General Chair:
Zetian Mi,
University of Michigan, Ann Arbor

Program Chair:
Christina Lim,
The University of Melbourne

Program Vice-Chair:
Weidong Zhou,
University of Texas, Arlington

Member-at-Large:
Dominique Dagenais,
National Science Foundation
### Monday, 28 September

8:15am  **Welcome Remarks**  
Chaired by: Zetian Mi (United States) and CARMEN MENONI (United States)

8:30am  **SS MLPS 1 - MA1 - Machine Learning in Photonics Systems I (Machine Learning for Optical Devices Design)**  
Chaired by: Keisuke Kojima (United States) and Alan Pak-Tao Lau (Hong Kong)

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors and Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>9am</td>
<td><strong>MA1.1 (Invited) - Design of Photonic Crystal Cavities Using Deep Neural Networks</strong></td>
<td>Takashi Asano (Japan) (1. Kyoto University)</td>
</tr>
<tr>
<td>9am</td>
<td><strong>MA1.2 (Invited) - Metasurfaces, Metadevices, and Metasystems: Hierarchical Photonics via Machine Learning</strong></td>
<td>Wenshan Cai (United States) (1. Georgia Institute of Technology)</td>
</tr>
<tr>
<td>9:30am</td>
<td><strong>MA1.3 - Ultra-compact Design of Power Splitters via Machine Learning</strong></td>
<td>Sourangsu Banerji (United States), Alex Hamrick (United States), Apratim Majumder (United States), Rajesh Menon (United States), Berardi Sensale-Rodriguez (United States) (1. University of Utah)</td>
</tr>
</tbody>
</table>

8:30am  **BIO 1 - MB1 - Computational Imaging and Simulation**  
Chaired by: Martin Villiger (United States) and Peter R. T. Munro (United Kingdom)

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors and Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30am</td>
<td><strong>MB1.1 (Invited) - Optical imaging of a mouse brain through an intact skull with an ideal diffraction-limited resolution</strong></td>
<td>Wonshik Choi (Korea, Republic of) (1. Center for Molecular Spectroscopy and Dynamics, Institute for Basic Science)</td>
</tr>
</tbody>
</table>

9am  **MB1.2 - Measuring the Multimode Fiber Transmission Matrix from only the Proximal Side**  
Szu-Yu Lee (United States), Vicente Parot (United States), Brett Bouma (United States), Martin Villiger (United States) (1. Wellman Center for Photomedicine)

9:15am  **MB1.3 - Amplitude division aperture synthesis optical coherence tomography**  
Linbo Liu (Singapore), Xin Ge (Singapore), En Bo (Singapore), Si Chen (Singapore) (1. School of EEE, Nanyang Technological University)

9:30am  **MB1.4 - 3D Fluorescence Imaging with a Computational Mesoscope**  
Yujia Xue (United States), Ian Davison (United States), David Boas (United States), Lei Tian (United States) (1. Boston University)

9:45am  **MB1.5 - Jolab: A free software to simulate light propagation in optical systems**  
Dylan M. Marques (United Kingdom), James Guggenheim (United Kingdom), Peter R. T. Munro (United Kingdom) (1. University College London (UCL))

8:30am  **NANO 1 - MC1 - Metasurfaces and Plasmonic Nanostructures**  
Chaired by: Junsuk Rho (Korea, Republic of) and Qing Gu (United States)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>8:30am</td>
<td><strong>MC1.2 - Inverse design of plasmonic metasurfaces by convolutional neural network</strong></td>
<td>Ronghui Lin (Saudi Arabia), Yanfen Zhai (Saudi Arabia), Chenxin Xiong (Saudi Arabia), Xiaohang Li (Saudi Arabia) (1. KAUST)</td>
</tr>
<tr>
<td>8:45am</td>
<td><strong>MC1.3 - Tip-Enhanced Photoluminescence in Picocavity</strong></td>
<td>Hana Hrim (United States), Sharad Ambardar (United States), Michael Musto (United States), Dmitri Voronine (United States) (1. University of South Florida)</td>
</tr>
</tbody>
</table>
### IEEE Photonics Conference 28 Sep - 01 Oct 2020

#### Continued from Monday, 28 September

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>9am</td>
<td><strong>MC1.4</strong> - Unidirectional Narrowband Perfect Absorption in Quasi-random Structures - Interplay of Gap States and Tamm Plasmon Modes</td>
<td>» Nitish Kumar Gupta (India), Anjani Kumar Tiwari (India), Harshawardhan Wanare (India), S. Anantha Ramakrishna (India) (1. Indian Institute of Technology Kanpur)</td>
</tr>
<tr>
<td>9:15am</td>
<td><strong>MC1.5</strong> - Active Chiral Metamaterials for Tunable Chiroptical Coupling and Valley Dynamics</td>
<td>» Zilong Wu (United States), Yuebing Zheng (United States) (1. the university of texas at austin)</td>
</tr>
<tr>
<td>8:30am</td>
<td><strong>MWP / AVFOP 1</strong> - MD1 - Integrated Microwave Photonics</td>
<td>Chaired by: Richard DeSalvo (United States) and Ampalavanapillai Nirmalathas (Australia)</td>
</tr>
<tr>
<td>8:30am</td>
<td><strong>MD1.1 (Invited)</strong> - Highly Integrated RF-Photonics for Low-SWaP Applications</td>
<td>» Tony Kowalczyk (United States) (1. Lockheed Martin)</td>
</tr>
<tr>
<td>9am</td>
<td><strong>MD1.2 - Optical synchronization between a 300 GHz frequency comb and a 10 GHz chip-scale MLL</strong></td>
<td>» Ricardo Bustos-Ramirez (United States), Lawrence Trask (United States), Ashish Bharadwaj (United States), Gloria Hoeffer (United States), Fred Kish (United States), Peter Delfyett (United States) (1. CREOL, The College of Optics, University of Central Florida, 2. CREOL, 3. Infinera Corporation)</td>
</tr>
<tr>
<td>9:15am</td>
<td><strong>MD1.3 - Towards Integrated RF Photodetector-Antenna Emitters in Silicon Photonics</strong></td>
<td>» Bahaa Radi (Canada), Ajaypal Singh Dhillon (Canada), Odile Liboiron-Ladouceur (Canada) (1. Department of Electrical and Computer Engineering, McGill University)</td>
</tr>
<tr>
<td>9:30am</td>
<td><strong>MD1.4 (Invited)</strong> - Microwave Integrated Photonics</td>
<td>» Stephen Ralph (United States) (1. Georgia Tech)</td>
</tr>
<tr>
<td>8:30am</td>
<td><strong>ME1.1 (Invited)</strong> - Optical Coherence Synthesizer with Optical Frequency Comb</td>
<td>» Kaoru Minoshima (Japan) (1. The University of Electro-Communications)</td>
</tr>
<tr>
<td>8:30am</td>
<td><strong>ME1.2 - Ultra-Flat Electro-Optic Optical Frequency Comb Generation Based on Backward Feedback Remodulation</strong></td>
<td>» Sang-Pil Han (Korea, Republic of), Jaegyu Park (Korea, Republic of), Sungil Kim (Korea, Republic of), Minhyup Song (Korea, Republic of) (1. Electronics and Telecommunications Research Institute (ETRI))</td>
</tr>
<tr>
<td>8:45am</td>
<td><strong>ME1.3 - High-bandwidth readout of optomechanical cavity sensors with electro-optic frequency combs</strong></td>
<td>» Benjamin Reschovsky (United States), David Long (United States), Yiliang Bao (United States), Feng Zhou (United States), Richard Allen (United States), Thomas LeBrun (United States), Jason Gorman (United States) (1. National Institute of Standards and Technology, Gaithersburg,)</td>
</tr>
<tr>
<td>9am</td>
<td><strong>ME1.4 (Invited)</strong> - Synchronization of Micreresonator-Based Frequency Combs</td>
<td>» Alexander Gaeta (United States) (1. University of Columbia)</td>
</tr>
<tr>
<td>8:30am</td>
<td><strong>OMND 1</strong> - <strong>MF1</strong> - Novel and Nonlinear Devices</td>
<td>Chaired by: Antonio Hurtado (United Kingdom) and William Loh (United States)</td>
</tr>
<tr>
<td>8:30am</td>
<td><strong>MF1.1 - Hybrid silicon MOS optoelectronic memristor with non-volatile memory</strong></td>
<td>» Bassem Tossoun (United States), Xia Sheng (United States), John Paul Strachan (United States), Di Liang (United States), Raymond G. Beausoleil (United States) (1. Hewlett Packard Enterprise)</td>
</tr>
</tbody>
</table>
### MF1.2 - Efficient second harmonic generation in a doubly resonant photonic crystal cavity based on a bound state in the continuum

» Jun Wang (Switzerland), Marco Clementi (Italy), Andrea Barone (Italy), Momchil Minkov (United States), Jean-François Carlin (Switzerland), Nicolas Grandjean (Switzerland), Shanhui Fan (United States), Romuald Houdre (Switzerland), Dario Gerace (Italy), Matteo Galli (Italy)


9am

### MF1.3 - A model for electro-optic response of slow-light silicon photonic modulators with lumped electrodes

» Omid Jafari (Canada), Wei Shi (Canada), Sophie LaRochelle (Canada)

1. Centre d'optique, photonique et laser, Université Laval

9:15am

### MF1.4 - TM-Pass Polarizer for Ultradense High-Performance Photonic Integrated Circuits

» Nikhil Dhingra (India), Francesco Dell'Olio (Italy)

1. University of Delhi South Campus, 2. Polytechnic University of Bari

9:30am

### MG1.1 - High-speed Transport Networks

Chaired by: Takehiro Tsuritani (Japan) and Hai-Han Lu (Taiwan)

8:30am

### MG1.2 - Ultra-Wideband Optical Transmission System Applying Optical Wavelength Conversion Technology

» Goji Nakagawa (Japan), Tomohiro Yamauchi (Japan), Tomoyuki Kato (Japan), Shigei Watanabe (Japan), Hidenobu Muranaka (Japan), Yu Tanaka (Japan), Yuichi Akiyama (Japan), Takeshi Hoshida (Japan)

1. Fujitsu Limited

9am

### MG1.3 - First Real-Time Demonstration of Probabilistic Shaping 400G Transmission Enabling High-Performance Pluggable Module Applications

» Alejandro Castrillon (Argentina), Hai Xu (United States), Damian Morero (Argentina), Alfreddo Taddei (Argentina), Martin Asinari (Argentina), Shu Hao Fan (United States), Hammad Ansari (United States), Shih-Cheng Wang (United States), Kiran Puttegowda (United States), Mario Hueda (Argentina)

1. Inphi Corporation

9:30am

### MG1.4 - Hyperscale Data Center Networks with Interconnected Transparent Island Architecture

» Md Nooruzzaman (Canada), Xavier Fernando (Canada)

1. Ryerson University

8:30am

### MH1.1 (Invited) - Advancements in Silicon Photonics Integrated Circuits for High Density Optical Interconnects

» Yuliya Akulova (United States)

1. Intel Corporation

9am

### MH1.2 - 160Gb/s optical link using Quantum-Dot comb laser source and SiGe APD

» SUDHARSANAN SRINIVASAN (United States), Bassem Tossoun (United States), Geza Kurczveil (United States), Zhihong Huang (United States), Di Liang (United States), Raymond G. Beausoleil (United States)

1. Hewlett Packard Enterprise

9:15am

### MH1.3 - A Chip-level Optical Interconnect for CPU

» Qinfen Hao (China), Kai Hao (China), Haijun Xue (China), Meng Han (China), Nan Qi (China), Kunming Zhang (China), Xingmao Niu (China), Limin Xiao (China), Dongrui Fan (China)

