University of Delaware)*

MF4.5: Beam Deflection on Optical Phased Arrays with Electro-optic Polymer Waveguides (Page 191)
Yoshikuni Hirano *(Science and Technology Research Laboratories)*
Yasushi Motoyama *(Science and Technology Research Laboratories)*
Katsu Tanaka *(Science and Technology Research Laboratories)*
Kenji Machida *(Science and Technology Research Laboratories)*
Hiroshi Kikuchi *(Science and Technology Research Laboratories)*
Toshiki Yamada *(National Institute of Information and Communications Technology)*
Akira Otomo *(National Institute of Information and Communications Technology)*

MH4: Nonlinear Optics in the Mid-infrared 3:30-5:15 Poinsettia/ Quince

MH4.1: Generation and Characterization of a Single-cycle Laser Pulse (Page 193)
Kyung Taec Kim *(Institute of Basic Science and Gwangju Institute of Science and Technology)*
Sung In Hwang *(Institute of Basic Science)*
Seung Beom Park *(Institute of Basic Science)*
Kyungseung Kim *(Institute of Basic Science)*
Wosik Cho *(Institute of Basic Science and Gwangju Institute of Science and Technology)*
Igor Ivanov *(Institute of Basic Science)*
Chang Hee Nam *(Institute of Basic Science and Gwangju Institute of Science and Technology)*

MH4.2: Regenerative Multi-Tone Injection Locking for Linewidth Enhancement and Repetition Rate Stabilization of a PIC Mode-Locked Laser (Page 195)
Ricardo Bustos Ramirez *(University of Central Florida)*
Michael E. Plascak *(University of Central Florida)*
Kristina Bagnell *(University of Central Florida)*

Ashish Bhardwaj *(Infinera Corporation)*
James Ferrara *(Infinera Corporation)*
Gloria Hoefler *(Infinera Corporation)*
Ming C. Wu *(University of California at Berkeley)*
Peter J. Delfyett *(University of Central Florida)*

MH4.3: InP Integrated Pulse Shaper with 48 Channel, 50 GHz Spacing Amplitude and Phase Control (Page 197)
Keith McKinzie *(Purdue University)*
Daniel Leaird *(Purdue University)*
David Mathine *(Infinera Corporation)*
Maria Anagnosti *(Infinera Corporation)*
Gloria Hoefler *(Infinera Corporation)*
Ziyun Kong *(Purdue University)*
Chengying Bao *(Purdue University)*
Vikrant Lal *(Infinera Corporation)*
Amir Hosseini *(Infinera Corporation)*
Fred Kish *(Infinera Corporation)*
Andrew Weiner *(Purdue University)*

MH4.4: Widely Tunable Mid-infrared Wavelength Converters Based on Chalcogenide Microwires (Page 199)
Lizhu Li *(McGill University)*
Nurmemet Abdukerim *(McGill University)*
Martin Rochette *(McGill University)*

MH4.5: Characteristics of a 40 GHz Asynchronous Harmonic Mode-locked Er-doped Fber Laser (Page 201)
Chih-Chieh Wen *(National Chiao Tung University)*
Cheng-Jhih Luo *(National Chiao Tung University)*
Sheng-Min Wang *(National Chiao Tung University)*
Yinchieh Lai *(National Chiao Tung University)*

MH4.6: Dual Repetition-rate Harmonically Mode-locked Fiber Laser Using Intracavity Temporal Talbot Effect (Page 203)
Mohamed Seghilani *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*
Reza Maram *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*
Luis Romero Cortés *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*
José Azaña *(Institut National de la Recherche Scientifique-Energie, Matériaux et Télécommunications)*

TuA1: Microwave Photonic Signal Processing 8:30-10:00 Salon I

TuA1.1: Sub-sampled Optical Techniques for Wideband Spectral Monitoring (Page 205)
Jason T. McKinney *(U.S. Naval Research Laboratory)*
Ross Schermer *(U.S. Naval Research Laboratory)*

TuA1.2: Real-time Fourier Transformation Based on Photonic Reservior (Page 207)
Jilong Li *(Beijing University of Posts and Telecommunications)*
Zhiqiang Qin *(Beijing University of Posts and Telecommunications)*
Yitang Dai *(Beijing University of Posts and Telecommunications)*
Feifei Yin *(Beijing University of Posts and Telecommunications)*
Kun Xu *(Beijing University of Posts and Telecommunications)*

TuA1.3: Photonic Generation of Simultaneous Multiple Chirped Microwave Waveforms (Page 209)
Parisa Moslemi *(McGill University)*
Lawrence R. Chen *(McGill University)*
Martin Rochette *(McGill University)*

TuA1.4: Photonic Generation of Microwave Arbitrary Waveforms Based on Gain-Transparent SBS-Induced Phase Shift (Page 211)
Jie Liu *(The Chinese University of Hong Kong)*
Chaoran Huang *(The Chinese University of Hong Kong)*
Chester Shu *(The Chinese University of Hong Kong)*

TuA1.5: Photonic Downsampling Receiver or Millimeter-Wave Communications (Page 213)
Jean H. Kalkavage *(Johns Hopkins University Applied Physics Laboratory)*
Keith G. Petrillo *(Johns Hopkins University Applied Physics Laboratory)*
Eric J. Adles *(Johns Hopkins University Applied Physics Laboratory)*
Thomas R. Clark *(Johns Hopkins University Applied Physics Laboratory)*

TuB1: Microresonator Fabrication Methods 8:30-10:00 Salon II

TuB1.1: Miniaturized High-Q Silicon Nitride Resonators at Visible Wavelengths (Page 217)
Hesam Moradinejad *(Georgia Institute of Technology.)*
Murtaza Askari *(Sinoora Inc.)*
Amir H. Atabaki *(Sinoora Inc.)*
Zhixuan Xia *(Sinoora Inc.)*
Ali A. Eftekhar *(Georgia Institute of Technology and Sinoora Inc.)*
Ali Adibi *(Georgia Institute of Technology)*

TuB1.2: Integrated Polarization-Selective Microring Resonators and Beam Taps via Topographically Anisotropic Photonics (Page 219)
Tracy Sjaardema *(University of Central Florida)*
Jeff Chiles *(University of Central Florida)*
Ashutosh Rao *(University of Central Florida)*
Sasan Fathpour *(University of Central Florida)*

TuB1.3: Characterization of Lithium Niobate Microdisk Resonators with Grating Couplers (Page 221)
Arunita Kar *(University of Illinois)*
Anming Gao *(University of Illinois)*
Lynford L. Goddard *(University of Illinois)*
Songbin Gong *(University of Illinois)*

TuB1.4: Fully Integrated Lithium Niobate Electro-Optic Modulator based on Asymmetric Mach-Zehnder Interferometer Etched in LNOI Platform (Page 223)
Mohamed Mahmoud *(Carnegie Mellon University)*
Christian Bottenfield *(Carnegie Mellon University)*
Lutong Cai *(Carnegie Mellon University)*
Gianluca Piazza *(Carnegie Mellon University)*

TuB1.5: Realization of High-Q cavities and Lasers using Soft Nano Imprinting Lithography (Page 215)
Jacob Scheuer *(Tel Aviv University)*
Ofer Bar-On *(Tel Aviv University)*
Philipp Brenner *(Karlsruhe Institute of Technology)*
Raz Gvishi *(Soreq NRC)*
Uli Lemmer *(Karlsruhe Institute of Technology)*

TuC1: Nanomaterials and Displays 8:30-10:00 Salon III

TuC1.1: Colloidal APbX3 Nanocrystals [A=Cs+, CH3NH3+, CH(NH2)2+, X=Cl, Br, I] with Bright Photoluminescence Spanning from Ultraviolet to Near-infrared Spectral Regions (Page 225)
Maksym Kovalenko *(ETH Zurich)*

TuC1.2: Graphene-enabled Electrochromic Displays on Paper (Page N/A)
Coskun Kocabas *(Bilkent University)*

TuC1.3: The Effect of Fourth Color Component on Enhancement of Color Gamut (Page 227)
Sinan Genc *(Abdullah Gul University)*
Mustafa Uguz *(Arcelik A.Ş.)*
Evren Mutlugun *(Abdullah Gul University)*

TuD1: GaSb- and GaN-based VCSELs 8:30-10:00 Salon VI

TuD1.1: Analysis of GaSb-based Vertical Cavity Surface Emitting Lasers at λ = 3.93 μm (Page 229)
Ganpath Kumar Veerabathran *(Walter Schottky Institute)*
Stephan Sprengel *(Walter Schottky Institute)*
Alexander Andrejew *(Walter Schottky Institute)*
Markus-Christian Amann *(Walter Schottky Institute)*

TuD1.2: High-Performance GaN-based VCSELs (Page N/A)
Tetsuya Takeuchi *(Meijo University)*
Satoshi Kamiyama *(Meijo University)*
Motoaki Iwaya *(Meijo University)*
Isamu Akasaki *(Meijo University)*

TuD1.3: Design Analysis of Subwavelength Grating Mirror for GaN Based VCSELs Structure (Page 231)
Austin M. Slosberg *(Lehigh University)*
Nelson Tansu *(Lehigh University)*

TuD1.4: Nonpolar GaN-Based Vertical-Cavity Surface-Emitting Lasers (Page 233)
Charles A. Forman *(University of California, Santa Barbara)*
SeungGeun Lee *(University of California, Santa Barbara)*
Erin C. Young *(University of California, Santa Barbara)*
John T. Leonard *(University of California, Santa Barbara)*
Daniel A. Cohen *(University of California, Santa Barbara)*
Benjamin P. Yonkee *(University of California, Santa Barbara)*
Tal Margalith *(University of California, Santa Barbara)*
Robert M. Farrell *(University of California, Santa Barbara)*
Steven P. DenBaars *(University of California, Santa Barbara)*
James S. Speck *(University of California, Santa Barbara)*
Shuji Nakamura *(University of California, Santa Barbara)*

TuE1: Label-Free Super-Resolution: Novel Approaches II 8:30-9:00 Salon VII

TuE1.1: Plasmonic Nanoantennas for Nanoscale confinement of Light and Enhanced Biosensing (Page N/A)
Jerome Wenger *(CNRS, Institut Fresnel, Aix Marseille Université, Marseille, France)*

TuE1.2: Plasmonics Enhanced Super-resolution Microscopy (Page N/A)
Zhaowei Liu *(University of California, San Diego)*

TuF1: Image Communications 8:30-10:00 Salon VIII

TuF1.1: Modulation and Coding For Image Sensor Communication (Page 235)
Koji Kamakura *(Chiba Institute of Technology)*
Takaya Yamazato *(Nagoya University)*

TuF1.2: Performance of Image Sensor Communication (Page 237)
Wei Huang *(University of Science and Technology of China)*
Zhengyuan Xu *(University of Science and Technology of China)*

TuF1.3: An Adaptive Threshold Decoding Algorithm for Visible Light Communication Data Recovery from

LED-Based Display Systems (Page 239)
Liusheng Sun *(Hong Kong University of Science and Technology)*
Xianbo Li *(Hong Kong University of Science and Technology)*
Babar Hussain *(Hong Kong University of Science and Technology)*
C. Patrick Yue *(Hong Kong University of Science and Technology)*

TuF1.4: Visible Light Communication Based on CPM-OFDM with Chaotic Interleaving Scheme (Page 241)
Hossien B. Eldeeb *(Cairo University)*
Hossam A.I. Selmy *(Cairo University)*
Hany M. Elsayed *(Cairo University)*
Fathi E. Abd El-Samie *(Cairo University)*
Ragia I. Badr *(Cairo University)*

TuF1.5: Enhanced Disturbance Observer based on Acceleration Measurement for Fast Steering Mirror Systems (Page 243)
Chao Deng *(Chinese Academy of Sciences/University of Chinese Academy of Science)*
Tao Tang *(Chinese Academy of Sciences)*
Yao Mao *(Chinese Academy of Sciences)*
Ge Ren *(Chinese Academy of Sciences)*

TuG1: III-V Photonic Materials 8:30-10:00 Kahiki/Lily

TuG1.1: Mid-infrared Quantum Well Lasers on Multi-functional Metamorphic Buffers (Page 251)
Daehwan Jung *(Yale University)*
Lan Yu *(University of Illinois at Urbana-Champaign)*
Sukrith Dev *(University of Illinois at Urbana-Champaign)*
Daniel Wasserman *(University of Illinois at Urbana-Champaign)*
Minjoo Larry Lee *(Yale University)*

TuG1.2: Bright Single InAs Quantum Dots at Telecom Wavelengths in Site-selective InP Nanowires (Page 253)
Sofiane Haffouz *(National Research Council Canada)*
Dan Dalacu *(National Research Council Canada)*
Philip J. Poole *(National Research Council Canada)*
Khaled Mnaymneh *(National Research Council Canada)*
Jean Lapointe *(National Research Council Canada)*
Geof C. Aers *(National Research Council Canada)*
Daniel Poitras *(National Research Council Canada)*
Robin L. Williams *(National Research Council Canada)*

TuG1.3: Growth and Characterization of III/V Nano Ridge Laser on Si Substrate (Page N/A)
Bernardette Kunert *(Imec)*
Yves Mols *(Imec)*
Yuting Shi *(Ghent University)*
Dries Van Thourhout *(Ghent University)*
Marianna Pantouvaki *(Imec)*
Joris Van Campenhout *(Imec)*
Robert Langer *(Imec)*

TuG1.4: Lattice-matched AlInN/GaN Digital Alloy for Mid- and Deep-Ultraviolet Applications (Page 255)
Wei Sun *(Lehigh University)*
Chee-Keong Tan *(Clarkson University)*
Nelson Tansu *(Lehigh University)*

TuG1.5: Investigation of Refractive Index in Dilute-P GaNP Alloys by First-Principle (Page 257)
Damir Borovac *(Lehigh University)*
Chee-Keong Tan *(Clarkson University and Lehigh University)*
Nelson Tansu *(Lehigh University)*

TuH1: Extreme Non-linear Optics 8:30-10:00 Poinsettia/ Quince

TuH1.1: Towards 10 TW Few-cycle Infrared Pulses Using Frequency Domain Optical Parametric Amplification (FOPA) (Page 259)
V. Gruson *(Centre Énergie Matériaux et Télécommunications and The Ohio State University)*
G. Ernotte *(Centre Énergie Matériaux et Télécommunications)*
P. Lassonde *(Centre Énergie Matériaux et Télécommunications)*
L. Di Mauro *(The Ohio State University)*
P. Corkum *(University of Ottawa and National Research Council of Canada)*
H. Ibrahim *(Centre Énergie Matériaux et Télécommunications)*
B. Schmidt *(Centre Énergie Matériaux et Télécommunications)*
F. Légaré *(Centre Énergie Matériaux et Télécommunications)*

TuH1.2: Amplifie Octave-spanning Supercontinuum from Chalcogenide Waveguides for Second-harmonic Generation (Page 261)
Marcin Malinowski *(University of Central Florida)*
Jean-Etienne Tremblay *(University of California, Berkeley)*
Guillermo F.C. Gonzales *(University of Central Florida)*
Ashutosh Rao *(University of Central Florida)*
Saeed Khan *(University of Central Florida)*
Po-Kai Hsu *(University of California, Berkeley)*
Anupama Yadav *(University of Central Florida)*
Kathleen A. Richardson *(University of Central Florida)*
Peter Delfyett *(University of Central Florida)*

Ming C. Wu *(University of California, Berkeley)*
Sasan Fathpour *(University of Central Florida)*

TuH1.3: Broadband Supercontinuum Generation in Highly Nonlinear Fiber with Carbon-Nanotube-based Passively Mode-Locked Erbium-Doped Fiber Laser (Page 263)
Yemineni Sivasankara Rao *(Nanyang Technological University)*
Arokiaswami Alphones *(Nanyang Technological University)*
Shum Ping *(Nanyang Technological University)*

TuH1.4: Extreme Nonlinear Optics Using Strong Mid-infrared Laser Pulses (Page 265)
Kyung-Han Hong *(Massachusetts Institute of Technology)*

TuA2: MWP Tutorial & Photonic Integrated Circuits for Microwave Photonics 10:30-12:00 Salon I

TuA2.1: Photonic Integrated Circuits for Microwave Photonics (Page N/A)
Jianping Yao *(University of Ottawa)*

TuB2: Super-resolution, Lasing, and Sensing with Microresonators 10:30-12:00Salon II

TuB2.1: Microspherical Nanoscopy: Mechanisms of Super-resolution (Page N/A)
Vasily Astratov *(University of North Carolina at Charlotte)*
A. Brettin *(University of North Carolina at Charlotte)*
F. Abolmaali *(University of North Carolina at Charlotte)*
A. Maslov *(of Nizhny Novgorod, Nizhny Novgorod, Russia)*
N. Limberopoulos *(Air Force Research Laboratory)*
A. Urbas *(Air Force Research Laboratory)*

TuB2.2: Yb-doped and Raman Microbottle Lasers (Invited) (Page 269)
Shahab Bakhtiari Gorajoobi *(University of Southampton)*
Michalis N. Zervas *(University of Southampton)*

TuB2.3: Surface Nanoscale Axial Photonics (SNAP) at the Silica Microcapillary with Ultrathin Wall (Page 271)
Tabassom Hamidfar *(Concordia University and Aston University)*
Artemiy Dmitriev *(Concordia University)*
Brian Magdan *(OFS Laboratories)*
Pablo Bianucci *(Concordia University)*
Misha Sumetsky *(Aston University)*

TuB2.4: Comparative Study for Coupled High-Q Cavity Quantum Dot System (Page 273)
Alperen Tüğen *(Middle East Technical University)*
Serdar Kocaman *(Middle East Technical University)*

TuC2: Lighting and Beyond 10:30-12:00 Salon III

TuC2.1: Pathways to Ultra-efficient Solid-state Lighting (Page N/A)
Jon Wierer *(Lehigh University)*

TuC2.2: The New World of Lighting: Solid State Lighting and Beyond (Page N/A)
Jeff Tsao *(Sandia National Lab)*

TuC2.3: Engineering the Internal Quantum Efficiency of GaN:Eu based Red Light Emitting Diodes (Page 275)
Ioannis E. Fragkos *(Lehigh University)*
Chee-Keong Tan *(Clarkson University and Lehigh University)*
Volkmar Dierolf *(Lehigh University)*
Yasufumi Fujiwara *(Osaka University)*
Nelson Tansu *(Lehigh University)*

TuC2.4: LED Lights with Hidden Intensity-Modulated Blue Channels for Enhanced Subconscious Visual Responses (Page 277)
Garen Vartanian *(University of Michigan)*
Kwoon Y. Wong *(University of Michigan)*
Pei-cheng Ku *(University of Michigan)*

TuD2: Novel Fiber Technologies I 10:30-12:00 Salon VI

TuD2.1: Novel Hollow Core Fibers for Ultra-high Power Delivery (Page 279)
Natalie V. Wheeler *(University of Southampton)*
Yong Chen *(University of Southampton)*
John R. Hayes *(University of Southampton)*
Thomas D. Bradley *(University of Southampton)*
Hans C.H. Mulvad *(University of Southampton)*
Seyed Abokhamis Mousavi *(University of Southampton)*
Seyed R. Sandoghchi *(University of Southampton)*
Marcelo A. Gouveia *(University of Southampton)*
Eric Numkam *(University of Southampton)*
Gregory T. Jasion *(University of Southampton)*
Mubassira B.S. Nawazuddin *(University of Southampton)*
Peter Horak *(University of Southampton)*
Shaiful U. Alam *(University of Southampton)*
Marco N. Petrovich *(University of Southampton)*
Francesco Poletti *(University of Southampton)*

David J. Richardson *(University of Southampton)*

TuD2.2: Multi-wavelength Brillouin Tm3+-doped Fiber Laser at 1873 nm Using a Linear Cavity (Page 281)
Chenglai Jia *(McGill University)*
Jinghao Qiao *(McGill University)*
Nurmemet Abdukerim *(McGill University)*
Martin Rochette *(McGill University)*
Lawrence R. Chen *(McGill University)*

TuD2.3: Numerical Analysis of Misalignment Effects in Few-mode Multi-core Fiber Systems (Page 283)
Werner Klaus *(National Institute of Information and Communications Technology)*
Simon Rommel *(National Institute of Information and Communications Technology and Technical University of Denmark)*
Jose Manuel Delgado Mendinueta *(National Institute of Information and Communications Technology)*
Jun Sakaguchi *(National Institute of Information and Communications Technology)*
Paul Mitchell *(Optoscribe Ltd.)*
Nicholas Psaila *(Optoscribe Ltd.)*
Juan Jose Vegas Olmos *(Mellanox Technologies)*
Idelfonso Tafur Monroy *(Technical University of Denmark)*
Yoshinari Awaji *(National Institute of Information and Communications Technology)*
Naoya Wada *(National Institute of Information and Communications Technology)*

TuD2.4: Fabrication of a Gradient-Index Optical Fiber Lens by Focused Ion Beam (Page 285)
Henrik Melkonyan *(Masdar Institute)*
Karen Sloyan *(Masdar Institute)*
Paulo Moreira *(Masdar Institute)*
Marcus S. Dahlem *(Masdar Institute)*

TuD2.5: Continuous Fabrication of Metal-coated Optical Fiber for Distributed Sensing (Page 287)
Xuan Ke *(Jianghan University)*
Wei Xu *(Broadband Photonics Inc. and Jianghan University)*

TuE2: Coherence-based Imaging 10:30-12:00 Salon VII

TuE2.1: Light Scattering Characterization of Viscoelastic Modulations in Biopolymer hydrogels (Page 289)
Jose Rafael Guzman-Sepulveda *(University of Central Florida)*
Jinan Deng *(University of Central Florida)*
Jiyu Fang *(University of Central Florida)*
Aristide Dogariu *(University of Central Florida)*

TuE2.2: Local Polarization Properties of Human Anterior Segment with Single-measurement, Full-range Polarization-sensitive OCT (Page 291)
Karol Karnowski *(University of Western Australi)*
Qingyun Li *(University of Western Australi)*
Martin Villiger *(Massachusetts General Hospital)*
David D. Sampson *(University of Western Australi)*

TuE2.3: Differentiation of Biological Cells Using Optical Coherence Tomography: in Silico Study (N/A)
Pawel Ossowski *(Nicolaus Copernicus University)*
Maciej Wojtkowski *(Polish Academy of Sciences)*
Peter R.T. Munro *(University College London)*

TuE2.4: Dynamic Biological Systems Characterization Using non-Stationary Stochastic Optical Probe (Page 295)
Milad I. Akhlaghi *(University of Central Florida)*
Lucia Cilenti *(University of Central Florida)*
Antonis S. Zervos *(University of Central Florida)*
Aristide Dogariu *(University of Central Florida)*