1. Institute of Computing Technology, Chinese Academy of Sciences, 2. Institute of Semiconductors, Chinese Academy of Sciences, 3. Institute of Microelectronics, Chinese Academy of Sciences, 4. School of Computer Science and Engineering, Beihang University
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Chair/Authors</th>
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<tbody>
<tr>
<td>9:30am</td>
<td>MH1.4</td>
<td>800 Gb/s Silicon Photonic Transmitter for Co-Packaged Optics</td>
<td>Dylan Logan (Canada), Simon Gebrewold (Germany), Kyle Murray (Germany),</td>
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<td>Arnab Dewanjee (Canada), Edgar Huanet-Ceron (Canada), Dave Kim (Canada),</td>
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<td>Anthony Baker (Canada), Markus Kukiela (Germany), Franc Znidarsic (Germany),</td>
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<td>James Whiteaway (Germany), Rong Chen (Canada), Claus Dorschky (Germany),</td>
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<td>Georg ROELL (Germany) (1. Ranovus Inc., 2. Ranovus GmbH)</td>
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<td>9:45am</td>
<td>MH1.5</td>
<td>Hyperscale Integrated Optical and Photonic Interconnect Platform</td>
<td>Richard Pitwon (United Kingdom), William Whelan-Curtin (Ireland), Kazuhiko</td>
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<td>Kurata (Japan), Bernard Lee (China), Tiger Ninomiya (United States) (1.</td>
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<td>Resolute Photonics Ltd, 2. Cork Institute of Technology, 3. AIO Core, 4.</td>
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<td>Senko Advanced Components)</td>
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<td>8:30am</td>
<td>M11</td>
<td>QPIT Tutorial &amp; Quantum Computation</td>
<td>Xiongfei Ma (China) and Michael Brodsky (United States)</td>
</tr>
<tr>
<td>8:30am</td>
<td>M11.1 (Tutorial)</td>
<td>Distributed Quantum Computation - How Does it Scale?</td>
<td>Kae Nemoto (Japan), Michael Hanks (Japan), Nicolo Lo Piparo (Japan), Bill</td>
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<td>Munro (Japan) (1. National Institute of Informatics, 2. NTT)</td>
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<tr>
<td>9:30am</td>
<td>M11.2</td>
<td>Quantum simulations with multiphoton number states</td>
<td>Magdalena Stobinska (Poland) (1. Institute of Theoretical Physics, University of Warsaw)</td>
</tr>
<tr>
<td>10:30am</td>
<td>SS MLPS 2</td>
<td>Machine Learning in Photonics Systems II (Machine Learning for</td>
<td>Alan Pak-Tao Lau (Hong Kong) and Darko Zibar (Denmark)</td>
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<td>Biomedical Optics)</td>
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<tr>
<td>10:30am</td>
<td>MA2.1 (Invited)</td>
<td>Deep Learning and Biomedical Optics</td>
<td>Yongkeun Park (Korea, Republic of) (1. KAIST)</td>
</tr>
<tr>
<td>11am</td>
<td>MA2.2 (Invited)</td>
<td>Deep Learning-enabled Computational Microscopy and Sensing</td>
<td>Aydogan Ozcan (United States) (1. UCLA)</td>
</tr>
<tr>
<td>11:30am</td>
<td>MA2.3</td>
<td>Automated Monitoring for Optical Coherence Tomography-based Biosensing Using Deep Learning</td>
<td>Heejong Kim (United States), Chun-Nam Yu (United States), William Kennedy (United States), Mike S. Eggleston (United States), Shreyas Shah (United States) (1. New York University, 2. Nokia Bell Labs)</td>
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<tr>
<td>11:45am</td>
<td>MA2.4</td>
<td>High throughput morphology-based cell screening by reservoir computing</td>
<td>Ning Jing (China), Chao Wang (United Kingdom) (1. North University of China, 2. University of Kent)</td>
</tr>
<tr>
<td>11am</td>
<td>MB2.1 (Invited)</td>
<td>Universal Light-sheet Generation with Field Synthesis</td>
<td>Reto Fiolka (United States) (1. UT Southwestern)</td>
</tr>
<tr>
<td>11:15am</td>
<td>MB2.2</td>
<td>DMD-SIM combined with strobe illumination for spatially-variant enhancement of spatiotemporal resolution</td>
<td>Taeseong Woo (Korea, Republic of), Su Hyun Jung (Korea, Republic of), Joo H. Kang (Korea, Republic of), Jung Park (Korea, Republic of) (1. Ulsan National Institute of Science and Technology)</td>
</tr>
<tr>
<td>11:30am</td>
<td>MB2.3</td>
<td>Ultrafast Wide-field Photoacoustic Microscopy of Small-animal Models</td>
<td>Junjie Yao (United States) (1. Duke University)</td>
</tr>
<tr>
<td></td>
<td>MB2.4 (Invited)</td>
<td>Combined orthogonal and non-orthogonal light-sheet microscopy for omniscale 3D imaging</td>
<td>Adam Glaser (United States) (1. University of Washington)</td>
</tr>
</tbody>
</table>
10:30am  **NANO 2 - MC2 - Detection and Sensing**  
Chairied by: Parag Deotare (United States) and Noel Giebink (United States)

10:30am  **MC2.1 (Invited) - Multimodal Photodetectors in Pixel Arrays**  
» Zongfu Yu (United States)¹ (1. University of Wisconsin Madison)

10:30am  **MD2 - Microwave Photonics Links and Signal Processing**  
Chairied by: Daniel Nickel (United States) and Ed Ackerman (United States)

10:30am  **ME2 - Twenty Years of Optical Frequency Combs**  
Chairied by: Peter Schunemann (United States) and Majid Ebrahim-Zadeh (Spain)

10:30am  **MD2.1 (Invited) - Dynamic Range Enhancements through Co-design of Electronic and Photonic ICs**  
» James Buckwalter (United States)¹ (1. UC - Santa Barbara)

11am  **MC2.2 (Invited) - Hybrid Photonic-Plasmonic Systems for Controlling Photon Routing and Watching Chemistry**  
» Randall Goldsmith (United States)

11am  **MD2.2 - Optical Single Sideband Microwave Photonic Links Using Fiber Bragg Gratings**  
» Justin Zobel (United States)¹, Eric Konitzer (United States)¹, Jean Kalkavage (United States)¹, Thomas Clark (United States)¹ (1. Johns Hopkins University Applied Physics Laboratory)

11:15am  **MD2.3 - Tunable and Reconfigurable Multiband Microwave Photonic Filter based on Optical Spectral Slicing**  
» Ling Liu (China)², Xian Jin (Canada)², Lawrence Chen (Canada)², Teng Ning (China)² (1. Institute of Lightwave Technology, Beijing Jiaotong University, 2. Department of Electrical and Computer Engineering, McGill University, 3. Institute of Lightwave Technology Beijing Jiaotong University)

11:15am  **MD2.4 (Invited) - Photonic beamforming for communications satellites**  
» Miguel Drummond (Portugal)¹, Rui Oliveira (Portugal)¹, Rogério Nogueira (Portugal)² (1. Instituto de Telecomunicações, 2. Instituto de...)

11:30am  **SS OFC 2 - ME2 - SS OFC 2**  
Chairied by: Peter Schunemann (United States) and Majid Ebrahim-Zadeh (Spain)

11:30am  **ME2.1 (Invited) - Twenty Years of Optical Frequency Combs**  
» Scott Diddams (United States)¹ (1. Time and Frequency Division, National Institute of Standards and Technology)

11am  **ME2.2 - Optical frequency comb divider for microwaves with 10-18 absolute instability**  
» Takuma Nakamura (United States)¹, Josue Davila-Rodriguez (United States)¹, Holly Leopardi (United States)¹, Jeff Sherman (United States)¹, Tara Fortier (United States)¹, Xiaojun Xie (United States)², Joe Campbell (United States)², William McGrew (United States)¹, Xiaogang Zhang (United States)², Youssif Hassan (United States)¹, Daniele Nicolodi (United States)¹, Kyle Beloy (United States)¹, Andrew Ludlow (United States)¹, Scott Diddams (United States)¹, Franklyn Quinlan (United States)¹ (1. Time and Frequency Division, National Institute of Standards and Technology, 2. Department of Electrical and Computer Engineering, University of Virginia, 3. university of virginia)
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15am</td>
<td>ME2.3 - Generation of Solitons and Platicons in Optical Microresonators with Backscattering</td>
<td>Valery Lobanov (Russian Federation), Nikita Kondratiev (Russian Federation) (1. Russian Quantum Center, Skolkovo)</td>
<td></td>
</tr>
<tr>
<td>11:30am</td>
<td>ME2.4 (Invited) - Soliton Microcombs: Physics and Applications</td>
<td>Kerry Vahala (United States) (1. California Institute of Technology)</td>
<td></td>
</tr>
<tr>
<td>10:30am</td>
<td>OMND 2 - MF2 - Microresonator Lasers</td>
<td>Chaired by: Xu Yi (United States) and William Loh (United States)</td>
<td></td>
</tr>
<tr>
<td>10:30am</td>
<td>MF2.1 (Invited) - Laser Cavity Solitons and Turing Patterns in Microresonator Filtered Lasers</td>
<td>Alessia Pasquazi (United Kingdom), Maxwell Rowley (United Kingdom), Pierre-Henri Hanzard (United Kingdom), Hualong Bao (United Kingdom), Antonio Cutrona (United Kingdom), Luana Olivieri (United Kingdom), Juan-Sebastian Tetero-Gongora (United Kingdom), Marco Peccianti (United Kingdom), Sai Chu (Hong Kong), Roberto Morandotti (Canada), David Moss (Australia), Gian-Luca Oppo (United Kingdom) (1. Emergent Photonics (EPic) Lab, Dept. of Physics and Astronomy, University of Sussex, BN1 9QH, Brighton, 2. Department of Physics and Material Science, City University of Hong Kong, 3. Energy, Materials and Telecommunications (EMT), Institut National de la Recherche Scientifique (INRS), 4. Centre for Micro Photonics, Swinburne University of Technology, 5. University of Strathclyde)</td>
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<tr>
<td>11am</td>
<td>MF2.2 - Spit-Coupled O-Ring Lasers</td>
<td>Mitsunori Saito (Japan), Atsushi Kubota (Japan) (1. Ryukoku University)</td>
<td></td>
</tr>
<tr>
<td>11:15am</td>
<td>MF2.3 - Multicolor laser oscillation in a single self-assembled colloidal quantum dot microsphere</td>
<td>Pedro Alves (United Kingdom), Nicolas Laurand (United Kingdom), Martin D. Dawson (United Kingdom) (1. University of Strathclyde)</td>
<td></td>
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<tr>
<td>11:30am</td>
<td>MF2.4 - Mid-IR DFB Laser Stabilization and Characterization with Silicon Microresonator</td>
<td>Artem Shitikov (Russian Federation), Oleg Benderov (Russian Federation), Nikita Kondratiev (Russian Federation), Valery Lobanov (Russian Federation), Igor Bilenko (Russian Federation) (1. Russian Quantum Center, Skolkovo, 2. Moscow Institute of Physics and Technology)</td>
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<tr>
<td>11:45am</td>
<td>MF2.5 - Dithering of Semiconductor Ring Laser Gyro Using Period-One Oscillations</td>
<td>Arpit Khandelwal (India) (1. Indian Institute of Technology Jodhpur)</td>
<td></td>
</tr>
<tr>
<td>10:30am</td>
<td>OCN 2 - MG2 - High-performance Optical Systems and Networks</td>
<td>Chaired by: Fatima Gunning (Ireland) and Xin Jiang (United States)</td>
<td></td>
</tr>
<tr>
<td>10:30am</td>
<td>MG2.1 (Invited) - High data-rate and long-distance transmission using multi-core fibers and amplifiers</td>
<td>Ben Puttnam (Japan), Ruben Soares Luis (Japan), Georg Rademacher (Japan), Yoshinari Awaji (Japan), Naoya Wada (Japan) (1. NICT)</td>
<td></td>
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<tr>
<td>11am</td>
<td>MG2.2 - Crosstalk Aware OAM Mode Selection for Space Division Multiplexed Optical Networks</td>
<td>Rizan Homayoun Nejad (Canada), Mai Banawan (Canada), Leslie Rüschi (Canada) (1. Centre d’optique, photonique et laser, Université Laval)</td>
<td></td>
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<tr>
<td>11:15am</td>
<td>MG2.3 - Combining simplified PAM4 and SDM to quadruple data rate</td>
<td>Syed Murshid (United States), Engin Eyuceyurt (United States), Swaroopini Harish (United States), Bilas Chowdhury (United States) (1. Florida Institute of Technology)</td>
<td></td>
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<tr>
<td>11:30am</td>
<td>MG2.4 (Invited) - Network Coding for Low-latency Applications</td>
<td>Muriel Medard (United States) (1. Massachusetts Institute of Technology (MIT))</td>
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</tbody>
</table>
### MH2 - Optical Interconnect Solutions II
**Chair:** Judson Ryckman (United States)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30am</td>
<td>MH2.1 (Invited) - Monolithically co-integrated silicon photonics for 100 Gb/s PAM4 optical links</td>
<td>Marco Vitali (Germany), Danilo Bronzi (Germany), Christian Meuer (Germany), Hanjo Rhee (Germany), Stefan Meister (Germany) (1. Sicoya)</td>
<td></td>
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<tr>
<td>11am</td>
<td>MH2.2 - Multiple I/O photon chip to fiber array packaging using fusion splicing in a single shot</td>
<td>Juniyali Nauriyal (United States), Meiting Song (United States), Yi Zhang (United States), Jaime Cardenas (United States) (1. University of Rochester)</td>
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<tr>
<td>11:15am</td>
<td>MH2.3 - Integrated Quadratic Reflectors for High-Performance Optical Interconnects</td>
<td>Shaolinang Yu (United States), Xiaoming Qiu (United States), Haijie Zuo (United States), Xiaomin Wang (United States), Xianchen Sun (United States), Jiefeng Liu (United States), Tian Gu (United States), Juejun Hu (United States) (1. Massachusetts Institute of Technology (MIT), 2. Thayer School of Engineering, Dartmouth College, 3. LaXense, Inc)</td>
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</tr>
<tr>
<td>11:30am</td>
<td>MH2.4 (Invited) - Production Level Si Photonics for Large-Scale Optical Circuits</td>
<td>Bo Peng (United States) (1. Lightelligence Inc.)</td>
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### MI2 - Entanglement Creation, Manipulation, Characterization
**Chair:** Sergey Polyakov (United States) and Michael Brodsky (United States)

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>10:30am</td>
<td>MI2.1 - Arbitrary single-qubit transformations on a quantum frequency processor</td>
<td>Hsuan-Hao Lu (United States), Emma Simmerman (United States), Pavel Lougovski (United States), Andrew Weiner (United States), Joseph Lukens (United States) (1. Purdue University, 2. Oak Ridge National Laboratory)</td>
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</tr>
<tr>
<td>10:45am</td>
<td>MI2.2 - Progress Toward Generation of Spatially-Entangled Photon Pairs in a Few-Mode Fiber</td>
<td>Afshin Shamshooli (United States), Cheng Guo (United States), Michael Vasilyev (United States), Francesca Parmigiani (United Kingdom), Xiaoying Li (China) (1. Dept. of Electrical Engineering, University of Texas at Arlington, 2. Dept. of Electrical Engineering, University of Texas at Arlington, 3. Microsoft Research Cambridge, 4. College of Precision Instruments and Opto-electronics Engineering, Key Laboratory of Opto-electronic Information Technical Science of Ministry of Education, Tianjin University)</td>
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</tr>
<tr>
<td>11am</td>
<td>MI2.3 (Invited) - Quantifying Entanglement in Large Quantum Photonic Systems</td>
<td>Gregory Howland (United States) (1. Rochester Institute of Technology)</td>
<td></td>
</tr>
<tr>
<td>11:30am</td>
<td>MI2.4 - Mapping quantum channel decoherence</td>
<td>Daniel E. Jones (United States), Gabriele Riccardi (Italy), Cristian Antonelli (Italy), Michael Brodsky (United States) (1. U.S. Army Research Laboratory, 2. University of L’Aquila, 3. U.S.)</td>
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<tr>
<td>11:45am</td>
<td>MI2.5 - Bayesian reconstruction of biphoton frequency correlations</td>
<td>Emma Simmerman (United States), Hsuan-Hao Lu (United States), Andrew Weiner (United States), Joseph Lukens (United States) (1. Oak Ridge National Laboratory, 2. Purdue University)</td>
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### SS MLPS 3 - Machine Learning in Photonics Systems III (Machine Learning for Optical Systems)
**Chair:** Darko Zibar (Denmark) and Keisuke Kojima (United States)

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>1:30pm</td>
<td>SS MLPS 3 -</td>
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</table>
MA3.1 (Invited) - Optical Fiber Communication Systems Based on End-to-End Deep Learning
» Boris Karanov (United Kingdom), Mathieu Chagnon (Germany), Vahid Aref (United Kingdom), Domanic Lavery (United Kingdom), Polina Bayvel (United Kingdom), Laurent Schmalen (Germany) (1. University College London (UCL), 2. Nokia Bell Labs, 3. Karlsruhe Institute of Technology (KIT))

MA3.2 - Effectiveness of Machine Learning in Assessing QoT Impairments of Photonics Integrated Circuits to Reduce System Margin
» Ihtesham Khan (Italy), Maryvonne Chalony (France), Enrico Ghillino (United States), Muhammad Umar masood (Italy), Jigesh Patel (United States), Dwight Richards (United States), Pablo Mená (United States), Paolo Bardella (Italy), Andrea Carena (Italy), Vittorio Curri (Italy) (1. Politecnico di Torino, 2. Light Tec SARL, 3. Synopsys, Inc., 4. Synopsys Inc., 5. The College of Staten Island)

MA3.3 - Recurrent neural nets achieving MLSE performance in bandlimited optical channels
» Sai Chandra Kumari Kalla (Canada), Leslie Rusch (Canada) (1. Centre d'optique, photonique et laser, Université Laval)

MA3.4 - Machine Learning for Modal Analysis
» Pawel Strzebonski (United States), Kent Choquette (United States) (1. Univ, 2. choquett@illinois.edu)

MA3.5 - Self-driving Reconfiguration of Data Center Networks by Deep Reinforcement Learning and Silicon Photonic Flex-LION Switches
» Roberto Proietti (United States), Xiaoliang Chen (United States), Yu Shang (United States), S. J. Ben Yoo (United States) (1. UC Davis)

BIO 3 - MB3 - BIO Tutorial & Sensing
Chaired by: Holger Schmidt (United States) and Yuze Sun (United States)
## IEEE Photonics Conference 28 Sep - 01 Oct 2020

### Continued from Monday, 28 September

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>1:30pm</td>
<td><strong>MD3.1 (Invited) - Integrated Microwave Photonic Circuits for Beamforming</strong></td>
<td>Maurizio Burla (Switzerland)¹ (1. Institute of Electromagnetic Fields)</td>
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</tr>
<tr>
<td>2pm</td>
<td><strong>MD3.2 - A Silicon Photonic Transceiver for Broadly Tunable Radar and RF Surveillance Systems</strong></td>
<td>Daniel Onori (Canada)¹, José Azaña (Canada)¹ (1. Institut National de la Recherche Scientifique, Énergie, Matériaux et Télécommunications (INRS-EMT))</td>
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<tr>
<td>2:15pm</td>
<td><strong>MD3.3 - Photonic Beamforming Based on Subwavelength Grating Enabled On-chip Optical True Time Delay Lines</strong></td>
<td>Yue Wang (Canada)¹, Hao Sun (Canada)¹, Mostafa Khalil (Canada)¹, Lawrence Chen (Canada)¹, Wei Dong (China)¹ (1. Department of Electrical and Computer Engineering, McGill University, 2. college of electronic science and engineering, Jilin University)</td>
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<tr>
<td>1:30pm</td>
<td><strong>ME3 – Industry Forum: Recipes for Successful Entrepreneurship</strong></td>
<td>Chaired by: Dalma Novak (United States)</td>
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<tr>
<td>1:30pm</td>
<td><strong>ME3.1 (IF) - Insights from a Serial Academic Entrepreneur</strong></td>
<td>John Bowers (United States)¹ (1. Department of Electrical and Computer Engineering, University of California Santa Barbara)</td>
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<tr>
<td>2pm</td>
<td><strong>ME3.2 (IF) - Starting a Business in Ultrafast Fiber Laser Technology</strong></td>
<td>Oliver Prochnow (Germany)¹ (1. Valo Innovations)</td>
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<tr>
<td>2:30pm</td>
<td><strong>ME3.3 (IF) - Adventures in Silicon Photonics</strong></td>
<td>Michael Hochberg (United States)¹ (1. nokia)</td>
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</tr>
<tr>
<td>3pm</td>
<td><strong>ME3.4 (IF) - Financial Concepts in the Management of a Photonic Startup</strong></td>
<td>Daniel Renner (United States)¹ (1. Freedom Photonics)</td>
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### 1:30pm - OMND 4 - MF3 - Waveguides and Resonators

**Chairered by: Andrey Matsko (United States) and Kiyoul Yang (United States)**

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>1:30pm</td>
<td><strong>MF3.1 - Vertically Coupled Wedge Disks for a Coupled-Resonator Optical Waveguide</strong></td>
<td>Marc-Antoine Bianki (Canada)¹, Cédric Lemieux-Leduc (Canada)¹, Regis Guertin (Canada)¹, Yves-Alain Peter (Canada)¹ (1. École Polytechnique de Montréal)</td>
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<tr>
<td>1:45pm</td>
<td><strong>MF3.2 - Silicon Microring Resonator Driven by High-Mobility Conductive Oxide Capacitor</strong></td>
<td>Wei-Che Hsu (United States)¹, Bokun Zhou (United States)¹, Cheng Zhen (United States)¹, Alan X. Wang (United States)¹ (1. Oregon State University)</td>
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<tr>
<td>2pm</td>
<td><strong>MF3.3 - Demonstration of High Quality Factor Aluminum Nitride on Sapphire Microring Resonators at Near Infrared and Green Wavelengths</strong></td>
<td>Yi Sun (United States)¹, Walter Shin (United States)¹, Majid Aalizadeh (United States)¹, Ping Wang (United States)¹, David Laleyan (United States)¹, Ayush Pandey (United States)¹, Xianhe Liu (United States)¹, Yuanpeng Wu (United States)¹, Anshuman Singh (United States)¹, Mohammad Soltani (United States)¹, Zetian Mi (United States)¹ (1. University of Michigan, 2. National Institute of Standards and Technology, 3. Raytheon BBN Technologies)</td>
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<tr>
<td>2:15pm</td>
<td><strong>MF3.4 - Scaling Effect and Optimization of SOI Dual-waveguide Optical Trapping</strong></td>
<td>Xiangming Xu (United Kingdom)¹, Ulbricht Hendrik (United Kingdom)¹, David Thomson (United Kingdom)¹, Goran Mashanovich (United Kingdom)¹, Jize Yan (United Kingdom)¹ (1. University of Southampton)</td>
<td></td>
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<tr>
<td>2:30pm</td>
<td><strong>MF3.5 - Q-factor Enhancement in Slow-Light Nanobeam Cavities on a Silicon Nitride Platform</strong></td>
<td>Jiuhao Zhan (United States)¹, Zeinab Jafari (Mexico)², Sylvain Veilleux (United States)¹, Mario Dagenais (United States)¹, Israel De Leon (Mexico)² (1. University of Maryland, College Park, 2. Tecnologico de Monterrey)</td>
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</table>
### MG3.6 - Broad-band impedance matching of dispersive waveguides - the white light cavity approach

» Jacob Scheuer (Israel), Dmitry Filonov (Israel), Pavel Ginzburg (Israel) (1. School of EE, Tel Aviv-University, 2. Center for Photonics and 2D Materials, Moscow Institute of Physics and Technology)

### OCN 3 - MG3 - Multi-band Optical Transmission

Chaired by: Youichi Akasaka (United States) and Lidia Galdino (United Kingdom)

### MG3.1 (Invited) - The benefits of using the S-band in optical fibre communication and how to get there

» Daniel Semrau (United Kingdom), Robert Killey (United Kingdom), Polina Bayvel (United Kingdom) (1. University College London (UCL))

### MG3.2 - Multi Bands Network Performance Assessment for Different System Upgrades

» Rasoul Sadeghi (Italy), Bruno Correia (Italy), Emanuele Virgilio (Italy), Nelson Costa (Portugal), João Pedro (Portugal), Antonio Napoli (Germany), Vittorio Curri (Italy) (1. Politecnico di Torino, 2. Infinera Corporation)

### MG3.3 - Flexible and Autonomous Multi-band Raman Amplifiers

» Giacomo Borraccini (Italy), Stefano Straullu (Italy), Alessio Ferrari (Italy), Stefano Piciaccia (Italy), Gabriele Galimberti (Italy), Vittorio Curri (Italy) (1. Politecnico di Torino, 2. LINKS Foundation, 3. Cisco Photonics)

### MG3.4 - Three-channel Multiplexed Communication over Mid L-band InAs/InP Quantum Dash Laser

» Emad Alkhazraj (Saudi Arabia), Amr Ragheb (Saudi Arabia), Maged Esmail (Saudi Arabia), Habib Fathallah (Saudi Arabia), Saleh Alshebeili (Saudi Arabia), Khurram Qureshi (Saudi Arabia), Mohammed Zahed Mustafa Khan (Saudi Arabia) (1. Jubail Industrial College, 2. King Saud University, 3. Prince Sultan University, 4. King Fahd University of Petroleum and Minerals)