TuE2.5: Definitive Depolarization Signatures in Nanomedicine (Page 297)
Norman Lippok *(Harvard Medical School and Massachusetts General Hospital)*
Martin Villiger *(Harvard Medical School and Massachusetts General Hospital)*
Alexandre Albanese *(Massachusetts Institute of Technology)*
Eelco F.J. Meijer *(Harvard Medical School and Edwin L. Steele Laboratories)*
Kwanghun Chung *(Massachusetts Institute of Technology)*
Timothy P. Padera *(Harvard Medical School and Edwin L. Steele Laboratories)*
Sangeeta N. Bhatia *(Massachusetts Institute of Technology)*
Brett E. Bouma *(Harvard Medical School, Massachusetts General Hospital and Massachusetts Institute of Technology)*

TuE2.6: Imaging Reflectivity Profiles with Random Axial Encoding (Page 299)
Martin Villiger *(Harvard Medical School and Massachusetts General Hospital)*
Pui-Chuen Hui *(Harvard Medical School and Massachusetts General Hospital)*
Néstor Uribe-Patarroyo *(Harvard Medical School and Massachusetts General Hospital)*
Brett E. Bouma *(Harvard Medical School and Massachusetts General Hospital)*

TuF2: Systems and Modulation 1 10:30-12:00 Salon VIII

TuF2.1: High Data Rate Optical Wireless Communications (Page N/A)
Dominic O'Brien *(University of Oxford)*

TuF2.2: Modulation Optimization for Visible Laser Light Communication Systems (Page 301)
Li Wang *(HKUST-Qualcomm Lab)*
Babar Hussain *(HKUST-Qualcomm Lab)*
Xianbo Li *(HKUST-Qualcomm Lab)*
C. Patrick Yue *(HKUST-Qualcomm Lab)*

TuF2.3: High Speed Visible Light Communication Based on Advanced Modulation (Page 305)

Nan Chi *(Fudan University)*
Yingjun Zhou *(Fudan University)*
Mengjie Zhang *(Fudan University)*
Jianyang Shi *(Fudan University)*
Yiguang Wang *(Fudan University)*
Xingxing Huang *(Fudan University)*

TuG2: Photonic Integration on Silicon 10:30-12:15 Kahiki/Lily

TuG2.1: Antimony based Mid-Infrared Semiconductor Materials and Devices Monolithically Grown on Silicon Substrates (Page 307)
Peter J. Carrington *(Lancaster University)*
Evangelia Delli *(Lancaster University)*
Peter Hodgson *(Lancaster University)*
Eva Repiso *(Lancaster University)*
Adam Craig *(Lancaster University)*
Andrew Marshall *(Lancaster University)*
Anthony Krier *(Lancaster University)*

TuG2.2: A Comparison of Bonding and Epitaxial Growth for Heterogeneous Photonic Integrated Circuits (Page 309)
John E. Bowers *(University of California, Santa Barbara)*

TuG2.3: Analysis of Homogeneous Broadening in N-type Doped Ge Layers on Si for Laser Application (Page 311)
Srinivasan A. Srinivasan *(Imec and Ghent University)*
Clement Porret *(Imec)*
Marianna Pantouvaki *(Imec)*
Yosuke Shimura *(Imec and Shizuoka University)*
Pieter Geiregat *(Ghent University)*
Roger Loo *(Imec)*
Joris Van Campenhout *(Imec)*
Dries Van Thourhout *(Ghent University)*

TuG2.4: Mid-infrared Supercontinuum Generation in High-contrast, Fusion-bonded Silicon Membrane Waveguides (Page 313)
Jeff Chiles *(University of Central Florida)*
Xin Gai *(Australian National University)*
Barry Luther-Davies *(Australian National University)*
Sasan Fathpour *(University of Central Florida)*

TuH2: Digital Signal Processing I 10:30-12:00 Poinsettia/ Quince

TuH2.1: Artificial Neural Networks for Linear and Non-Linear Impairment Mitigation (Page N/A)
Jose Manuel Estara Tolosa *(Nokia Bell Labs)*

TuH2.2: Silicon Photonics Enabled SSBI Cancellation (Page 315)
Mingyang Lyu *(Laval University)*
Leslie A. Rusch *(Laval University)*

TuH2.3: SiP IQ Modulator Linearization by Memory Polynomial Pre-distortion Model (Page 317)
Sasan Zhalehpour *(Laval University)*
Jiachuan Lin *(Laval University)*
Leslie A. Rusch *(Laval University)*

TuH2.4: Blind Polarization Identification and Demultiplexing using Statistical Learning (Page 319)
Siddharth Varughese *(Georgia Institute of Technolog)*
Jerrod Langston *(Georgia Institute of Technolog)*
Stephen E. Ralph *(Georgia Institute of Technolog)*
Richard DeSalvo *(Harris Corporation)*

TuH2.5: Multicarrier Approaches for High-Baudrate Optical-Fiber Transmission Systems with a Single Coherent Receiver (Page 321)
Tu T. Nguyen *(University of Mons)*
Son T. Le *(Nokia Bell Labs)*
Qinwei He *(Aachen University)*
Ludo V. Compernolle *(Proximus SA.)*
Marc Wuilpart *(University of Mons)*
Patrice Megret *(University of Mons)*

TuI2: High-power Lasers and Applications 10:30-12:00 Salon IV

TuI2.1: kW-class Picosecond and Nanosecond Lasers at Hilase for Hi-tech Industrial Applications (Page 333)
Martin Smrž *(Hilase centre, IOP AS CR v.v.i)*
Martin Divoký *(Hilase centre, IOP AS CR v.v.i)*
Jiří Mužík *(Hilase centre, IOP AS CR v.v.i)*
Ondřej Novák *(Hilase centre, IOP AS CR v.v.i)*
Michal Chyla *(Hilase centre, IOP AS CR v.v.i)*
Jan Pilař *(Hilase centre, IOP AS CR v.v.i)*
Martin Hanuš *(Hilase centre, IOP AS CR v.v.i)*
Antonio Lucianetti *(Hilase centre, IOP AS CR v.v.i)*
Akira Endo *(Hilase centre, IOP AS CR v.v.i)*
Tomáš Mocek *(Hilase centre, IOP AS CR v.v.i)*

TuI2.2: Space-time Metrology and Control of High-power Femtosecond Lasers (Page 335)

G. Pariente *(Université Paris-Saclay,)*
A. Jeandet *(Université Paris-Saclay,)*
A. Sainte-Marie, *(Université Paris-Saclay,)*
A. Borot *(Université Paris-Saclay,)*
O. Gobert *(Université Paris-Saclay,)*
F. Quéré *(Université Paris-Saclay,)*

TuI2.3: High-brightness Electron and Radiation Sources From a Cascaded Laser Wakefield Accelerator (Page N/A)
Jiansheng Liu *(Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences)*

TuA3: Label-Free Super-Resolution: Novel Approaches III 1:30-2:30 Salon I

TuA3.1: Super Resolution Microscopy Techniques Based on Plasmonics and Transformation Optics (Page N/A)
Igor Smolyaninov *(University of Maryland)*
Vera Smolyaninova *(Towson University)*

TuA3.2: Super-resolution Imaging Based on Plasmonic Scattering (Page N/A)
Shi-Wei Chu *(National Taiwan University)*

TuB3: Optical Microresonator Frequency Combs and Laser Stabilization 1:30-2:30 Salon II

TuB3.1: Crystalline and Liquid Whispering Gallery Mode Resonators for Laser Stabilization and Sensing (Page 337)
Simone Borri *(Università di Firenze)*
Saverio Avino *(CNR-INO, c/o Comprensorio Olivetti)*
Mario Siciliani de Cumis *(ASI)*
Antonio Giorgini *(CNR-INO, c/o Comprensorio Olivetti)*
Pietro Malara *(CNR-INO, c/o Comprensorio Olivetti)*
Giacomo Insero *(CNR-INO, c/o Comprensorio Olivetti)*
Gabriele Santambrogio *(Università di Firenze and Istituto Nazionale di Ricerca Metrologica)*
Anatoliy Savchenkov *(OEwaves Inc.)*
Danny Eliyahu *(OEwaves Inc.)*
Vladimir Ilchenko *(OEwaves Inc.)*
Andrey Matsko *(OEwaves Inc.)*
Lute Maleki *(OEwaves Inc.)*
Gianluca Gagliardi *(CNR-INO, c/o Comprensorio Olivetti)*
Paolo De Natale *(CNR-INO, c/o Comprensorio Olivetti)*

TuB3.2: Nanomaterial-enhanced Microcavity-based Frequency Combs (Page 339)
Andrea M. Armani *(University of Southern California)*
Xiaoqin Shen *(University of Southern California, Los Angeles)*
Vinh Diep *(University of Southern California, Los Angeles)*
Dongyu Chen *(University of Southern California, Los Angeles)*
Vladan Jankovic *(Northrop Grumman)*
Brock Hudnut *(University of Southern California, Los Angeles)*
Soheil Soltani *(University of Southern California, Los Angeles)*
Andre Kovach *(University of Southern California, Los Angeles)*
Hyungwoo Choi *(University of Southern California, Los Angeles)*

TuB3.3: Full Stabilization and Control of an Integrated Photonics Optical Frequency Synthesizer (Page 341)
Daryl T. Spencer *(National Institute of Standards and Technology)*
Travis C. Briles *(National Institute of Standards and Technology)*
Tara Drake *(National Institute of Standards and Technology)*
Jordan Stone *(National Institute of Standards and Technology)*
Robert Ilic *(National Institute of Standards and Technology)*
Qing Li *(National Institute of Standards and Technology)*
Laura Sinclair *(National Institute of Standards and Technology)*
Daron Westly *(National Institute of Standards and Technology)*
Nathan Newbury *(National Institute of Standards and Technology)*
Kartik Srinivasan *(National Institute of Standards and Technology)*
Scott A. Diddams *(National Institute of Standards and Technology)*
Scott Papp *(National Institute of Standards and Technology)*
Aaron Bluestone *(University of California Santa Barbara)*
Tin Komljenovic *(University of California Santa Barbara)*
Nicolas Volet *(University of California Santa Barbara)*
Luke Theogarajan *(University of California Santa Barbara)*
John E. Bowers *(University of California Santa Barbara)*
Myoung-Gyun Suh *(California Institute of Technology)*
Ki Youl Yang *(California Institute of Technology)*
Seung Hoon Lee *(California Institute of Technology)*
Dong Yoon Oh *(California Institute of Technology)*
Kerry Vahala *(California Institute of Technology)*
Martin H.P. Pfeiffer *(Ecole Polytechnique Federale de Lausanne)*
Tobias J. Kippenberg *(Ecole Polytechnique Federale de Lausanne)*
Erik Norberg *(Aurrion Inc.)*

TuB3.4: Multispectral Optical Frequency Comb Based on Microresonator Faraday Instability (Page 343)
Shu-Wei Huang *(University of California Los Angeles)*
Abhinav K. Vinod *(University of California Los Angeles)*
Jinghui Yang *(University of California Los Angeles)*
Mingbin Yu *(Institute of Microelectronics)*

Dim-Lee Kwong *(Institute of Microelectronics)*
Chee Wei Wong *(University of California Los Angeles)*

TuC3: New Concepts in Lasers 1:30-2:30 Salon III

TuC3.1: Topological Insulator Lasers (Page N/A)
Mordechai Segev *(Technion)*
Gal Harari *(Technion)*
Miguel Bandres *(Technion)*
Steffen Wittek *(University of Central Florida)*
Hossein Hodaei *(University of Central Florida)*
Yaakov Lumer *(Technion)*
Mikhael Caleb Rechtsman *(Penn State)*
Mercedeh Khajavikhan *(University of Central Florida)*
Yidong Chong *(Nanyang Technical University)*
Demetri Christodoulides *(University of Central Florida)*