### MG5.5 - Fiber-Wireless-Fiber Terminals for Optical Wireless Communication over Multiple Bands

» Ravinder Singh (United Kingdom), Andy Schreier (United Kingdom), Graeme Faulkner (United Kingdom), Dominic O’Brien (United Kingdom) (1. University of Oxford)

### MH3 - Integrated Actives and Hybrid Modulators

Chaired by: Tingyi Gu (United States)

### MH3.1 (Invited) - Ultra High Speed Silicon and Polymer Hybrid Modulator 100 Gbaud Transmission

» Shiyoshi Yokoyama (Japan) (1. Kyushu University)

### MH3.2 - 280 Gb/s Dual-Polarization Transmitter using Ge-on-Si EAMs for Short-Reach Interconnects

» David Weng U Chan (Hong Kong), Yeyu Tong (Hong Kong), Guang Hong Chen (Taiwan), Chi-Wai Chow (Taiwan), Hon Ki Tsang (Hong Kong) (1. The Chinese University of Hong Kong, 2. Department of Photonics, National Chiao-Tung University)

### MH3.3 - High-speed 45Gb/s SiGe reflected-electroabsorption modulator for downstream/upstream detection by integrating a monitoring SiGe PD

» Yi-jen Chiu (Taiwan), Rih-You Chen (Taiwan), Yang-Jeng Chen (Taiwan), Shi-Ting Huang (Taiwan) (1. Department of Photonics, National Sun Yat-Sen University, 2. Department of Photonics National Sun Yat-Sen University)
Continued from Monday, 28 September

2:30pm  MH3.4 - Carrier Regeneration in Kramers–Kronig System Enabled by Injection Locking for Optical Interconnection
» Xiaoling Zhang (China), Longsheng Li (China), Chen Chen (China), Wei Jin (China), Chongfu Zhang (China), Kun Qiu (China)
(1. Key Lab. of Optical Fiber Sensing and Communications University of Electronic Science and Technology of China, 2. State Key Lab of Advanced Optical Communication Systems and Networks, Shanghai Jiao Tong University, Shanghai, China, 3. School of Microelectronics and Communication Engineering, Chongqing University, Chongqing 400030, China, 4. School of Electronic Engineering, Bangor University, Bangor, LL57 UT, UK, 5. School of Information and Communication Engineering, University of Electronic Science and Technology of China, Chengdu 611731, China, 6. Key Laboratory of Optical Fiber Sensing and Communication Networks (Ministry of Education), School of Information and Communication Engineering, University of Electronic Science and Technology of China, Chengdu 611731, China)

2:45pm  MH3.5 - A Tunable Optical Notch Filter on SOI Platform
» Connor Mosquera (Canada), Hossam Shoman (Canada), Lukas Chróstowski (Canada)
(1. University of British Columbia, 2. Department of Electrical and Computer Engineering, University of British Columbia.)

3:00pm  MA4 - Awards I
Chaired by: Christina Lim (Australia) and Weidong Zhou (United States)

3:30pm  MA4.1 (Awards) - Superlattice Based Single and Dual Band nBn Detectors
» Sanjay Krishna (United States)
(1. George R Smith Chair and Professor of ECE, Ohio State University)

3:30pm  MA4.2 (Awards) - Optical Switching in Data Centers: Why? and When?
» George Papen (United States)
(1. University of California San Diego)

3:30pm  MB4 - Deep Learning
Chaired by: Marinko Sarunic (Canada) and Lei Tian (United States)

3:30pm  MB4.1 (Invited) - Quantitative Tissue Property Measurements with Structured Illumination and Deep Learning
» Mason T. Chen (United States), Nicholas J. Durr (United States)
(1. Johns Hopkins University)

3:30pm  MB4.2 - Deep-learning-enabled virtual immunofluorescence staining based on reflectance microscopy
» Shi Yi Cheng (United States), Sipei Fu (United States), Yumi Mun Kim (United States), Yunzhe Li (United States), Yujia Xue (United States), Ji Yi (United States), Lei Tian (United States)
(1. Boston University)

3:30pm  MB4.3 - Real-time retinal layer segmentation of adaptive optics optical coherence tomography angiography with deep learning
» Yifan Jian (United States), Svetlana Borkovkina (Canada), Worawee Japongsori (Canada), Acner Camino (United States), Marinko Sarunic (Canada)
(1. Oregon Health and Science University, 2. Simon Fraser University)

3:30pm  MB4.4 - Physics-embedded deep learning for intensity diffraction tomography
» Alex Matlock (United States), Lei Tian (United States)
(1. Boston University)

3:30pm  MC4 - Laser Processing and Optical Manipulation
Chaired by: Rajesh Menon (United States) and Parag Deotare (United States)

3:30pm  MC4.1 - Laser Processing for Creating Nano-Polygon Arrays
» Mitsunori Saito (Japan), Satoki Suzuki (Japan)
(1. Ryukoku University)

3:30pm  MC4.2 - Solid-Phase Optical Manipulation and Assembly of Colloidal Particles
» Jingang Li (United States), Yuebing Zheng (United States)
(1. the university of texas at austin)
### MC4.3 - Nanoscale polymer blister formation using single femtosecond pulses
- **Alan T. K. Godfrey (Canada)**
- **Deepak Kallepalli (Canada)**
- **Chunmei Zhang (Canada)**
- **Paul B. Corkum (Canada)**

(1. University of Ottawa)

### MC4.4 - Quantifying the Response of Diverse Nanoparticles Towards Laser-Induced Thermoelectric Field to Enhance Applications in Nanorobotics
- **Pavana Siddhartha Kollipara (United States)**
- **Linhan Lin (China)**
- **Zhihan Chen (United States)**
- **Yaoran Liu (United States)**
- **Yuebing Zheng (United States)**

(1. the university of texas at austin, 2. Tsinghua University)

### MC4.5 - Reconfigurable Assembly of Chiral Nanostructures on Solid Substrates
- **Jingang Li (United States)**
- **Yuebing Zheng (United States)**

(1. the university of texas at austin)

### MF4 - Nanophotonics and Metamaterials

#### MF4.1 (Invited) - Optimized Quantum Photonics
- **Jelena Vuckovic (United States)**

(1. Stanford University)

#### MF4.2 - High-Frequency Photonic Crystal Torsional Optomechanics
- **Bishnupada Behera (Canada)**
- **Hamidreza Kaviani (Canada)**
- **Ghazal Hajisalem (Canada)**
- **Gustavo Luiz (Canada)**
- **Paul Barclay (Canada)**

(1. IQST, Dept. of Physics and Astronomy, University of Calgary, 2. nanoFAB Centre, University of Alberta)

#### MF4.3 - Silicon Micro-ring Resonators with Dual-metamaterial Waveguides
- **Thi Thuy Duong Dinh (France)**
- **Xavier Leroux (France)**
- **Miguel Montesinos (France)**
- **Christian Lafforgue (France)**
- **Pavel Cheben (Canada)**
- **Eric Cassan (France)**
- **Delphin Marris-Morini (France)**
- **Laurent Vivien (France)**
- **Carlos Alonso-Ramos (France)**

(1. Université Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies, 2. National Research Council Canada)

#### MF4.4 - Visible-Wavelength Beam Shaping using Two-Dimensional Meta-Grating Outcouplers
- **Chad Ropp (United States)**
- **Alexander Yulaev (United States)**
- **Daron A. Westly (United States)**
- **Gregory Simelgor (United States)**
- **Vladimir Aksyuk (United States)**

(1. Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD 20899)
### Continued from Monday, 28 September

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Affiliation(s)</th>
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</thead>
<tbody>
<tr>
<td>3:30pm</td>
<td><strong>OI 4 - MH4 - OI Tutorial &amp; Interconnects for High Performance Systems</strong>&lt;br&gt;Chaired by: Tingyi Gu (United States)</td>
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<tr>
<td>3:30pm</td>
<td><strong>MH4.1 (Tutorial) - Embedded Photonics for Deeply Disaggregated Computing Systems</strong>&lt;br&gt;» Keren Bergman (United States) (1. Columbia University)</td>
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<tr>
<td>4:30pm</td>
<td><strong>MH4.2 (Invited) - Small Form Factor Modules for Coherent Optical Interconnects</strong>&lt;br&gt;» Radhakrishnan Nagarajan (United States) (1. Inphi Corp)</td>
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<tr>
<td>3:30pm</td>
<td><strong>MI4 - Atomic Physics Based Approaches to Quantum Technologies</strong>&lt;br&gt;Chaired by: Mahdi Hosseini (United States) and Michael Brodsky (United States)</td>
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<tr>
<td>3:30pm</td>
<td><strong>MI4.1 (Invited) - Engineering atom-nanophotonic hybrid lattices</strong>&lt;br&gt;» Chen-Lung Hung (United States) (1. Department of Physics and Astronomy, Purdue University, West Lafayette)</td>
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<td>4pm</td>
<td><strong>MI4.2 (Invited) - Quantum Tools for Communication</strong>&lt;br&gt;» Paul Kunz (United States) (1. U.S. Army Research Laboratory)</td>
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<tr>
<td>4:30pm</td>
<td><strong>MI4.3 (Invited) - Analysis and control of the multimode spatial structure of atom-based squeezed light</strong>&lt;br&gt;» Irina Novikova (United States) (1. College of William &amp; Mary)</td>
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### Tuesday, 29 September

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Affiliation(s)</th>
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</thead>
<tbody>
<tr>
<td>8:30am</td>
<td><strong>TuA1.1 (Plenary) - VCSEL Array for 3D Sensing</strong>&lt;br&gt;» Connie J. Chang-Hasnain (United States) (1. University of California, Berkeley)</td>
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<td>9:15am</td>
<td><strong>TuA1.2 (Plenary) - Light Matters - Photons, Photons, Everywhere</strong>&lt;br&gt;» Chris Koeppen (United States) (1. II-VI Incorporated)</td>
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<td>10:30am</td>
<td><strong>SS MLPS 4 -</strong>&lt;br&gt;TuA2 - Machine Learning in Photonics Systems IV (Machine Learning for Performance Monitoring / Photonic Neural Networks)&lt;br&gt;Chaired by: Alan Pak-Tao Lau (Hong Kong) and Darko Zibar (Denmark)</td>
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<tr>
<td>10:30am</td>
<td><strong>TuA2.1 (Invited) - Physical Layer Health Check in the Age of Data Analysis</strong>&lt;br&gt;» Takahito Tanimura (Japan) (1), Takeshi Hoshida (Japan) (2) (1. Fujitsu Limited (currently with Hitachi Ltd.), 2. Fujitsu Limited)</td>
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<td>11am</td>
<td><strong>TuA2.2 - OSNR Monitoring Based on Low-Bandwidth Coherent Receiver and Discrete Classifier</strong>&lt;br&gt;» Huang Bin Ye (China) (1), Dawei Wang (China) (2), Zhaohui Li (China) (3), Shuqiang Huang (China) (1. College of Science &amp; Engineering, Jinan University, 2. School of Electrical and Information Technology, Sun Yat-sen University, 3. College of Science &amp; Engineering, Jinan university)</td>
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<td>11:15am</td>
<td><strong>TuA2.3 - Silicon Photonic Neural Networks for Chaos-based Secure Communication</strong>&lt;br&gt;» Yashpreet Masson (Canada) (1), Bicky Marquez (Canada) (2), Bhavin J. Shastri (Canada) (1. Department of Physics, Engineering Physics &amp; Astronomy, Queen's University, 2. Department of Physics, Engineering Physics &amp; Astronomy, Queen's University, 3. Department of Physics Engineering Physics &amp; Astronomy, Queen's University)</td>
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<td>11:30am</td>
<td><strong>TuA2.4 - Towards Phase-Error- and Loss-Tolerant Programmable MZI-Based Optical Processors for Optical Neural Networks</strong>&lt;br&gt;» Farhad Shokraneh (Canada) (1), Simon Geoffroy-Gagnon (Canada) (1), Odile Liboiron-Ladouceur (Canada) (1. Department of Electrical and Computer Engineering, McGill University)</td>
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### Continued from Tuesday, 29 September

#### 11:45am

**TuA2.5 - Photonic Long-Short Term Memory Neural Networks with Analog Memory**  
> Emma Howard (Canada), Bicky Marquez (Canada), Bhavin J. Shastri (Canada)  
1. Department of Physics, Engineering Physics and Astronomy, Queen’s University, 2. Department of Physics, Engineering Physics & Astronomy, Queen’s University

#### 10:30am

**BIO 5 - TuB2 - Smart System Engineering**  
Chaired by: Peter R. T. Munro (United Kingdom) and Dongkyun Kang (United States)

#### 10:30am

**TuB2.1 (Invited) - Intelligent Image-Activated Cell Sorter 2.0**  
> Keisuke Goda (Japan)  
1. University of Tokyo

#### 11am

**TuB2.2 - LED Excitation of an On-chip Imaging Flow Cytometer for Bead-based Immunoassay**  
> Xilong Yuan (Canada), Todd Darcie (Canada), Jonathan J. D. McKendry (United Kingdom), Michael J. Strain (United Kingdom), Martin D. Dawson (United Kingdom), Stewart Aitchison (Canada)  
1. University Of Toronto, 2. University of Strathclyde

#### 11:15am

**TuB2.3 - Imaging of Caenorhabditis elegans by spectrally encoded confocal microscopy**  
> Sadaf Rashtchian (Canada), Khaled Youssef (Canada), Pouya Rezai (Canada), Nima Tabatabaei (Canada)  
1. York University

#### 11:30am

**TuB2.4 - Miniature, hyperchromatic objective lens for chromatic confocal endomicroscope**  
> Nachiket Kulkarni (United States), Andrew Mascioli (United States), Arthur Gmitro (United States), Esther Freeman (United States), Aggrey Semeere (Uganda), Miriam Nakalembe (Uganda), Dongkyun Kang (United States)  
1. James C. Wyant College of Optical Sciences, University of Arizona, Tucson, 2. Department of Biomedical Engineering, University of Arizona,Tucson, 3. Department of Dermatology, Massachusetts General Hospital, Boston, 5. Infectious Diseases Institute, Makerere University College of Health Sciences, Kampala

#### 11:45am

**TuB2.5 - Internal-Illumination Photoacoustic Tomography Enhanced by a Graded-scattering Fiber Diffuser**  
> Mucong Li (United States), Junjie Yao (United States), Tri Vu (United States), Georgy Sankin (United States), Brenton Winship (United States), Kohldon Boydston (United States), Russell Terry (United States), Pei Zhong (United States)  
1. Duke University

#### 10:30am

**NANO 5 - TuC2 - Integrated Nanophotonics**  
Chaired by: Qing Gu (United States) and Rajesh Menon (United States)

#### 10:30am

**TuC2.1 - Wafer-scale low-loss lithium niobate photonic integrated circuits**  
> Kevin Luke (United States), Prashanta Kharel (United States), Christian Reime (United States), Lingyan He (United States), Marko Loncar (United States), Mian Zhang (United States)  
1. HyperLight, 2. Harvard University

#### 10:45am

**TuC2.2 - Dispersion-engineered Nanophotonic Devices Based on Subwavelength Metamaterial Waveguides**  
> David Gonzalez Andrade (Spain), Antonio Dias (Spain), Jose Manuel Luque-Gonzalez (Spain), Gonzalez Wanguemy-Perez (Spain), Alejandro Ortega-Moñux (Spain), Robert Halir (Spain), Iñigo Molina-Fernández (Spain), Pavel Cheben (Canada), Aitor Villafranca Velasco (Spain)  
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>11am</td>
<td>TuC2.3</td>
<td>Ultra-compact TM-pass Polarizer based on Stacked Photonic Waveguides Laterally Coupled with Vanadate Strips</td>
<td>Yusheng Bian (United States), Won Suk Lee (United States), Michal Rakowski (United States), Rod Augur (United States), Bo Peng (United States), Karen Nummy (United States), Ken Giewont (United States), John Pellerin (United States), Abdelsalam Aboketaf (United States), Bing Shen (United States), Youqiao Ma (China)</td>
</tr>
<tr>
<td>11:15am</td>
<td>TuC2.4</td>
<td>Impact of SiO2 Cladding Voids in SiPh Building Blocks</td>
<td>Hatef Shiran (Canada), Hassan Rahbardar Mojaver (Canada), Jocelyn Bachman (Canada), cong Jin (Canada), Odile Liboiron-Ladouceur (Canada)</td>
</tr>
<tr>
<td>11:30am</td>
<td>TuC2.5</td>
<td>Tailoring Group Velocity Dispersion in Hybrid Silicon-Organic Augmented Low Index Guiding Waveguides</td>
<td>Todd Darcie (Canada), Stewart Aitchison (Canada)</td>
</tr>
<tr>
<td>10:30am</td>
<td>SL 1</td>
<td>TuD2 - Nanostructure and Quantum-Based Lasers</td>
<td>John Bowers (United States), Hagen Zimer (United States)</td>
</tr>
<tr>
<td>10:30am</td>
<td>TuD2.2</td>
<td>Fabrication-Tolerant-Design for Single-Lobe, Surface-Emitting Quantum Cascade Lasers</td>
<td>Jae Ha Ryu (United States), Chris Sigler (United States), Jeremy Kirch (United States), Tom Earles (United States), Dan Botez (United States), Luke Mawst (United States)</td>
</tr>
<tr>
<td>10:45am</td>
<td>TuD2.3</td>
<td>Towards Attojoule Operation of Semiconductor Quantum well Lasers</td>
<td>Nithish Kumar Gadiyaram (United States), Jim Coleman (United States), Weidong Zhou (United States)</td>
</tr>
<tr>
<td>11am</td>
<td>TuD2.4 (Invited)</td>
<td>Hexagonal Boron Nitride Quantum Emitters</td>
<td>Igor Aharonovich (Australia)</td>
</tr>
<tr>
<td>11:30am</td>
<td>TuD2.1 (Invited)</td>
<td>Recent progress in quantum dot lasers for silicon photonics</td>
<td>Yasuhiko Arakawa (Japan)</td>
</tr>
<tr>
<td>10:30am</td>
<td>PSS 1</td>
<td>TuE2 - Detectors for Photonic Integrated Circuits</td>
<td>Andrew Sarangan (United States)</td>
</tr>
<tr>
<td>10:30am</td>
<td>TuE2.1 (Invited)</td>
<td>Heterogeneous III-V Photodiodes on Silicon Nitride and Silicon</td>
<td>Andreas Beling (United States)</td>
</tr>
<tr>
<td>11am</td>
<td>TuE2.2</td>
<td>InGaAs/GaAs Multi-Quantum Well Nano-Ridge Waveguide Photodetector Epitaxially Grown on a 300-mm Si Wafer</td>
<td>Cenk Ibrahim Ozdemir (Belgium), Yannick De Koninck (Belgium), Nadezda Kuznetsova (Belgium), Marina Baryshnikova (Belgium), Dries Van Thourhout (Belgium), Bernardette Kunert (Belgium), Marianna Pantouvaki (Belgium), Joris Van Campenhout (Belgium)</td>
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<tr>
<td>11:15am</td>
<td>TuE2.3</td>
<td>Low Limit of Detection Silicon Photonic Sensor with Extremely-Low-Cost Laser Source</td>
<td>Jonas Leuermann (Spain), Adrián Fernández-Gavela (Spain), Laura M. Lechuga (Spain), Alejandro Sánchez-Postigo (Spain), Robert Halir (Spain), Igigo Molina-Fernández (Spain)</td>
</tr>
<tr>
<td>11:30am</td>
<td>TuE2.4</td>
<td>All-Silicon Photodetectors for Photonic Integrated Circuit Calibration</td>
<td>Sarvagya Dwivedi (Belgium), Jon Kjellman (Belgium), Tangla David (Belgium), Mathias Prost (Belgium), Aleksandrs Marinins (Belgium), Philippe Soussan (Belgium), Marcus Dahlem (Belgium), Xavier Rottenberg (Belgium), Roelof Jansen (Belgium)</td>
</tr>
</tbody>
</table>
Continued from **Tuesday, 29 September**

| 10:30am | **NLUO 1 - TuF2 - Infrared Fiber-based and Nonlinear Sources**  
Chairied by: Martin Bernier (Canada) and Peter Schunemann (United States) |
| 10:30am | **TuF2.1 (Invited) - Mid-Infrared Fiber Lasers**  
Réal Vallée (Canada), Martin Bernier (Canada), Vincent Fortin (Canada), Yigit Ozan Aydin (Canada), Pascal Paradis (Canada), Frédéric Jobin (Canada), Simon Duval (Canada), Frédéric Maes (Canada) (1. Université Laval) |
| 11:00am | **TuF2.2 - Towards Mid-IR Pulsed All-Fiber Lasers Based on Saturable Absorbers**  
Pascal Paradis (Canada), Vincent Fortin (Canada), Bernard Dussardier (France), Réal Vallée (Canada), Martin Bernier (Canada) (1. Université Laval, 2. Université Côte d’Azur, CNRS) |
| 11:15am | **TuF2.3 - Broadband, efficient, high-power picosecond optical parametric generation in MgO:PPLN**  
Biplob Nandy (Spain), Chaitanya Kumar Suddapalli (Spain), Majid Ebrahim-Zadeh (Spain) (1. ICFO-The Institute of Photonic Sciences) |
| 11:30am | **TuF2.4 - Influence of Bending on Ultrafast Nonlinear Dynamics in Gas-filled Hollow-core Fiber**  
Md Selim Habib (United States) (1. Optoelectronics Research Group, Department of Electrical and Computer Engineering, Florida Polytechnic University) |
| 11:45am | **TuF2.5 - Continuous-wave green-pumped optical parametric oscillator based on fanout MgO:PPLN**  
Sukeert Sukeert (Spain), Chaitanya Kumar Suddapalli (Spain), Majid Ebrahim-Zadeh (Spain) (1. ICFO-The Institute of Photonic Sciences) |
| 10:30am | **DISL 1 - TuG2 - Display Futures**  
Chairied by: Chien-chung Lin (Taiwan) and Johannes Herrnsdorf (United Kingdom) |
| 10:30am | **TuG2.1 (Invited) - OLED Display Market Overview**  
Yoshio Tamura (Japan) (1. DSCC) |
| 11am | **TuG2.3 - Towards Perovskite LED Displays**  
Cheng Chang (United States), Chen Zou (United States), Mark Odendahl (United States), Lin Lin (United States) (1. Department of Electrical and Computer Engineering University of Washington) |
| 10:30am | **OI 5 - TuH2 - OI Keynote**  
Chairied by: Ashkan Seyedi (United States) |
| 10:30am | **TuH2.1 (Keynote) - The Future of VCSELs: Dynamics and Speed Limitations**  
Anders Larsson (Sweden), Johan Gustavsson (Sweden), Erik Haglund (Sweden), Emanuel Haglund (United States), Attila Fülöp (Sweden), Andrè Kelkkanen (Sweden) (1. Chalmers University/Nvidia, 2. Nvidia and Chalmers University of Technology, 3. NVIDIA) |
| 11:15am | **TuH2.2 - Multimode Links Based on 100G VCSELs for Emerging Data Centers**  
Vipul Bhattacharya (United States) (1. II-VI) |
| 11:15am | **TuH2.3 - Cryogenic 50 GHz VCSEL for sub-100 fJ/bit Optical Link**  
Wenning Fu (United States), Hsiao-Lun Wang (United States), Haonan Wu (United States), Achyut Srivastava (United States), Suchet Srivastava (United States), Milton Feng (United States), Dennis Deppe (United States) (1. University of Illinois Urbana-Champaign, 2. Sdphotons, LLC) |
| 1:30pm | **SS MLPS 5 - TuA3 - Machine Learning in Photonics Systems V (Neuromorphic Photonics / Optical Neural Networks)**  
Chairied by: Keisuke Kojima (United States) and Darko Zibar (Denmark) |
| 1:30pm | **TuA3.1 (Invited) - Beyond Moore's Law: The role of analog signal processing for neuromorphic computing**  
Bert Offrein (Switzerland) (1. IBM - Research Zurich) |
**Continued from Tuesday, 29 September**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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</thead>
<tbody>
<tr>
<td>2pm</td>
<td>TuA3.2</td>
<td>Training Deep Neural Networks in Situ with Neuromorphic Photonics</td>
<td>Matthew Filipovich (Canada), Zhimu Guo (Canada), Bicky Marquez (Canada), Hugh Morison (Canada), Bhavin J. Shastri (Canada) (1. Queen's University)</td>
</tr>
<tr>
<td>2:15pm</td>
<td>TuA3.3</td>
<td>Reconfigurable all-optical nonlinear activation functions</td>
<td>Aashu Jha (United States), Chaoran Huang (United States), Paul Prucnal (United States) (1. Princeton University)</td>
</tr>
<tr>
<td>2:30pm</td>
<td>TuA3.4</td>
<td>A graphene-based synapse for photonic neural networks</td>
<td>Bicky Marquez (Canada), Hugh Morison (Canada), Zhimu Guo (Canada), Matthew Filipovich (Canada), Bhavin J. Shastri (Canada) (1. Department of Physics, Engineering Physics &amp; Astronomy, Queen's University, 2. Queen's University)</td>
</tr>
<tr>
<td>2:45pm</td>
<td>TuA3.5</td>
<td>Tensor-Train Decomposed Synaptic Interconnections for Compact and Scalable Photonic Neural Networks</td>
<td>Xian Xiao (United States), S. J. Ben Yoo (United States) (1. University of California, Davis)</td>
</tr>
<tr>
<td>1:30pm</td>
<td>BIO 6</td>
<td>Optical Coherence Tomography</td>
<td>Nicholas Giglio (United States), Thomas Hutchens (United States), Christopher Clipp (United States), Nathaniel Fried (United States) (1. University of North Carolina at Charlotte)</td>
</tr>
<tr>
<td>1:30pm</td>
<td>TuB3.1</td>
<td>Optical coherence tomography for use in infrared laser sealing of blood vessels</td>
<td>Nicholas Giglio (United States), Thomas Hutchens (United States), Christopher Clipp (United States), Nathaniel Fried (United States) (1. University of North Carolina at Charlotte)</td>
</tr>
<tr>
<td>1:45pm</td>
<td>TuB3.2</td>
<td>Multi-Contrast OCTA for Small Animal Imaging</td>
<td>Destiny Hsu (Canada), Ji Hoon Kwon (Canada), Marinko Sarunic (Canada), Myeong Ju (Canada) (1. Simon Fraser University, 2. University of British Columbia)</td>
</tr>
<tr>
<td>2pm</td>
<td>TuB3.4</td>
<td>Remote Monitoring of Microparticle Biosensors Using Optical Coherence Tomography</td>
<td>Shreyas Shah (United States), Mingde Zheng (United States), Michael S. Eggleston (United States) (1. Nokia Bell Labs)</td>
</tr>
<tr>
<td>2:15pm</td>
<td>TuB3.3</td>
<td>Progress on Multimodal Adaptive Optics OCT and Multiphoton Imaging</td>
<td>William Newberry (Canada), Jason Fung (Canada), Daniel Wahl (Canada), Myeong Ju (Canada), Marinko Sarunic (Canada) (1. Simon Fraser University, 2. University of British Columbia)</td>
</tr>
<tr>
<td>1:30pm</td>
<td>NANO 6</td>
<td>Nonlinear Nanophotonic Devices</td>
<td>Preksha Tiwari (Switzerland), Svenja Mahtue (Switzerland), Noelia Vico Triviño (Switzerland), Pengyan Wen (Switzerland), Yannick Baumgartner (Switzerland), Markus Scherrer (Switzerland), Daniele Caimi (Switzerland), Steffen Reitd (Switzerland), Kristen E. Moselund (Switzerland) (1. IBM - Research Zurich)</td>
</tr>
<tr>
<td>1:45pm</td>
<td>TuC3.2</td>
<td>Metal-Clad InP Cavities for Nanolasers on Si</td>
<td>Ayush Pandey (United States), Anthony Aiello (United States), Jiseok Gim (United States), Robert Hovden (United States), Emmanouil Kourtakis (United States), Pallab Bhattacharya (United States), Zetian Mi (United States) (1. University of Michigan)</td>
</tr>
<tr>
<td>2:15pm</td>
<td>TuC3.3</td>
<td>Nonlinear Chalcogenide Photonic Devices</td>
<td>Juliet Gopinath (United States) (1. University of Colorado Boulder)</td>
</tr>
<tr>
<td>2:30pm</td>
<td>TuC3.1</td>
<td>Realizing Spin-Hamiltonians in Nanolaser Lattices</td>
<td>Mercedes Khajavikhan (United States), Midya Parth (United States), Demetrios Christodoulides (United States), Alirez Marandi (United States), William Hayenga (United States) (1. University of Southern California, 2. CREOL, The College of Optics, University of Central Florida, 3. Caltech)</td>
</tr>
</tbody>
</table>
### 1:30pm | PSS 2 -
TuE3 - Integrated Photodetection Systems
Chaired by: Ganesh Balakrishnan (United States)