TuC3.2: PT-Symmetry Breaking of Topological Defect-states in SSH Micro-ring Laser Arrays (Page 345)
Steffen Wittek *(University of Central Florida)*
Midya Parto *(University of Central Florida)*
Hossein Hodaei *(University of Central Florida)*
Gal Harari *(Technion, Haifa)*
Miguel Bandres *(Technion, Haifa)*
Mikael C. Rechtsman *(Pennsylvania State University)*
Mordechai Segev *(Technion, Haifa)*
Demetrios Christodoulides *(University of Central Florida)*
Mercedeh Khajavikhan *(University of Central Florida)*

TuC3.3: Lasing in Micro- and Nano- Lasers (Page 347)
Weng Chow *(Sandia National Laboratories)*
S. Kreinberg *(Technische Universität Berlin)*
J. Wolters *(Technische Universität Berlin)*
S. Reitzenstein *(Technische Universität Berlin)*

TuC3.4: Towards Neuromorphic Photonic Networks with Vertical-Cavity Surface Emitting Lasers (Page 349)
Tao G. Deng *(University of Strathclyde)*
Joshua Robertson *(University of Strathclyde)*
Antonio Hurtado *(University of Strathclyde)*

TuD3: OFT Tutorial and Optics and Acoustics 1:30-3:00 Salon VI

TuD3.1: The Rise of Phononics: Harnessing Optoacoustic Interactions at Nanoscale (Page N/A)
Benjamin Eggleton *(University of Sydney, Australi)*

TuD3.2: Opto-mechanical Effects in Standard and Multi-core Fibers (Page N/A)
Avi Zadok *(Bar-Ilan University)*
Yair Antman *(Bar-Ilan University)*
Hilel H. Diamandi *(Bar-Ilan University)*
Yosef London *(Bar-Ilan University)*

TuE3: Volumetric Microscopy 1:30-2:30 Jonathan Liu

TuE3.1: IsoView: High-speed, Live Imaging of Large Biological Specimens with Isotropic Spatial Resolution (Page N/A)
Raghav Chhetri *(Janelia Farm)*

TuE3.2: Numerical Modeling of Illumination and Detection Methods for Light-sheet Microscopy of Optically Clear Biological Tissues (Page 351)
Adam K. Glaser *(University of Washington)*
Jonathan T.C. Liu *(University of Washington)*

TuE3.3: Single Shot Color Imaging Through Scattering Media Using a Monochromatic Camera (Page 353)
Sujit Kumar Sahoo *(Nanyang Technological University Singapore and National University of Singapore)*
Dongliang Tang *(Nanyang Technological University Singapore)*
Cuong Dang *(Nanyang Technological University Singapore)*

TuE3.4: Visualization of 3D Tissue Fiber Organization Using Optical Polarization Tractography (Page N/A)
GANG YAO *(University of Missouri)*

TuF3: Interconnect Subsystems 1:30-2:30 Salon VIII

TuF3.1: High-Speed VCSELs for OOK and Multilevel PAM Modulation (Page 355)
Anders Larsson *(Chalmers University of Technology)*
Johan S. Gustavsson *(Chalmers University of Technology)*
Erik Haglund *(Chalmers University of Technology)*
Emanuel P. Haglund *(Chalmers University of Technology)*
Tamas Lengyel *(Chalmers University of Technology)*
Ewa Simpanen *(Chalmers University of Technology)*

TuF3.2: 25-Gb/s Transmission Over 2.5-km SSMF by Silicon MRR Enhanced 1.55-μm III-V/SOIDML (Page 357)
Valentina Cristofori *(Technical Unversity of Denmark)*
Francesco Da Ros *(Technical Unversity of Denmark)*
Oskars Ozolins *(NETLAB, Acreo Swedish ICT)*

Mohamed E. Chaibi *(University of Rennes)*
Laurent Bramerie *(University of Rennes)*
Yunhong Ding *(Technical Unversity of Denmark)*
Xiaodan Pang *(NETLAB, Acreo Swedish ICT)*
Alexandre Shen *(III-V Lab)*
Antonin Gallet *(III-V Lab)*
Guang-Hua Duan *(III-V Lab)*
Karim Hassan *(CEA-Leti)*
Ségolene Olivier *(CEA-Leti)*
Sergei Popov *(KTH Royal Institute of Technology)*
Gunnar Jacobsen *(NETLAB, Acreo Swedish ICT)*
Leif K. Oxenløwe *(Technical Unversity of Denmark)*
Christophe Peucheret *(University of Rennes)*

TuF3.3: Low-loss and Broadband Polarization Splitter and Rotator and its Application in DWDM Receiver (Page 361)
Yingxuan Zhao *(Shanghai Institute of Microsystem and Information Technology and University of Chinese Academy of Science)*
Chao Qiu *(Chinese Academy of Science)*
Aimin Wu *(Shanghai Institute of Microsystem and Nantong Opto-Electronics Engineering Center Chinese Academy of Science)*
Zhen Sheng *(Shanghai Institute of Microsystem and Chinese Academy of Science)*
Haiyang Huang *(Shanghai Institute of Microsystem and Chinese Academy of Science)*
Jun Li *(Shanghai Institute of Microsystem and Information Technology)*
Wei Li *(Shanghai Institute of Microsystem and Information Technology)*
Xi Wang *(Shanghai Institute of Microsystem and Information Technology)*
Shichang Zou *(Shanghai Institute of Microsystem and Information Technology)*
Fuwan Gan *(Shanghai Institute of Microsystem and Information Technology and Chinese Academy of Science)*

TuF3.4: Some Advances on Optical Interconnects (Page 363)
Ning Li *(IBM)*
Tymon Barwicz *(IBM)*
William Green *(IBM)*
Devendra Sadana *(IBM)*

TuG3: Nanoscale Nonlinear Optics 1:30-2:30 Kahiki/Lily

TuG3.1: Taming the Dynamics of a Levitated Nanoparticle in Vacuum: From Bistability to Cooling (Page N/A)
Romain Quidant *(ICFO (Spain))*

TuG3.2: Second Harmonic Generation at the Nanoscale in Isolated and Coupled AlGaAs Nanodisks (Page 365)
D. Rocco *(University of Brescia)*
L. Ghirardini *(Politecnico di Milano)*
V. F. Gili *(Université Paris Diderot)*
L. Carletti *(University of Brescia)*
I. Favero *(Université Paris Diderot)*
A. Locatelli *(University of Brescia)*
M. Guasoni *(University of Southampton)*
M. Finazzi *(Politecnico di Milano)*
G. Leo *(Université Paris Diderot)*
M. Celebrano *(Politecnico di Milano)*
C. De Angelis *(University of Brescia)*

TuG3.3: Frequency Conversion with Integrated Aluminum Nitride Photonics (Page N/A)
Hong Tang *(Yale University)*

TuG3.4: Switching from Magnetic to Electric Dipole in Second Harmonic Generation from All-dielectric Nanoantennas (Page 367)
M. Guasoni *(University of Southampton)*
L. Carletti *(University of Brescia)*
D. Neshev *(The Australian National University)*
C. De Angelis *(University of Brescia)*

TuH3: Digital Signal Processing II 1:30-2:30 Poinsettia/ Quince

TuH3.1: Digital Back-propagation for Unrepeatered Transmission (Page 369)
Domaniç Lavery *(University College London)*

TuH3.2: Performance Limits of a Nonlinear Frequency Division Multiplexed System Due to the Raman Effect (Page 371)
Thiago D.S. DeMenezes *(North Dakota State University)*
Valentin Besse *(University Maryland, Baltimore County and Université du Maine)*
Chaoran Tu *(University Maryland, Baltimore County)*
Vladimir S. Grigoryan *(Ciena Corporation)*
Maurice O'Sullivan *(Ciena Corporation)*
Curtis R. Menyuk *(University Maryland, Baltimore County)*
Ivan T. Lima Jr. *(North Dakota State University)*

TuH3.3: Timing Mismatch Tolerance of 16QAM OFDM Based Spectrum Slicing Optical Transmission Systems (Page 373)
Tu T. Nguyen *(University of Mons)*
Son T. Le *(Nokia Bell Labs)*
Marc Wuilpart *(University of Mons)*

Patrice Mégret *(University of Mons)*

TuH3.4: Fiber-Optic Signal Processing Using Frequency Conversion for Optical Node (Page 375)
Tomoyuki Kato *(Fujitsu Laboratories Ltd.)*
Shigeki Watanabe *(Fujitsu Laboratories Ltd)*
Thomas Richter *(Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute)*
Robert Elschner *(Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute)*
Carsten Schmidt-Langhorst *(Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute)*
Colja Schubert *(Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute)*
Takeshi Hoshida *(Fujitsu Laboratories Ltd)*

TuJ4: Plenary I 3:30-5:00 Salon IV/V

TuJ4.1: Nonlinear Material Responses and Their Characterization (Page N/A)
Eric Van Stryland *(University of Central Florida)*

TuJ4.2: Semiconductor Nanowires for Optoelectronics Applications (Page 377)
Chennupati Jagadish *(Australian National University)*

WA1: Photonic Filters and Combs for Wideband Applications 8:30-10:00 Salon I

WA1.1: Dual-Comb Spectrometer for Fast Wideband RF Spectral Analysis (Page 379)
Anthony Klee *(Harris Corporation)*
Charles Middleton *(Harris Corporation)*
Richard DeSalvo *(Harris Corporation)*

WA1.2: Continuously Tunable and Reconfigurable Microwave Photonic Multiband Filter Based on Cascaded MZIs (Page 381)
Jia Ge *(University of Georgia)*
Mable P. Fok *(University of Georgia)*

WA1.3: Electro-Optic Comb Generation from Noise with a Photonically Filtered Optoelectronic Oscillator (Page 383)
Michael E. Plascak *(University of Central Florida)*
Ricardo Bustos Ramirez *(University of Central Florida)*
Kristina Bagnell *(University of Central Florida)*
Peter J. Delfyett *(University of Central Florida)*

WA1.4: Microcomb Based Microwave True-time-delay Beamforming (Page 385)
Xiaoxiao Xue *(Tsinghua University and Purdue University)*
Yi Xuan *(Purdue University)*
Chengying Bao *(Purdue University)*
Shangyuan Li *(Tsinghua University)*
Xiaoping Zheng *(Tsinghua University)*
Minghao Qi *(Purdue University)*
Andrew M. Weiner *(Purdue University)*

WA1.5: Application of Optical Frequency Combs in Extreme Bandwidth Signal Processing (Page 387)
Vahid Ataie *(University of California, San Diego)*
Evgeny Myslivets *(University of California, San Diego)*
Andreas O.J. Wiberg *(University of California, San Diego)*
Stojan Radic *(University of California, San Diego)*

WB1: Fundamentals and Advanced Applications of Microresonators 8:30-10:00 Salon II

WB1.1: An Integrated Ultra-High-Q Resonator for Optical Clocks, Synthesizers, Gyroscopes and Spectroscopy (Page 389)
Kerry Vahala *(California Institute of Technology)*
Ki Youl Yang *(California Institute of Technology)*
Dong Yoon Oh *(California Institute of Technology)*
Seung Hoon Lee *(California Institute of Technology)*
Xu Yi *(California Institute of Technology)*
Qi-Fan Yang *(California Institute of Technology)*

WB1.2: Wave Control in Non-Hermitian Disordered Media (Page 391)
Konstantinos G. Makris *(University of Crete)*
Andre Brandstötter *(Vienna University of Technology)*
Stefan Rotter *(Vienna University of Technology)*