#### 1:30pm
**TuE3.2 - Foundry-Enabled Ge Photodiode Arrays on Si on Insulator (SOI) with On-Chip Biasing Circuit**
- **Keye Sun** (United States)
- Robert Costanzo (United States)
- Ta-Ching Tzu (United States)
- Steven Bowers (United States)
- Andreas Beling (United States) (1. University of Virginia)

#### 1:45pm
**TuE3.4 - Combined Time of Flight and Photometric Stereo Imaging for Surface Reconstruction**
- **Emma Le Francois** (United Kingdom)
- Johannes Herrnsdorf (United Kingdom)
- Jonathan J. D. McKendry (United Kingdom)
- Laurence Broadbent (United Kingdom)
- Martin D. Dawson (United Kingdom)
- Michael J. Strain (United Kingdom) (1. University of Strathclyde, 2. Aralia Systems)

### 2pm
**TuE3.5 - 18 GHz 3 dB bandwidth SiGe resonant photodetector in 45 nm SOI CMOS**
- **Marc de Cea Falco** (United States)
- John Fini (United States)
- Derek Van Orden (United States)
- Mark Wade (United States)
- Vladimir Stojanovic (United States)
- Rajeev Ram (United States) (1. Massachusetts Institute of Technology, 2. Ayar Labs, Inc, 3. University of California at Berkeley)

### 2:15pm
**TuE3.6 - Interferometric Sensors on Chip with Improved Phase Generated Carrier Demodulation**
- **Yisbel Marin** (Italy)
- Philippe Velha (Italy)
- Yoon Jeong (Germany)
- Hyun Jeon (Germany)
- Claudio Oton (Italy) (1. Scuola Superiore Sant'Anna, 2. Korean Institute of Science and Technology - Europe)

### 2:30pm
**TuE3.1 - Damage-Free Interconnection-Test Method for 2.5D/3D Packaging Devices based on Electro-Optic Sensing Technique**
- **Meehyun Lim** (Korea, Republic of)
- Sungyeol Kim (Korea, Republic of)
- Sungwhi Cho (Korea, Republic of)
- Myeonggiu Gil (Korea, Republic of)
- Jinyeong Yun (Korea, Republic of)
- Sangmi Lee (Korea, Republic of)
- Hyungjung Yong (Korea, Republic of)
- HoSun Yoo (Korea, Republic of) (1. Samsung Electronics)

### 1:30pm
**TuD3.1 (Invited) - Electrically injected AlGaN based deep-ultraviolet laser diodes**
- Maki Kushimoto (Japan)
- Ziyi Zhang (Japan)
- Naoharu Sugiyama (Japan)
- Leo Schowalter (United States)
- Yoshi Honda (Japan)
- Chiaki Sasaoka (Japan)
- Hiroyuki Hagino (Japan)
- Maki Kushimoto (Japan)
- Takashi Kano (Japan)
- Shinichiro Nozaki (Japan)
- Atsunori Machida (Japan)
- Takashi Kano (Japan)
- Shinichi Takigawa (Japan)
- Tsuyoshi Tanaka (Japan) (1. Nagoya University, 2. Nagoya University, Asahi Kasei Corporation, 3. Crystal IS inc.)

### 2pm
**TuD3.2 (Invited) - High-power operation of beam-quality-improved InGaN lasers with lateral corrugated waveguides**
- Hiroyuki Hagino (Japan)
- Masao Kagawuchi (Japan)
- Takahiro Nibu (Japan)
- Shinichiro Nozaki (Japan)
- Atsunori Machida (Japan)
- Takashi Kano (Japan)
- Shinichi Takigawa (Japan)
- Tsuyoshi Tanaka (Japan) (1. Sensing Solution Development Center, Industrial Solutions Company, Panasonic Corporation)

### 2:30pm
**TuD3.3 - AlGaN-based ultraviolet-B laser diode at 298 nm with threshold current density of 25 kA/cm²**
- Kosuke Sato (Japan)
- Kazuki Yamada (Japan)
- Sayaka Ishizuka (Japan)
- Shinji Yasue (Japan)
- Shunya Tanaka (Japan)
- Tomoya Omori (Japan)
- Shonei Teramura (Japan)
- Yuya Ogino (Japan)
- Sho Iwayama (Japan)
- Hideo Miyake (Japan)
- Masao Kawaguchi (Japan)
- Hiroshi Amano (Japan)
- Satoshi Kamiyama (Japan)
- Hiroshi Takeuchi (Japan)
- Satoshi Kamiyama (Japan)
- Isamu Akasaki (Japan) (1. Asahi-Kasei Corporation, 2. Meijo University, 3. Mie University)

### 2:45pm
**TuD3.4 - Performance Characterization of High and Low Power Prism based Tunable Blue Laser Diode Systems**
- Sani Mukhtar (Saudi Arabia)
- Jorge A. Holguin-Lerma (Saudi Arabia)
- Islam Ashry (Saudi Arabia)
- Tien Khee Ng (Saudi Arabia)
- Boon S. Ooi (Saudi Arabia)
- Mohammed Zahed Mustafa Khan (Saudi Arabia) (1. King Fahd University of Petroleum and Minerals, 2. King Abdullah University of Science and Technology)
Continued from Tuesday, 29 September