WB1.3: Ultrasensitive Parity-time-symmetric Micro-ring Laser Gyroscope (Page 393)
Jinhan Ren *(University of Central Florida)*
Gal Harari *(Technion)*
Absar U. Hassan *(University of Central Florida)*
Weng Chow *(Sandia National Laboratories)*
Mohammad Soltani *(Raytheon BBN Technologies)*
Demetrios Christodoulides *(University of Central Florida)*
Mercedeh Khajavikhan *(University of Central Florida)*

WB1.4: Towards Electrically Injected Parity-time-symmetric Micro-ring Lasers (Page 395)
William E. Hayenga *(University of Central Florida)*
Midya Parto *(University of Central Florida)*
Hipolito Garcia-Gracia *(University of Central Florida)*
Enrique Sanchez-Cristobal *(University of Central Florida)*
Hossein Hodaei *(University of Central Florida)*

Patrick Likamwa *(University of Central Florida)*
Demetrios N. Christodoulides *(University of Central Florida)*
Mercedeh Khajavikhan *(University of Central Florida)*

WB1.5: Asymmetric Superimposed Optical Vortex Beam Emission at Exceptional Point (Page 397)
James Y.S. Tan *(Korea Advanced Institute of Science and Technology)*
Kyoungsik Yu *(Korea Advanced Institute of Science and Technology)*

WC1: Long Wavelength Lasers and Integration 8:30-10:00 Salon III

WC1.1: Monolithic III-V Laser Integration on Silicon (Page N/A)
Joris Van Campenhout *(IMEC)*

WC1.2: III-V Lasers Epitaxially Grown on Si (Page 401)
Eric Tournie *(University of Montpellier)*

WC1.3: Low Threshold Epitaxial InAs Quantum Dot Lasers on On-Axis GaP/Si (001) (Page 403)
Justin Norman *(University of California, Santa Barbara)*
Daehwan Jung *(University of California, Santa Barbara)*
MJ Kennedy *(University of California, Santa Barbara)*
Chen Shang *(University of California, Santa Barbara)*
Arthur C. Gossard *(University of California, Santa Barbara)*
John E. Bowers *(University of California, Santa Barbara)*

WC1.4: Room Temperature Operation of InAs Quantum Dot lasers Formed by Diblock-Copolymer Lithography and Selective Area MOCVD Growth (Page 405)
Honghyuk Kim *(University of Wisconsin - Madison)*
Wei Wei *(University of Wisconsin - Madison)*
Thomas F. Kuech *(University of Wisconsin - Madison)*
Padma Gopalan *(University of Wisconsin - Madison)*
Luke J. Mawst *(University of Wisconsin - Madison)*

WD1: Novel Fiber Technologies II 8:30-10:00 Salon VI

WD1.1: Few Photon Signal Processing and Detection in Paramteric Devices (Page 407)
Ana Pejkic *(University of California, San Diego)*

WD1.2: A Multi-core Fiber to Single-mode Fiber Side-polished Coupler (N/A)
H. Zhang *(University of Southampton)*
N. Healy *(Newcastle University)*
S. Dasgupta *(University of Southampton and Lightcue)*
R. Hayes *(University of Southampton)*
M. N. Petrovich *(University of Southampton)*
D. J. Richardson *(University of Southampton)*
A. C. Peacock *(University of Southampton)*

WD1.3: Modal Dispersion Characterization of Multimode Fibers (Page 411)
Ioannis Roudas *(Montana State University)*

WD1.4: Signatures of Exceptional Points in Statistical Non-Hermitian Optical Cavities (Page 413)
Ali K. Jahromi *(University of Central Florida)*
Absar U. Hassan *(University of Central Florida)*
Demetrios N. Christodoulides *(University of Central Florida)*
Ayman F. Abouraddy *(University of Central Florida)*

WD1.5: On-the-fly Real-time Optical Energy Spectrum Recognition System Based on Time-to-spectrum Convolution (Page 415)
Jeonghyun Huh *(Institut National de la Recherche Scientifique - Énergie, Matériaux et Télécommunications)*
José Azaña *(Institut National de la Recherche Scientifique - Énergie, Matériaux et Télécommunications)*

WE1: Type-II and Heterovalent Photodetectors 8:30-9:45 Salon VII

WE1.1: Simulation of Molecular Beam Epitaxy Type II Infrared Superlattice Growth (Page 417)
Christoph Grein *(University of Illinois)*
Bassem Tossoun *(University of Virginia)*
Ye Wang *(University of Virginia)*
Sadhvikas Addamane *(University of New Mexico)*
Ganesh Balakrishnan *(University of New Mexico)*
Archie Holmes, Jr. *(University of Virginia)*
Andreas Beling *(University of Virginia)*

WE1.3: Heterovalent II-VI and III-V Semiconductor Integration: A Platform for Solar Cell and Other Optoelectronic Device Applications (Page 421)
Yong-Hang Zhang *(Arizona State University)*

WF1: Sub-λ Interconnect Devices 8:30-10:00 Salon VIII

WF1.1: Plasmonic Interconnects - a Dense and Fast Interconnect Solution (Page N/A)
Juerg Leuthold *(ETH Zurich)*

WF1.2: Ultra-broadband Mode (de)multiplexer Based on a Sub-wavelength Engineered MMI Coupler (Page 423)
D. González-Andrade *(Instituto de Óptica Daza de Valdés (CSIC))*
A. V. Velasco *(Instituto de Óptica Daza de Valdés (CSIC))*
J. G. Wangüemert-Pérez *(Universidad de Málaga)*

A. Ortega-Moñux *(Universidad de Málaga)*
R. Halir *(Universidad de Málaga)*
P. Cheben *(National Research Council Canada)*

WF1.3: A Silicon Nitride Grating Coupler for Efficent Coupling bewteen Waveguide and Fiber (Page 425)
Chi Xu *(University of Central Florida)*
Mercedeh Khajavikhan *(University of Central Florida)*
Patrick LiKamWa *(University of Central Florida)*

WF1.4: From Semiconductor Nanolasers to Photonic Integrated Circuits (Page N/A)
Qing Gu *(The University of Texas at Dallas)*

WG1: Si Photonics 8:30-10:00 Kahiki/Lily

WG1.1: Development of Fully Three-dimensional Wavefront Matching Method and its Application to the Design of Ultrasmall Si Mode Converters (Page 427)
Yusuke Sawada *(Hokkaido University)*
Shuntaro Makino *(Hokkaido University)*
Takeshi Fujisawa *(Hokkaido University)*
Kunimasa Saitoh *(Hokkaido University)*

WG1.2: Silicon Photonics for Generating Photons (Page N/A)
Shayan Mookherjea *(University of California, San Diego)*

WG1.3: O-Band Sub-Wavelength Grating Coupler (Page 429)
Yun Wang *(McGill University)*
Luhua Xu *(McGill University)*
Amar Kumar *(McGill University)*
David Patel *(McGill University)*
Zhenping Xing *(McGill University)*
Rui Li *(McGill University)*
Md Ghulam Saber *(McGill University)*
Yannick D'Mello *(McGill University)*
Eslam EI-Fiky *(McGill University)*
David V. Plant *(McGill University)*

WG1.4: Quantum Optomechanical Control of Phonon Networks (Page N/A)
Amir Safavi Naeini *(Stanford University)*

WH1: Digital Signal Processing III 8:30-10:00 Poinsettia/ Quince

WH1.1: Nonlinear Digital Pre-Distortion of Transmitter Components (Page 431)
Pablo Wilke Berenguer *(Fraunhofer Institute for Telecommunications Heinrich Hertz Institute)*
Felix Frey *(Fraunhofer Institute for Telecommunications Heinrich Hertz Institute and Ulm University)*
Colja Schubert *(Fraunhofer Institute for Telecommunications Heinrich Hertz Institute)*
Johannes Karl Fischer *(Fraunhofer Institute for Telecommunications Heinrich Hertz Institute)*

WH1.2: Impact of Finite-resolution DAC and ADC on Probabilistically-shaped QAM Constellations (Page 433)
Dario Pilori *(Politecnico di Torino)*
Gabriella Bosco *(Politecnico di Torino)*
Chris Fludger *(Cisco Optical GmbH)*

WH1.3: Impact of GVD on Polarization-insensitive Self-Homodyne Detection Receiver (Page 435)
Ruben S. Luis *(National Institute of Information and Communications Technology)*
Benjamin J. Puttnam *(National Institute of Information and Communications Technology)*
Georg Rademacher *(National Institute of Information and Communications Technology)*
Satoshi Shinada *(National Institute of Information and Communications Technology)*
Naoya Wada *(National Institute of Information and Communications Technology)*

WH1.4: In-band Crosstalk Analysis for Nyquist PDM-16QAM in Flexible Grid Transmission (Page 439)
Jie Pan *(Adva Optical Networking)*
Sorin Tibuleac *(Adva Optical Networking)*

WH1.5: Performance Evaluation of Underwater Wireless Optical Communications Links in the Presence of Different Air Bubble Populations (Page 441)
Hassan Makine Oubei *(King Abdullah University of Science and Technology)*
Rami T. ElAfandy *(King Abdullah University of Science and Technology)*
Ki-Hong Park *(King Abdullah University of Science and Technology)*
Tien Khee Ng *(King Abdullah University of Science and Technology)*
Mohamed-Slim Alouini *(King Abdullah University of Science and Technology)*
Boon S. Ooi *(King Abdullah University of Science and Technology)*

WI1: Attosecond Dynamics in Atoms and Solids 8:30-10:00 Salon IV

WI1.1: Attoclock Revisited on quantum Tunneling Time (Page 449)
Cornelia Hofmann *(Max Planck Institute for the Physics of Complex Systems)*
Alexandra S. Landsman *(Max Planck Institute for the Physics of Complex Systems)*
Ursula Keller *(ETH Zurich, Switzerland)*

WI1.2: Petahertz Optical Drive with Wide-bandgap Materials (Page 451)
Hiroki Mashiko *(NTT Basic Research Labs.)*
Katsuya Oguri *(NTT Basic Research Laboratories)*
Yuta Chisuga *(NTT Basic Research Laboratories and Yokohama National University)*
Hiroyuki Masuda *(NTT Basic Research Laboratories and Yokohama National University)*

Tomohiko Yamaguchi *(NTT Basic Research Laboratories and Tokyo University of Science)*
Akira Suda *(Tokyo University of Science)*
Ikufumi Katayama *(Yokohama National University)*
Jun Takeda *(Yokohama National University)*
Hideki Gotoh *(NTT Basic Research Laboratories)*

WI1.3: Attosecond Counter Rotating Wave Effect in Xenon Driven by Strong Fields (Page 453)
M. Anand *(POSTECH and Max Planck POSTECH/KOREA Res. Init.)*
Stefan Pabst *(Harvard-Smithsonian Center for Astrophysics)*
Ojoon Kwon *(POSTECH and Max Planck POSTECH/KOREA Res. Init.)*
Dong Eon Kim *(POSTECH and Max Planck POSTECH/KOREA Res. Init.)*

WA2: Photonic-based RF Signal Generation 10:30-12:00 Salon I

WA2.1: Photonic Frequency Synthesis From RF to THz (Page N/A)
Scott Diddams *(NIST)*

WA2.2: Low Noise RF Generation with Transportable Optical Cavities (Page N/A)
Mark Notcutt *(Stable Laser Systems)*

WA2.3: A 30 GHz Ultra-Low-Phase-Noise Oscillator Using Electro-Optical Frequency Division (Page 455)
Jiang Li *(hQphotonics Inc.)*
Kerry Vahala *(California Institute of Technology)*