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Chair</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30pm</td>
<td>OMND 5 - TuF3 -</td>
<td>OMND Tutorial &amp; Programmable Integrated Photonics</td>
<td></td>
<td>Chaired by: William Loh (United States) and Kiyoul Yang (United States)</td>
</tr>
<tr>
<td></td>
<td>TuF3.1 (Tutorial) - Programmable Multifunctional Nanophotonic ICs</td>
<td>Jose Capmany (Spain)</td>
<td></td>
<td>(1. Universidad Politecnica Valencia)</td>
</tr>
<tr>
<td>1:30pm</td>
<td>DISL 2 - TuG3 -</td>
<td>Display &amp; Lighting Devices</td>
<td></td>
<td>Chaired by: Paul Schuele (United States) and Lih Lin (United States)</td>
</tr>
<tr>
<td></td>
<td>TuG3.1 (Invited) - Diffractive liquid crystal devices for AR/VR displays</td>
<td>Shin-Tson Wu (United States), Tao Zhan (United States), Jianghao Xiong (United States), Guanjun Tan (United States) (1. CREOL, The College of Optics, University of Central Florida, 2. CREOL, The College of Optics and photonics, University of Central Florida)</td>
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<tr>
<td>2pm</td>
<td>TuH3.1 (Invited) - Development and Characterization of 100 Gb/s Data Communication VCSELs</td>
<td>Laura Giovanne (United States), Ramana Murty (United States) (1. Broadcom)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2pm</td>
<td>TuH3.2 - A Compact Model for Datacom VCSEL Towards 25Gbaud and Beyond</td>
<td>Yaohui Chen (Denmark), Liron Gantz (Israel) (1. Mellanox Technologies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:15pm</td>
<td>TuH3.3 - Reach Extension in Short-Reach VCSEL-MMF Interconnects using a Coupling-Weighted Approach</td>
<td>Shanglin Li (Canada), Mohammadreza Sanadgol Nezami (Canada), Odile Liboiron-Ladouceur (Canada) (1. Department of Electrical and Computer Engineering, McGill University)</td>
<td></td>
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<tr>
<td>2:30pm</td>
<td>TuH3.4 - 25 Gb/s at 200 mW via 19-Element 980 nm VCSEL Arrays</td>
<td>Nasibeh Haghighi (Germany), Philip Moser (Germany), Martin Zorn (Germany), James Lott (Germany) (1. Technical University Berlin, 2. JENOPTIK Optical Systems GmbH)</td>
<td></td>
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</tr>
<tr>
<td>1:30pm</td>
<td>OI 7 - TuI3 - Active Silicon Photonics Part I</td>
<td>Chaired by: Jock Bovington (United States)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:30pm</td>
<td>TuI3.2 - GHz-rate positive conversion efficiency via FWM in multi-layer SiNx/a-Si:H waveguides</td>
<td>Neil MacFarlane (United States), Mark Foster (United States), Amy Foster (United States) (1. Johns Hopkins University)</td>
<td></td>
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</tr>
<tr>
<td>1:45pm</td>
<td>TuI3.3 - A broadband MZI-based thermal-optic mode insensitive switch in Silicon-on-Insulator</td>
<td>Guowu Zhang, Alok Das, Odile Liboiron-Ladouceur (Canada) (1. Department of Electrical and Computer Engineering, McGill University)</td>
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<tr>
<td>2pm</td>
<td>TuI3.4 - Enabling Modulation-Instability Combs in Kerr Microresonators for a PAM-4 Communication Link</td>
<td>Chinmay Shirpurkar, Ricardo Bustos-Ramirez (United States), Peter Delfyett (United States) (1. CREOL, The College of Optics, University of Central Florida)</td>
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<td>2:15pm</td>
<td>TuI3.1 (Invited) - TBD Lipson</td>
<td>Michal Lipson (United States) (1. Columbia University)</td>
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</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:45pm</td>
<td>Tul3.5 - Thermal Crosstalk in Silicon Photonic Microdisk Modulators for Ultra-Compact Dense-WDM Systems</td>
<td></td>
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<tr>
<td></td>
<td>» Nathan Abrams (United States)¹, Qixiang Cheng (United Kingdom)², Madeleine Glick (United States)¹, Keren Bergman (United States)¹ (1. Columbia University, 2. University of Cambridge)</td>
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<tr>
<td>3:30pm</td>
<td>BIO 7 - TuB4 - Microfluids</td>
<td></td>
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<td>Chaired by: Yuze Sun (United States) and Holger Schmidt (United States)</td>
<td></td>
</tr>
<tr>
<td>3:30pm</td>
<td>TuB4.1 (Invited) - Electro-Active Plasmonics for Label-Free Voltage Sensing and Electrophysiology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Ahsan Habib (United States)¹, Xiangchao Zhu (United States)¹, Isik Uryan Can (United States)², Maverick McLanahan (United States)², Pinar Zorlutuna (United States)¹, Ahmet Yanik (United States)¹ (1. School of Engineering, University of California, Santa Cruz, 2. University of Notre Dame, 3. University of Notre Dame)</td>
<td></td>
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<tr>
<td>4pm</td>
<td>TuB4.2 - Multiplexed single particle sensing in optofluidic sensors using free space excitation.</td>
<td></td>
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<td></td>
<td>» Md Nafiz Amin (United States)¹, Vahid Ganjalizadeh (United States)², Matthew Hamblin (United States)², Aaron R. Hawkins (United States)², Holger Schmidt (United States)¹ (1. School of Engineering, University of California, Santa Cruz, 2. ECEn Department, Brigham Young University, 450 Engineering Building, Provo, Utah)</td>
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<tr>
<td>4:15pm</td>
<td>TuB4.3 - Ioinc Liquid Droplet Lasers</td>
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<td>» Chen Zhang (United States)¹, Han Zhang (United States)¹, Seyedmohsen Vaziri (United States)¹, Fariba Kenarangi (United States)¹, Yuze Sun (United States)¹ (1. University of Texas at Arlington)</td>
<td></td>
</tr>
<tr>
<td>4:30pm</td>
<td>TuB4.4 - Thermo-Photonic Detection of THC in Oral Fluid: Transition from Bench-Top System to Handheld Device</td>
<td></td>
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<tr>
<td></td>
<td>» Nakisa Samadi (Canada)¹, Damber Thapa (Canada)¹, Nisarg Patel (Canada)¹, Nima Tabatabaei (Canada)¹ (1. York University)</td>
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<tr>
<td>3:30pm</td>
<td>NANO 7 - TuC4 - Nanostructures for Light Coupling</td>
<td></td>
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<td>Chaired by: Noel Giebink (United States) and Lan Yang (United States)</td>
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<td>3:30pm</td>
<td>TuC4.1 - Glide-symmetric waveguide design for guiding and control of spin-carrying photons</td>
<td></td>
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<td></td>
<td>» Hamidreza Siampour Ashkavandi (United Kingdom)¹, Maurice S. Skolnick (United Kingdom)¹, A. Mark Fox (United Kingdom)¹ (1. University of Sheffield)</td>
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</tr>
<tr>
<td>4pm</td>
<td>TuC4.2 - Polarization Insensitive Fiber-to-Chip Light Coupling to Aluminum Oxide/Silicon Augmented Low Index Waveguides</td>
<td></td>
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<tr>
<td></td>
<td>» Can Ozcan (Canada)¹, Stewart Aitchison (Canada)¹, Mo Mojahedi (Canada)¹ (T. University Of Toronto)</td>
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</tr>
<tr>
<td>4:15pm</td>
<td>TuC4.3 - Efficient Coupling of an Optical Antenna-LED to a Single-Mode Waveguide</td>
<td></td>
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<tr>
<td></td>
<td>» Nicolas Andrade (United States)¹, Yunjo Kim (United States)², Sean Hooten (United States)¹, Eli Yablonovitch (United States)¹, Jeehwan Kim (United States)², Ming Wu (United States)¹ (1. University of California, Berkeley, 2. Massachusetts Institute of Technology (MIT))</td>
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<tr>
<td>3:30pm</td>
<td>SL 3 - TuD4 - Tutorial on Semiconductor Lasers</td>
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<td></td>
<td>Chaired by: Nelson Tansu (United States)</td>
<td></td>
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<tr>
<td>3:30pm</td>
<td>TuD4.1 (Tutorial) - Advances in Quantum Dots Lasers and Integration</td>
<td></td>
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<tr>
<td></td>
<td>» Peter Smowton (United Kingdom)¹ (1. Cardiff University)</td>
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<tr>
<td>3:30pm</td>
<td>NLUO 2 - TuE4</td>
<td>High-intensity Ultrafast Sources</td>
</tr>
<tr>
<td>3:30pm</td>
<td>TuE4.1 (Invited)</td>
<td>Production of High-power Ultrashort Pulses in the Long-wave Infrared Range</td>
</tr>
<tr>
<td>4pm</td>
<td>TuE4.2</td>
<td>A Novel Method for Characterizing Isolated Attosecond Pulses</td>
</tr>
<tr>
<td>4:15pm</td>
<td>TuE4.3</td>
<td>Arbitrary vector spatiotemporal wavefront shaper</td>
</tr>
<tr>
<td>4:30pm</td>
<td>TuE4.4</td>
<td>Generation of Pulses with Dynamic Polarization Evolution Using Time-Varying Epsilon-Near-Zero Metasurface</td>
</tr>
<tr>
<td>4:45pm</td>
<td>TuE4.5</td>
<td>Demonstration of a Highly Power-Efficient XPM-Based Discrete Multilevel Time-Lens</td>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Chair(s)</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30pm</td>
<td>OMND 6 - TuF4</td>
<td>Micoresonator Assisted Sensing and Spectroscopy</td>
<td>Shu-Wei Huang (United States) and William Loh (United States)</td>
<td></td>
</tr>
<tr>
<td>3:30pm</td>
<td>TuF4.1 (Invited)</td>
<td>Photo-acoustic spectroscopy and hyperspectral-imaging with dual-frequency combs</td>
<td>Thibault Voumard (Germany), Thibault Wildi (Germany), Victor Brasch (Switzerland), Gürkan Yilmaz (Switzerland), Raul Gutierrez Alvarez (Spain), Germán Vergara Igando (Spain), Tobias Herr (Germany)</td>
<td>(1. DESY / CFEL, 2. CSEM, 3. NIT)</td>
</tr>
<tr>
<td>4pm</td>
<td>TuF4.2</td>
<td>Towards the detection of neuropeptide Y at nanomolar level by a SiN microring resonator</td>
<td>Subrata Das (United States), Sarath Samudrala (United States), Kyu Lee (United States), Brett Wenner (United States), Jeffery Allen (United States), Monica Allen (United States), Robert Magnusson (United States), Michael Vasilyev (United States)</td>
<td>(1. Dept. of Electrical Engineering, University of Texas at Arlington, 2. AFRL Sensors Directorate, Wright-Patterson Air Force Base, 3. AFRL Munitions Directorate, Eglin Air Force Base, 4. AFRL Munitions Directorate, Eglin Air Force Base)</td>
</tr>
<tr>
<td>4:15pm</td>
<td>TuF4.3</td>
<td>Characterization of Waveguide-Dopant Misalignment with Optical Measurements of Racetrack Microresonators</td>
<td>Andrew Netherton (United States), Aditya Malik (United States), John Bowers (United States)</td>
<td>(1. Department of Electrical and Computer Engineering, University of California Santa Barbara)</td>
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<tr>
<td>Time</td>
<td>Session Description</td>
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</table>
| 4:30pm | **TuF4.4** - Integrated Photonic Ring Resonator Correlation Filters For Remote HCN Sensing  
» Ross Cheriton (Canada), Adam Densmore (Canada), Suresh Sivanandam (Canada), Ernst de Mooij (United Kingdom), Mohsen Kamandar Dezfooli (Canada), Daniele Melati (Canada), Dan-Xia Xu (Canada), Jens H. Schmid (Canada), Pavel Cheben (Canada), Jean Lapointe (Canada), Siegfried Janz (Canada) (1. National Research Council Canada, 2. University Of Toronto, 3. Queen's University Belfast) |
| 3:30pm | **DISL 3** - TuG4 - LED Materials and Processes  
Chaired by: Siddha Pimputkar (United States) and Paul Schuele (United States)                                                                                                                                                                                                                                                                           |
| 3:30pm | **TuG4.2** - InGaN Photonic Crystal Green Micro LEDs with Ultra-Stable Operation  
» Xianhe Liu (United States), Yuanpeng Wu (United States), Yakshita Malhotra (United States), Yi Sun (United States), Matthew Stevenson (United States), Seth CoelSullivan (United States), Zetian Mi (United States) (1. University of Michigan, 2. NS Nanotech Inc.)                                                                                                                |
| 3:45pm | **TuG4.3** - Engineering of heterointerface polarization for high-efficiency AlGaN-based UV LED  
» Zhiyuan Liu (Saudi Arabia), Yi Lu (Saudi Arabia), Yue Wang (Saudi Arabia), Rongyu Lin (Saudi Arabia), Chenxin Xiong (Saudi Arabia), Xiaohang Li (Saudi Arabia) (1. KAUST)                                                                                                                        |
| 4pm    | **TuG4.4** - Ultraviolet Light-emitting Diodes with Buried Tunneling Junction  
» Yi Lu (Saudi Arabia), Chuanju Wang (Saudi Arabia), Victor Pávadeoliveira (Saudi Arabia), Zhiyuan Liu (Saudi Arabia), Xiaohang Li (Saudi Arabia) (1. KAUST)                                                                                                                                                   |
| 4:15pm | **TuG4.5** - An Investigation on Photonic Characteristics of A Side-pumping-Quantum-Dot LED  
» Chung-Ping Huang (Taiwan), Ting-Yu Lee (Taiwan), Hsiang-Yun Shih (Taiwan), Yin-Hsin Liu (Taiwan), Teng-Ming Chen (Taiwan), Hao-Chung Kuo (Taiwan), Chien-chung Lin (Taiwan) (1. Institute of Lighting and Energy Photonics, College of Photonics, National Chiao-Tung University, 2. Institute of Photonic System, College of Photonics, National Chiao-Tung University, 3. Department of Applied Chemistry, National Chiao-Tung University, 4. Department of Photonics, National Chiao-Tung University) |
| 4:30pm | **TuG4.1 (Invited)** - Low Temperature GaN Sputtering onto a Variety of Substrates  
» Hiroshi Fujioka (Japan) (1. University of Tokyo)                                                                                                                                                                                                                                                                                        |
| 3:30pm | **OI 8** - TuH4 - OI Workshop: The Future of VCSELs, 100G and Beyond?  
Chaired by: Daniel Kutcha (United States)                                                                                                                                                                                                                                                                                                      |
| 3:30pm | **TuH4.1 (WS)** - Flens  
» Frank Flens (United States) (1. II-VI)                                                                                                                                                                                                                                                                                                           |
| 3:45pm | **TuH4.2 (WS)** - Lysdal  
» Henning Lysdal (Denmark) (1. NVIDIA)                                                                                                                                                                                                                                                                                                                |
| 4pm    | **TuH4.3 (WS)** - Larsson  
» Anders Larsson (Sweden) (1. Chalmers University/Nvidia)                                                                                                                                                                                                                                                                                          |
| 3:30pm | **OI 9** - TuI4 - Active Silicon Photonics Part II  
Chaired by: Argishti Melikyan (United States)                                                                                                                                                                                                                                                                                                           |
| 3:30pm | **TuI4.1 (Invited)** - High-Speed, Multi-Level Operation of All-Silicon Segmented Modulator for Optical DAC Transmitter  
» Yohei Sobu (Japan), Shinsuke Tanaka (Japan), Yu Tanaka (Japan), Yuichi Akiyama (Japan), Takeshi Hoshida (Japan) (1. Fujitsu Limited)                                                                                                                                                                             |
Continued from Tuesday, 29 September

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>4pm</td>
<td><strong>TuI4.2 (Invited)</strong> - Silicon Photonics for 5G Communications</td>
<td>» Leslie Rusch (Canada), Xun Guan (Canada), Mingyang Lyu (Canada), Wei Shi (Canada) (1. Université Laval, 2. Centre d'optique, photonique et laser, Université Laval)</td>
<td></td>
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<tr>
<td>4:30pm</td>
<td><strong>TuI4.3</strong> - Variation-Aware Inter-Device Matching in Silicon Photonic Microring Resonator Demultiplexers</td>
<td>» Asif Mirza (United States), Sudeep Pasricha (United States), Mahdi Nikdast (United States) (1. COLORADO STATE UNIVERSITY)</td>
<td></td>
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<tr>
<td>4:45pm</td>
<td><strong>TuI4.4</strong> - Strained Ge0.99 Si0.01 Modulator Arrays for Integrated Broadband Modulation</td>
<td>» Danhao Ma (United States), Yiding Lin (Singapore), Ruitao Wen (China), Lionel Kimerling (United States), Jurgen Mitchel (United States) (1. Mit, 2. NTU, 3. SUSTECH)</td>
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Wednesday, 30 September

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<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>8:30am</td>
<td><strong>Plenary II</strong> - WA1 - Plenary II</td>
<td>Chaired by: Zetian Mi (United States)</td>
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<tr>
<td>8:30am</td>
<td><strong>WA1.1</strong> (Plenary) - Topological Photonics</td>
<td>» Mordechai (Moti) Segev (Israel) (1. Technion - Israel Institute of Technology)</td>
<td></td>
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<tr>
<td>9:15am</td>
<td><strong>WA1.2</strong> (Plenary) - Using Light to Control Electrons That, in Turn, Create New Light</td>
<td>» Paul B. Corkum (Canada) (1. University of Ottawa)</td>
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<tr>
<td>10:30am</td>
<td><strong>SL 4</strong> - WB2 - Dynamical Properties in Lasers</td>
<td>Chaired by: Johann Peter Reithmaier (Germany) and Sven Hoefling (Germany)</td>
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<tr>
<td>10:30am</td>
<td><strong>WB2.1 (Invited)</strong> - Frequency-domain Modeling of Semiconductor Mode-lock Lasers</td>
<td>» Weng Chow (United States), Songtao Liu (United States), Justin Norman (United States), Jianan Duan (France), Frédéric Grillot (France), John Bowers (United States) (1. Sandia National Lab, 2. Department of Electrical and Computer Engineering, University of California Santa Barbara, 3. Institut Polytechnique de Paris, 4. Télécom Paris, 5. University of C)</td>
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<tr>
<td>11am</td>
<td><strong>WB2.2</strong> - Amplitude noise and RF response analysis of 1 GHz mode-locked pulses from an InP-based laser chip at 1550 nm</td>
<td>» Mohammad Ali Aliloush (Germany), Marcel van Delden (Germany), Amer Bassal (Germany), Carsten Brenner (Germany), Thomas Musch (Germany), Mu-Chieh Lo (United Kingdom), Luc Augustin (Netherlands), Robinson Guzmán (Spain), Guillermo Carpintero (Spain), Martin R. Hofmann (Germany) (1. Ruhr-Universität Bochum, 2. University College London, 3. Smart Photonics, 4. University Carlos III de Madrid)</td>
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<tr>
<td>11:15am</td>
<td><strong>WB2.3</strong> - Experimental Implementation of a Photonic Neural Network with a 1550nm-VCSEL subject to Optical Injection and Delayed Optical Feedback</td>
<td>» Julián Bueno (United Kingdom), Joshua Robertson (United Kingdom), Matěj Hejda (United Kingdom), Antonio Hurtado (United Kingdom) (1. University of Strathclyde)</td>
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<tr>
<td>11:30am</td>
<td><strong>WB2.4</strong> - Numerical Simulation on Narrowing Linewidth of a Laser Diode With Dual-Loop Optical Feedback</td>
<td>» da chen (China), yonglin yu (China) (1. Huazhong University of Science and Technology)</td>
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<td>10:30am</td>
<td><strong>PMM 1</strong> - WC2 - Semiconductor Optoelectronic Devices</td>
<td>Chaired by: Stephanie Law (United States) and Aaron Muhowski (United States)</td>
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<td>10:30am</td>
<td><strong>WC2.1 (Invited)</strong> - Growth of (In,Ga)N on ZnO by molecular beam epitaxy for optoelectronics and electronics applications</td>
<td>» Fiaheh Ahmadi (United States) (1. University of Michigan)</td>
<td></td>
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</table>
11am WC2.2 - Vertical GeSn Electro-absorption Modulators Grown on Silicon for the Mid-infrared
» Bertrand Mathieu (France), Lara Casiez (France), Andrea Quintero (France), Jérémie Chrétien (France), Nicolas Pauc (France), Quang Minh Thai (France), Rami Khazaka (France), Philippe Rodriguez (France), Jean-Michel Hartmann (France), Alexei Chelnokov (France), Vincent Calvo (France), Vincent Reboud (France) (1. Univ. Grenoble Alpes, LETI, 2. Univ. Grenoble Alpes, CEA, IRIG-DePhy)

11:15am WC2.3 - p-type Doping of Dilute-Anion III-Nitride Materials
» Justin Goodrich (United States), Damir Borovac (United States), Chee Keong Tan (United States), Nelson Tansu (United States) (1. Lehigh University, 2. Clarkson University)

11:30am WC2.4 - Band Alignment of Nearly Lattice-Matched ScAlN/GaN Heterojunction
» Hanlin Fu (United States), Justin Goodrich (United States), Nelson Tansu (United States) (1. Lehigh University)

11:45am WC2.5 - Dilute-Se Ga2(O1-xSex)3 for Ultraviolet and Visible Photodetector
» Xiaoli Liu (United States), Chee Keong Tan (United States) (1. Clarkson University)

10:30am SS EQD 1 - WD2 - OLED Lighting
Chaired by: Johannes Herrnsdorf (United Kingdom)

10:30am WD2.1 (Invited) - Red OLEDs for Automotive Rear Combination Lights
» Michael Boroson (United States), Marina Kondakova (United States), Juergen Eser (Germany), Michael Buechel (Germany), Joerg Knipping (Germany), Florian Lindla (Germany), Jeffrey Spindler (United States), Kathleen Vaeht (United States) (1. OLEDWorks LLC, 2. OLEDWorks GmbH, 3. OLEDWorks)

11am WD2.2 (Invited) - Developing New OLED Materials and Applications
» Simonas Krotkus (United Kingdom), Amlan Pal (United Kingdom), Eli Zysman-Colman (United Kingdom), Ifor Samuel (United Kingdom) (1. University of St Andrews, 2. University of St Andrews)

11:30am WD2.3 - Light Emission Enhancement in Red Phosphorescent Organic Light-Emitting Diode by Carbon Quantum Dots Doping
» Zingway Pei (Taiwan), Yi-Chun Liu (Taiwan), Han-yun Wei (Taiwan) (1. National Chung Hsing University)

10:30am OFT 1 - WE2 - Fiber Optic Design
Chaired by: Kevin Chen (United States) and Nicholas Fontaine (United States)

10:30am WE2.1 (Invited) - Silicon core fibers for integrated nonlinear systems
» Anna Peacock (United Kingdom) (1. University of Southampton)

11am WE2.2 - Fabrication of 2D and 3D Photonic Structures using Focused Ion Beam
» Karen Sloyan (United Arab Emirates), Henrik Melkonyan (Armenia), Marcus Dahlem (Belgium) (1. Khalifa University of Science and Technology, 2. Datafoundry Labs, 3. Interuniversity Microelectronics Center (IMEC))

11:15am WE2.3 - Supercontinuum Generation in Suspended Core As2S3 Tapered Fiber
» Imtiaz Alamgir (Canada), Md. Hosne Mobarak Shamim (Canada), Mohammed El Amraoui (Canada), Younes Messaddeq (Canada), Martin Rochette (Canada) (1. Department of Electrical and Computer Engineering, McGill University, 2. Centre d'optique, photonique et laser, Université Laval)

11:30am WE2.4 - Ultra-low Loss Single-mode Hollow-core Fiber Designs
» Md Selim Hahib (United States), Muhammad Sana Ullah (United States) (1. Optoelectronics Research Group, Department of Electrical and Computer Engineering, Florida Polytechnic University, 2. Department of Electrical and Computer Engineering)
### Wednesday, 30 September

**10:30am**
**NLUO 3 - WF2 - Imaging and Spectroscopy**
Chaired by: Takuro Ideguchi (Japan) and Sunao KURIMURA (Japan)

**10:30am**
**WF2.1 (Invited) - Mid-infrared photothermal spectroscopy and phase-sensitive imaging**
» Michelle Sander (United States)¹ (1. Boston University)

**11am**
**WF2.2 - Probing regimes of nonlinear light amplification in optically excited dielectrics**
» Thomas Winkler (Denmark)¹, Peter Balling (Denmark)¹, Thomas Baumert (Germany)² (1. University of Aarhus, 2. University of Kassel)

**11:15am**
**WF2.3 - High Resolution, Fast Measurement of an Arbitrary Optical Pulse using Dual Comb Spectroscopy**
» Sutapa Ghosh (Israel)¹, Gadi Eisenstein (Israel)¹ (1. Technion)

**11:30am**
**WF2.4 - Hyperfine Filtering of an Electro-Optic Modulated Comb**
» Lawrence Trask (United States)¹, Ricardo Bustos-Ramirez (United States)¹, Chinmay Shirpurkar (United States)¹, Srinivas Varma Pericherla (United States)¹, Peter Delfyett (United States)¹ (1. CREOL, The College of Optics, University of Central Florida)

**10:30am**
**OCN 4 - WG2 - Optical Transceivers and DSP**
Chaired by: Deepa Venkitesh (India) and Fatima Gunning (Ireland)

**10:30am**
**WG2.1 - Indoor Optical Wireless Communications using Few-mode Based Uniform Beam Shaping and LMS Based Adaptive Equalization**
» jianghao Li (Australia)¹, Christina Lim (Australia)¹, Ampalavanapillai Nirmalathas (Australia)¹ (1. Department of Electrical and Electronic Engineering, The University of Melbourne)

**10:45am**
**WG2.2 - Low-Complexity Digital Coherent Receivers for Short-Reach Transmission Systems**
» Takuma Kuno (Japan)¹, Yojiro Mori (Japan)¹, Hiroshi Hasegawa (Japan)¹ (1. Nagoya University)

**11am**
**WG2.3 - Chromatic Dispersion Tolerant Timing Phase Recovery for Optical Coherent Receivers**
» Dawei Wang (China)¹, Hao Jiang (China)¹, Zhaozhi Li (China)¹ (1. School of Electrical and Information Technology, Sun Yat-sen University)

**11:15am**
**WG2.4 - Direct clock optical transmission using commercial SFP transceivers for metropolitan network**
» Josef Vojtech (Czech Republic)¹, Martin Slapak (Czech Republic)¹, Vladimir Smotlacha (Czech Republic)¹, Sarbojeet Bhowmick (Czech Republic)¹, Jaroslav Roztocil (Czech Republic)², Jan Kundrat (Czech Republic)², Petr Munster (Czech Republic)², Tomas Horvath (Czech Republic)², Ondrej Havlis (Czech Republic)², Rudolf Vohnout (Czech Republic)² (1. CESNET, 2. Czech Technical University in Prague, Faculty of Electrical engineering)

**11:30am**
**WG2.5 - Reduced Complexity Compensation of I/Q Skew and Imbalance in Subcarrier Multiplexing Receivers**
» Martin Casabella (Argentina)¹, Ariel L. Pola (Argentina)¹, Mario R. Hueda (Argentina)¹ (1. Fundacion Fulgor, 2. CONICET)

**11:45am**
**WG2.6 - Training Approaches in Supervised Learning for ICI Mitigation in Gridless Nyquist-WDM**
» Alejandro Escobar Pérez (Colombia)¹, Alejandro Estrada Moscoso (Colombia)¹, Nei Guerrero González (Colombia)¹, Jhon Granada (Colombia)¹ (1. Universidad de Antioquia, 2. Universidad Nacional de Colombia)

**10:30am**
**OI 10 - WH2 - OI Keynote & New Architectures and AI**
Chaired by: Liron Gantz (United States)
### IEEE Photonics Conference 28 Sep - 01 Oct 2020

Continued from **Wednesday, 30 September**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speakers</th>
</tr>
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<