WB2: Fundamentals and Applications of Microresonators II 10:30-12:00 Salon II

WB2.1: Spontaneous Symmetry Breaking in an Ultrahigh-Q Microcavity (Page 457)
Yun-Feng Xiao *(Peking University and Collaborative Innovation Center of Extreme Optics)*
Qi-Tao Cao *(Peking University)*
Heming Wang *(Peking University)*
Chun-Hua Dong *(University of Science and Technology of China)*
Hui Jing *(Henan Normal University)*
Rui-Shan Liu *(Peking University)*
Xi Chen *(Peking University)*
Li Ge *(College of Staten Island and The Graduate Center)*
Qihuang Gong *(Peking University and Collaborative Innovation Center of Extreme Optics)*

WB2.2: Broadband Coherent Perfect Absorption in Graphene via an Omniresonant Optical Microcavity (Page 459)
Ali K. Jahromi *(University of Central Florida)*
Massimo L. Villinger *(University of Central Florida)*
Ahmed El Halawany *(University of Central Florida)*
Soroush Shabahang *(University of Central Florida)*
H. Esat Kondakci *(University of Central Florida)*
Ayman F. Abouraddy *(University of Central Florida)*

WB2.3: Enhanced Light Emission from MoS2 in Heterostructure Photonic Crystal Cavities (Page 461)
Xiaochen Ge *(University of Texas at Arlington)*
Momchil Minkov *(Stanford University)*
Farhan Chowdhury *(University of Texas at Arlington)*
Shanhui Fan *(Stanford University)*
Xiuling Li *(University of Illinois)*
Weidong Zhou *(University of Texas at Arlington)*

WB2.4: Fabrication of a Centimeter-long Cavity on Nanofiber for Strong-coupling Regime of Cavity QED (Page 465)
Jameesh Keloth *(The University of Electro-Communications)*
Kali P. Nayak *(The University of Electro-Communications)*
Jie Wang *(The University of Electro-Communications)*
Kohzo Hakuta *(The University of Electro-Communications)*

WC2: High Frequency 10:30-12:15 Salon III

WC2.1: Passively Mode-locked Quantum-well Laser with a Saturable Absorber Having Gradually Varied Bandgap (Page 467)
Junjie Xu *(Chinese Academy of Sciences)*
Song Liang *(Chinese Academy of Sciences)*
Songtao Liu *(Chinese Academy of Sciences)*
Lijun Qiao *(Chinese Academy of Sciences)*
Siwei Sun *(Chinese Academy of Sciences)*
Qiufang Deng *(Chinese Academy of Sciences)*
Yongguang Huang *(Chinese Academy of Sciences)*
Hongliang Zhu *(Chinese Academy of Sciences)*

WC2.2: Fixed-Point Frequencies Analysis of Monolithic 10 GHz Repetition Rates AlGaInAs Multiple Quantum-Well Laser Diodes (Page 469)
Abdullah Zaman *(University of Central Florida)*
Peter J. Delfyett *(College of Optics and Photoinc)*

WC2.3: Limited Validity Range of the Modulation Current Efficiency Factor of Directly Modulated Semiconductor Lasers (Page 471)
Gunter Larisch *(Technische Universität Berlin)*
Dieter Bimberg *(Technische Universität Berlin)*

WC2.4: Demonstration of Self-Pulsating InP-on-Si DFB Laser Diodes (Page 473)

Mahmoud Shahin *(Ghent University - imec)*
Keqi Ma *(Zhejiang University)*
Amin Abbasi *(Ghent University - imec)*
Gunther Roelkens *(Ghent University - imec)*
Geert Morthier *(Ghent University - imec)*

WC2.5: Impact of Laser Dynamics on 56 Gbps PAM-4 Modulation of 25G Class, 1310 nm, Directly Modulated Lasers (Page 475)
Prashant P. Baveja *(Applied Optoelectronics Inc.)*
Mingshan Li *(Applied Optoelectronics Inc.)*
Ding Wang *(Applied Optoelectronics Inc.)*
Yu-Yan Liang *(Applied Optoelectronics Inc.)*
Yujing Chen *(Applied Optoelectronics Inc.)*
Dion McIntosh-Dorsey *(Applied Optoelectronics Inc.)*
Huanlin Zhang *(Applied Optoelectronics Inc.)*
Jun Zheng *(Applied Optoelectronics Inc.)*

WC2.6: A Novel Dual-loop Feedback Sheme to Suppress Phase Noise and Spurious Tones in Self-mode-locked Two-section Quantum Dash Lasers Emitting at 1.55 µm (N/A)
Haroon Asghar *(University College Cork)*
John G. McInerney *(University College Cork)*

WD2: Novel Photodetector Configurations 10:30-12:00 Salon VI

WD2.1: Luminescent Detectors for Free-Space Optical Communication (Page 479)
Thibault Peyronel *(Facebook, Inc.)*
Kevin J. Quirk *(Facebook, Inc.)*
Tobias G. Tiecke *(Facebook, Inc.)*

WD2.2: Low-cost Electroluminescence Imaging for Automated Defect Characterization in Photovoltaic Modules (Page 481)
Michael Bazzoli *(University of Illinois and National Renewable Energy Laboratory)*
Timothy J. Silverman *(National Renewable Energy Lab)*
Lynford L. Goddard *(University of Illinois)*

WD2.3: Video-Rate Photometric Stereo-Imaging with General Lighting Luminaires (Page 483)
Johannes Herrnsdorf *(University of Strathclyde)*
Laurence Broadbent *(Aralia Systems Ltd.)*
Glynn C. Wright *(Aralia Systems Ltd.)*
Martin D. Dawson *(University of Strathclyde)*
Michael J. Strain *(University of Strathclyde)*

WD2.4: High Conversion-Gain Pixels in a Standard CMOS Image Sensor Process (Page 485)
Song Chen *(Dartmouth College)*
Eric R. Fossum *(Dartmouth College)*

WD2.5: Highly Sensitive Photodetectors Based on Organic-Inorganic Heterostructure (Page 487)
Che-Hsuan Cheng *(University of Michigan)*
Haozhu Wang *(University of Michigan)*
Zidong Li *(University of Michigan)*
Parag B. Deotare *(University of Michigan)*

WE2: Tutorial & Novel Tissue Imaging and Detection Techniques 10:30-12:00 Salon VII

WE2.1: Multifunctional Imaging of Human Tissue by Jones Matrix Optical Coherence Tomography (Page N/A)
Yoshiaki Yasuno *(University of Tsukuba)*
Josh W. Parks *(University of California, Santa Cruz)*
Alexandra Stambaugh *(University of California, Santa Cruz)*
Matthew A. Stott *(Brigham Young University)*
Gopikrishnan M. Meena *(University of California, Santa Cruz)*
Aaron R. Hawkins *(Brigham Young University)*
Holger Schmidt *(University of California, Santa Cruz)*

WE2.3: CMOS Fabricated Large Array of Free Standing Substrate-less Photonic Crystal Cavities for Bosensing Applications (Page 493)
Kumar Saurav *(imec-Ghent University)*
Sulakshna Kumari *(imec-Ghent University)*
Nicolas Le Thomas *(imec-Ghent University)*

WF2: Ultrashort Wavelength Nonlinear Optics and Applications 10:30-12:00 Salon VIII

WF2.1: Energy Scaling of Gas Nonlinear Optics (Page 503)
Cord L. Arnold *(Lund University)*
Christoph M. Heyl *(Lund University and University of Colorado)*
Hélène Coudert-Alteirac *(Lund University)*
Miguel Miranda *(Lund University)*
Maite Louisy *(Lund University)*
Katalin Kovacs *(National Institute for R&D Isotopic and Molecular Technologies)*
Valer Tosa *(National Institute for R&D Isotopic and Molecular Technologies)*
Imre Balogh *(Institute for Basic Science)*
Katalin Varju *(ELI-ALPS and University of Szeged)*
Arnaud Couairon *(École Polytechnique)*

Anne L'Huillier *(Lund University)*

WF2.2: Sub-Angstrom and Femtosecond Scale Imaging of Molecular Motion using Ultrafast X-ray Scattering (Page N/A)
Adi Natan *(Stanford \ SLAC National Lab)*
Matthew Ware *(Stanford \ SLAC National Lab)*
James Glowina *(LCLS \ SLAC National Lab)*
James Cryan *(Stanford \ SLAC National Lab)*
Philip Bucksbaum *(Stanford \ SLAC National Lab)*

WG2: Metamaterials and Plasmonics 10:30-12:00 Kahiki/Lily

WG2.1: Modulating Optically Active Signals in a Chiral Metamaterial with Varied Input Intensities (Page 505)
Sean P. Rodrigues *(Georgia Institute of Technology)*
Shoufeng Lan *(Georgia Institute of Technology)*
Lei Kang *(Georgia Institute of Technology)*
Yonghao Cui *(Georgia Institute of Technology)*
Patrick W. Panuski *(Georgia Institute of Technology)*
Shengxiang Wang *(Georgia Institute of Technology and Wuhan Textile University)*
Augustine M. Urbas *(Air Force Research Laboratory)*
Wenshan Cai *(Georgia Institute of Technology)*

WG2.2: Control of Light-matter Interaction in 2D Semiconductors (Page N/A)
Vinod Menon *(City College of New York)*

WG2.3: Wideband Resonant Metasurfaces: Role of Local Modes (Page 507)
Robert Magnusson *(University of Texas-Arlington)*
Yeong Hwan Ko *(University of Texas-Arlington)*

WG2.4: Dielectric Metasurfaces with Independent Angular Control (Page 509)
Seyedeh Mahsa Kamali *(California Institute of Technology)*
Ehsan Arbabi *(California Institute of Technology)*
Amir Arbabi *(California Institute of Technology)*
Yu Horie *(California Institute of Technology)*
MohammadSadegh Faraji-Dana *(California Institute of Technology)*
Andrei Faraon *(California Institute of Technology)*

WG2.5: Dispersion-controlled Diffractive Devices with Dielectric Metasurfaces (Page 511)
Ehsan Arbabi *(California Institute of Technology)*
Amir Arbabi *(University of Massachusetts)*
Seyedeh Mahsa Kamali *(California Institute of Technology)*
Yu Horie *(California Institute of Technology)*
Andrei Faraon *(California Institute of Technology)*

WH2: Data Centers 10:30-12:00 Poinsettia/ Quince

WH2.1: Transceivers for Inter-data Center Connections (Page 513)
Annika Dochhan *(ADVA Optical Networking SE)*
Nicklas Eiselt *(ADVA Optical Networking SE and Technical University of Denmark)*
Helmut Griesser *(ADVA Optical Networking SE)*
Michael Eiselt *(ADVA Optical Networking SE)*
Jörg-Peter Elbers *(ADVA Optical Networking SE)*

WH2.2: Optical Technologies and Implementation Challenges for 400G and beyond for Datacenters (Page N/A)
Sunil Khatana *(Lumentum)*

WI2: High-Order Harmonic Generation in Solids 10:30-11:45 Salon IV

WI2.1: THz-driven Strong-field Dynamics in Solids: High-harmonic Generation and Quasiparticle Collisions (Page 523)
Fabian Langer *(University of Regensburg)*
Matthias Hohenleutner *(University of Regensburg)*
Christoph P. Schmid *(University of Regensburg)*
Stefan Schlauderer *(University of Regensburg)*
Ulrich Huttner *(University of Marburg)*
Stephan W. Koch *(University of Marburg)*
Mackillo Kira *(University of Michigan)*
Rupert Huber *(University of Regensburg)*

WI2.2: High-order Harmonic Generation in ZnO Using Few-cycle Mid-IR Pulses Generated via Self-compression (Page 525)
Shima Gholam-Mirzaei *(University of Central Florida)*
John Beetar *(University of Central Florida)*
Michael Chini *(University of Central Florida)*

WA3: Heterogeneous Integration Roadmap 1:30-3:00 Salon II

WA3.1: Heterogeneous Integration Roadmap (Page N/A)
B. Bottoms *(3MTS)*

WB3: NLUO Tutorial / Leading Concepts in Nonlinear Optics 1:30-3:00 Salon II

WB3.1: Parity-Time Symmetry in Optics and Photonics (Page N/A)
Demetrios Christodoulides *(University of Central Florida)*

WC3: VCSEL Integration and High-speed Smodulation 1:30-3:00 Salon III

WC3.1: Silicon-Integrated Hybrid-Vertical-Cavity Lasers for Life Science Applications (Page 527)
J. S. Gustavsson *(Chalmers University)*
S. Kumari *(Ghent University-Imec)*
E. P. Haglund *(Chalmers University)*
J. Bengtsson *(Chalmers University)*
G. Roelkens *(Ghent University-Imec)*
R. G. Baets *(Ghent University-Imec)*
A. Larsson *(Chalmers University)*

WC3.2: Classification of Coherent Supermodes in Photonic Crystal Vertical Cavity Laser Arrays (Page 529)
Bradley J. Thompson *(University of Illinois)*
Zihe Gao *(University of Illinois)*
Harshil Dave *(University of Illinois)*
Stewart T.M. Fryslie *(Freedom Photonics)*
Katherine Lakomy *(University of Illinois)*
Kent D. Choquette *(University of Illinois)*

WC3.3: Coherence Tuning of Pulsed Photonic Crystal VCSEL Arrays (Page 531)
Harshil Dave *(University of Illinois)*
Stewart T.M. Fryslie *(Freedom Photonics)*
Zihe Gao *(University of Illinois)*
Bradley J. Thompson *(University of Illinois)*
Kent D. Choquette *(University of Illinois)*

WC3.4: 30-GHz Small-signal Modulation Bandwidth with Directly Current-modulated 980-nm Oxide-aperture VCSELs (Page 533)
Ricardo Rosales *(Technische Universität Berlin)*
Martin Zorn *(Jenoptik Laser Diode Lab GmbH)*
James A. Lott *(Technische Universität Berlin)*

WC3.5: Harnessing the Asymmetry in Coherently Coupled 2x1 VCSEL Arrays (Page 535)
Zihe Gao *(University of Illinois)*
Bradley J. Thompson *(University of Illinois)*
Harshil Dave *(University of Illinois)*
Stewart T.M. Fryslie *(Freedom Photonics)*
Kent D. Choquette *(University of Illinois)*

WD3: Photonic Integrated Circuits 1:30-3:00Salon VI

WD3.1: High Resolution Optical Frequency Domain Reflectometry for Measurement of Waveguide Group Refractive Index (Page 537)
Dan Zhao *(Eindhoven University of Technology)*
Dzmitry Pustakhod *(Eindhoven University of Technology)*
Kevin Williams *(Eindhoven University of Technology)*
Xaveer Leijtens *(Eindhoven University of Technology)*

WD3.2: Enhancement of SOA-integrated EAM with Low-temperature Quantum Well Intermixing Through Supercritical Fuid Technique (Page 539)
Yang-Jeng Chen *(National Sun Yat-Sen University)*
Cong-Long Chen *(National Sun Yat-Sen University)*
Sheng-an Yang *(National Sun Yat-Sen University)*
Rih-You Chen *(National Sun Yat-Sen University)*
Yi-Jen Chiu *(National Sun Yat-Sen University)*

WD3.3: Optical Frequency Synthesis by Offset-Locking the Tunable Local-Oscillator of a Low Power Integrated Receiver to a Microresonator Comb (Page 541)
Shamsul Arafin *(University of California Santa Barbara)*
Arda Simsek *(University of California Santa Barbara)*
Seong-Kyun Kim *(University of California Santa Barbara)*
Wei Liang *(OEwaves Inc.)*
Danny Eliyahu *(OEwaves Inc.)*
Gordon Morrison *(Freedom Photonics LLC)*
Milan Mashanovitch *(Freedom Photonics LLC)*
Andrey Matsko *(OEwaves Inc.)*
Leif Johansson *(Freedom Photonics LLC)*
Lute Maleki *(OEwaves Inc.)*
Mark Rodwell *(University of California, Santa Barbara)*
Larry Coldren *(University of California, Santa Barbara)*

WD3.4: Fabrication of Dual Layer, Dual Width Waveguides for Dispersion Engineered InP Photonic Circuits (Page 543)
Jon Øyvind Kjellman *(Eindhoven University of Technology)*
Ripalta Stabile *(Eindhoven University of Technology)*
Kevin A. Williams *(Eindhoven University of Technology)*

WD3.5: Heterogeneous Integration of Thin-Film Lithium Niobate and Chalcogenide Waveguides on Silicon (Page 545)
Amirmahdi Honardoost *(University of Central Florida)*

Saeed Khan *(University of Central Florida)*
Guillermo Fernando Camacho Gonzalez *(University of Central Florida)*
Jean-Etienne Tremblay *(University of California, Berkeley)*
Anupama Yadav *(University of Central Florida)*
Kathleen A. Richardson *(University of Central Florida)*
Ming C. Wu *(University of California, Berkeley)*
Sasan Fathpour *(University of Central Florida)*

WE3: Optical System Architecture 1:30-3:00 Salon VII

WE3.1: Convergence of Millmeter-wave and Optical Access Networks (Page N/A)
Andreas Stoehr *(Unversity of Duisburg Essen, Germany)*

WE3.2: Free-space Optical Links Enhanced by Twisted Photons (Page N/A)
Martin Philip John Lavery *(University of Glasgow)*

WE3.3: Terahertz Systems Based on Resonant Tunneling Diodes and Photonic Crystals (Page 547)
Masayuki Fujita *(Osaka University)*

WF3: Systems and Modulation 2 1:30-3:00 Salon VIII

WF3.1: Spectrally Efficient Visible Light Communications (Page N/A)
Steve Hranilovic *(McMaster University, Canada)*

WF3.2: Reduced Complexity Interleaved Multi-Carrier CDMA for Indoor Visible Light Communications (Page 551)
Abdallah M. Abdelaziz *(Alexandria University)*
Mohamed A. El-Shimy *(Alexandria University)*
Ziad A. El-Sahn *(Alexandria University)*

WF3.3: Organic Visible Light Communications: Methods to Achieve 10 Mb/s (Page 553)
Paul A. Haigh *(University College London)*
Z. Ghassemlooy *(Northumbria University)*
S. T. Le *(Nokia Bell Labs, Stuttgart)*
F. Bausi *(University College London)*
H. Le Minh *(Northumbria University)*
F. Cacialli *(University College London)*
I. Darwazeh *(University College London)*

WG3: Novel Photonic Materials and Metamaterials 1:30-3:00 Kahiki/Lily

WG3.1: Leaky Mode Coupling in Asymmetric Subwavelength Dielectric Gratings (Page 555)
Michael Barrow *(University of Michigan)*
Martin Scherr *(University of Michigan)*
Jamie Phillips *(University of Michigan)*

WG3.2: Terahertz Frequency-selective Surface and Guided-mode Resonance Filters (Page 557)
Antonio Ferraro *(University of Calabria)*
Roberto Caputo *(University of Calabria)*
Dimitrios C. Zografopoulos *(Consiglio Nazionale delle Ricerche Istituto per la Microelettronica e Microsistemi)*
Romeo Beccherelli *(Consiglio Nazionale delle Ricerche Istituto per la Microelettronica e Microsistemi)*

WG3.3: Long-Wave Infrared Filtering in Subwavelength Dielectric Gratings (Page N/A)
Jamie Phillips *(University of Michigan)*
Martin Scherr *(University of Michigan)*
Michael Barrow *(University of Michigan)*

WG3.4: Broadband and High-speed 1300nm Electroabsorption Modulator Using InAlGaAs Multiple Quantum Wells (Page 559)
Bo-Hong Chen *(National Sun Yat-Sen University)*
Rih-You Chen *(National Sun Yat-Sen University)*
Cong-Long Chen *(National Sun Yat-Sen University)*
W. Lin *(LandMark Optoelectronics, Inc.)*
Yi-Jen Chiu *(National Sun Yat-Sen University)*

WG3.5: Control of Optical Amplification Process with Extremely Low Background Loss in Er:Al2O3 Waveguides (Page 561)
Mustafa Demirtas *(Anadolu University)*
Cem Odaci *(Anadolu University)*
Nihan Kosku Perkgoz *(Anadolu University)*
Cem Sevik *(Anadolu University)*
Feridun Ay *(Anadolu University)*

WH3: Quantum Detectors and Novel Mechanisms 1:30-3:00 Poinsettia/ Quince

WH3.1: Quantum Detectors Using Cycling Excitation Process in Disordered Medium (Page 563)
Yugang Yu *(University of California, San Diego)*
Lujiang Yan *(University of California, San Diego)*
Alex Zhang *(University of California, San Diego)*
Yu-Hsin Liu *(University of California, San Diego)*
David Hall *(University of California, San Diego)*
Jiayun Zhou *(University of California, San Diego)*
Liyuan Chiang *(University of California, San Diego)*

Yuhwa Lo *(University of California, San Diego)*

WH3.2: Mach-Zehnder Interferometer Readout for Instantaneous Sensor Calibration and Extraction of Endlessly Unwrapped Phase (Page 567)
Johannes Milvich *(Karlsruhe Institute of Technology)*
Daria Kohler *(Karlsruhe Institute of Technology)*
Wolfgang Freude *(Karlsruhe Institute of Technology)*
Christian Koos *(Karlsruhe Institute of Technology)*

WH3.3: Quantitative Phase Imaging Through Encoding Phase into the State of Polarization (Page 569)
Shengwei Cui *(University of Central Florida)*
Milad I. Akhlaghi *(University of Central Florida)*
Aristide Dogariu *(University of Central Florida)*

WH3.4: Fourier Transform Spectroscopy via a Single Electro-Optic Frequency Comb (Page 571)
M. Imrul Kayes *(McGill University)*
Martin Rochette *(McGill University)*

WI3: Controlling Electronic Dynamics in Solids 1:30-3:00 Salon IV

WI3.1: Ultrafast Control of Electrons in Materials with the Electric FIeld of Light (Page 573)
Agustin E. Schiffrin *(Monash University)*

WI3.2: Lightwave-driven Electron Dynamics in Graphene (Page N/A)
Takuya Higuchi *(FAU Erlangen-Nurnberg, Germany)*

WI3.3: Universality of Ultrafast Semi-metallization in Dielectrics in PHz Domain (Page 575)
Ojoon Kwon *(Pohang University of Science and Technology and Max Planck POSTECH/Korea Res. Init.)*
Vadym Apalkov *(Georgia State University)*
Mark I. Stockman *(Georgia State University)*
Dong Eon Kim *(Pohang University of Science and Technology and Max Planck POSTECH/Korea Res. Init.)*

WI3.4: Spectral Broadening and Pulse Compression of a High Average Power Yb:KGW Laser (Page 577)
John Beetar *(University of Central Florida)*
Shima Gholam-Mirzaei *(University of Central Florida)*
Sean Buczek *(University of Central Florida)*
Steven Solis *(The College of Optics and Photonics)*
Michael Chini *(University of Central Florida and The College of Optics and Photonics)*

WJ4: Plenary II 3:30-5:00 Salon IV/V

WJ4.1: Novel Materials for Next Generation Photonic Devices (Page 579)
Michal Lipson *(Columbia University)*

WJ4.2: Ultrafast Photonics Time-Frequency Signal Processing Using Integrated Photonics (Page N/A)
Andrew Weiner

WP: Poster Session 6:00 PM - 8:00 International Ballroom - Center

WP.1: Concept for a Holographic Particle Counter (Page 581)
Georg Brunnhofer *(CTR Carinthian Tech Research AG and Graz University of Technology)*
Alexander Bergmann *(Graz University of Technology)*
Martin Kraft *(CTR Carinthian Tech Research AG)*

WP.2: High Linearity of Coupling-modulated Microring Modulators (Page 583)
Payam Rabiei *(Partow Technologies LLC)*

WP.3: Enhaced Spectrophotometric Measurements for Complex Refractive Index Characterization (Page 585)
Francesco Pudda *(University Roma Tre)*
Gabriella Cincotti *(University Roma Tre)*
Emanuela Frangipani *(University Roma Tre)*
Paolo Visca *(University Roma Tre)*

WP.4: Optimization of Lght Trapping Micro-hole Structure for High-speed High-efficiency Silicon Photodiodes (Page 587)
Ekaterina Ponizovskaya Devine *(University of California, Davis and W&WSens Devices, Inc)*
Hilal Cansizoglu *(University of California, Davis)*
Yang Gao *(University of California, Davis)*
Kazim G. Polat *(University of California, Davis)*
Soroush Ghandiparsi *(University of California, Davis)*
Ahmet Kaya *(University of California, Davis)*
Hasina H. Mamtaz *(University of California, Davis)*
Ahmed S. Mayet *(University of California, Davis)*
Yinan Wang *(University of California, Davis)*
Xinzhi Zhang *(University of California, Davis)*
Toshishige Yamada *(University of California, Santa Cruz and W&WSens Devices, Inc)*
Aly F. Elrefaie *(University of California, Davis AND W&WSens Devices, Inc)*
Shih-Yuan Wang *(W&WSens Devices, Inc.)*
M. Saif Islam *(University of California, Davis)*

WP.5: Tunable Mid-IR Emission through Four-Wave Mixing in Xe-Filled Hollow-Core Photonic Crystal Fiber (Page 589)
Christian Keyser *(Air Force Research Laboratory)*
Jeffrey Beck *(Michigan Technological University)*

WP.6: Wavelength-switchable IF Over Fiber Network Under Ultra-dense WDM Configuration for High-speed

Guifang Li *(University of Central Florida)*
Bahaa E.A. Saleh *(University of Central Florida)*

WP.47: Detection System for Point-Of-Care Multiplexed Bead-Based Immunoassays (Page 673)
K. de Haan *(University of Toronto)*
J. Dou *(University of Toronto)*
J. S. Aitchison *(University of Toronto)*

WP.48: Implementation of OCDMA Using Nested Ring Resonators (Page 675)
Mahmoud A. Elrabiaey *(Alexandria University and Centre for Photonics and Smart Materials)*
Ziad A. El-Sahn *(Alexandria University)*
Hossam M.H. Shalaby *(Alexandria University)*
El-Sayed A. Youssef *(Alexandria University)*

ThA1: Photonic Systems for Aerospace and Antenna Applications 8:30-10:00 Salon I

ThA1.1: DWDM Systems for Aerospace High-Speed Digital and RF Transport (Page N/A)
Rick Stevens *(Lockheed Martin ATL)*

ThA1.2: A Photonic Receiver Based on Stretch Processing for Synthetic Aperture Radar (Page 677)
Ruoming Li *(Chinese Academy of Sciences)*
Manlai Ding *(Chinese Academy of Sciences)*
Zhilei Wen *(Chinese Academy of Sciences)*
Wangzhe Li *(Chinese Academy of Sciences)*
Yu Tian *(Chinese Academy of Sciences)*
Xingdong Liang *(Chinese Academy of Sciences)*

ThA1.3: Photonically-Enabled Imaging Receiver (Page 689)
Christopher A. Schuetz *(Phase Sensitive Innovations)*
Garrett J. Schneider *(University of Delaware)*
Janusz Murakowski *(University of Delaware)*
Shouyuan Shi *(University of Delaware)*
Dennis W. Prather *(University of Delaware)*

ThC1: Novel Attosecond Pulse Sources 8:30-10:00 Salon III

ThC1.1: Intense Supercontinuum Generation in Condensed Media: New Approach to Single-cycle Pulses and Isolated Attosecond Pulses (Page N/A)
Andy Kung *(Academia Sinica)*

ThC1.2: The Response of Transparent Materials to Intense Ultrashort Light Pulses (Page 691)
Paul B. Corkum *(University of Ottawa & NRC)*

ThC1.3: High-energy CEP-stable Few-cycle Mid-IR Pulses for Generating Attosecond Sub-keV X-rays (Page N/A)
Zenghu Chang

ThD1: Fiber Sensing 8:30-10:00 Salon VI

ThD1.1: Stimulated Brillouin Scattering in Few-mode Fibers and its Applications (Page 693)
Kwang Yong Song *(Chung-Ang University)*

ThD1.2: Complex Domain Brillouin Frequency Estimation for Distributed Fiber Sensing (Page 695)
Jian Fang *(The University of Melbourne)*
Miao Sun *(The University of Melbourne)*
Di Che *(The University of Melbourne)*
Matthew Myers *(CSIRO, Energy)*
William Shieh *(The University of Melbourne)*

ThD1.3: Simultaneous in Situ Monitoring of Axial Stress in Post Tensioned Concrete and Rod Using Fiber Loop Ringdown Sensors (Page 697)
Maheshwar Ghimire *(Mississippi State University)*
Chuji Wang *(Mississippi State University)*

ThD1.4: Multi-Parameter Sensing using Few-Mode Fibers (Page 699)
An Li *(Futurewei Technologies, Inc.)*
Byoung Yoon Kim *(Korea Advanced Institute of Sc)*
Yifei Wang *(The University of Melbourne)*
William Shieh *(The University of Melbourne)*

ThE1: Novel Imaging and Biosensor Systems 8:30-10:00 Salon VII

ThE1.1: Mesoscopic Fluorescence Molecular Tomography (Page 701)
Xavier Intes *(Rensselaer Polytechnic Inst)*

ThE1.2: High Fidelity MMI-Based Multi-Spot Excitation for Optofluidic Multiplexing (Page 703)
Matthew A. Stott *(Brigham Young University)*
Vahid Ganjalizadeh *(University of California, Santa Cruz)*
Holger Schmidt *(University of California, Santa Cruz)*
Aaron R. Hawkins *(Brigham Young University)*

ThE1.3: Laser Micro-ablated Multi-point Side-firing Optical Fiber for Deep-tissue Light Delivery (Page 705)
Hoang Nguyen *(University of Houston)*
MD Masud ParvezArnob *(University of Houston)*
Wei-Chuan Shih *(University of Houston)*

ThE1.4: Ensemble Plasmonic Coupling in Disordered Nanoparticle Arrays and Applications in Ultra-sensitive Biosensing and Super-resolution Histopathology (Page N/A)
Wei-Chuan Shih *(University of Houston)*

ThF1: PIC Packaging 8:30-10:00 Salon VIII

ThF1.1: Optical Pin ArraysÂ for Chip Scale Silicon Photonics Transceiver Packaging (Page N/A)
Kazuhiko Kurata *()*

ThF1.2: Packaging Silicon Photonics with Polymer Waveguides for 3D Electro-Optical Integration (Page 707)
Nivesh Mangal *(imec and Ghent University)*
Jeroen Missinne *(imec and Ghent University)*
Geert Van Steenberge *(imec and Ghent University)*
Joris Van Campenhout *(imec)*
Brad Snyder *(imec)*

ThF1.3: A Mach-Zehnder Mode Multi/Demultiplexer based on Si/Silica Hybrid PLC Platform for WDM/MDM Transmission (Page 709)
Misa Kudo *(Hokkaido University)*
Shun Ohta *(Hokkaido University)*
Eri Taguchi *(Hokkaido University)*
Takeshi Fujisawa *(Hokkaido University)*
Taiji Sakamoto *(NTT Corporation)*
Takashi Matsui *(NTT Corporation)*
Kyozo Tsujikawa *(NTT Corporation)*
Kazuhide Nakajima *(NTT Corporation)*
Kunimasa Saitoh *(Hokkaido University)*

ThF1.4: Hybrid Photonic Multi-chip Integration Enabled by 3D Nano-printing (Page N/A)
Christian Koos *(Karlsruhe Institute Technology)*

ThG1: Strong Nonlinearities Metamaterials, Solids and Applications 8:30-10:00 Kahiki/Lily

ThG1.1: Ultrathin Gradient Nonlinear Metasurface with a Giant Nonlinear Response (Page N/A)
Mikhail Belkin *(UT Austin)*

ThG1.2: Dispersion of Extremely Nondegenerate Nonlinear Refraction in Semiconductors (Page 711)
Peng Zhao *(University of Central Florida)*
David J. Hagan *(University of Central Florida)*
Eric W. Van Stryland *(University of Central Florida)*

ThG1.3: Broadband Wavelength Conversion Based on On-chip Nonlinear Optical Loop Mirror (Page 713)
Zifei Wang *(McGill University)*
Junjia Wang *(McGill University)*
Ivan Glesk *(University of Strathclyde)*
Lawrence R. Chen *(McGill University)*

ThG1.4: Probing Nanomechanical and Optomechanical Nonlinearities with Photonic Devices (Page N/A)
Paul Barclay *(University of Calgary)*

ThH1: Free Space Optical Communications 8:30-10:00 Poinsettia/ Quince

ThH1.1: Optical Ground Terminals Using Multi-Aperture Digital Coherent Combining (Page 715)
David J. Geisler *(MIT Lincoln Laboratory)*
Timothy M. Yarnall *(MIT Lincoln Laboratory)*
Curt M. Schieler *(MIT Lincoln Laboratory)*
Mark L. Stevens *(MIT Lincoln Laboratory)*
Bryan S. Robinson *(MIT Lincoln Laboratory)*
Scott A. Hamilton *(MIT Lincoln Laboratory)*

ThH1.2: 10 m Free Space 128Gbit/s Transmission via Self-injection Locked Quantum-dash Laser (Page 717)
Mohamed Shemis *(King Fahd University of Petroleum and Minerals)*
Emad Alkhazraji *(Jubail Industrial College)*
Amr Ragheb *(KACST-TIC in Radio Frequency and Photonics for the e-Society)*
Maged Esmail *(KACST-TIC in Radio Frequency and Photonics for the e-Society)*
Habib Fathallah *(King Saud University and University of Carthage)*
Saleh Alshebeili *(KACST-TIC in Radio Frequency and Photonics for the e-Society and King Saud University)*
Mohammed Zahed Mustafa Khan *(King Fahd University of Petroleum and Minerals)*

ThH1.3: Physical-Layer Security in Optical Communications Enabled by Bessel Modes (Page 719)
Ivan B. Djordjevic *(University of Arizona)*
Shaoliang Zhang *(NEC Laboratories America, Inc.)*
Ting Wang *(NEC Laboratories America, Inc.)*

ThH1.4: Optimal Wavelength Selection for Entangled Quantum Key Distribution (Page 721)
John Gariano *(The University of Arizona)*
Ivan Djordjevic *(The University of Arizona)*
Tao Liu *(North China Electric Power University)*

ThH1.5: Analysis of Free-Space Coupling to Photonic Lanterns in the Presence of Tilt Errors (Page 723)
Timothy M. Yarnall *(Massachusetts Institute of Technology)*
David J. Geisler *(Massachusetts Institute of Technology)*
Curt M. Schieler *(Massachusetts Institute of Technology)*
Richard B. Yip *(Massachusetts Institute of Technology)*

Additional Papers: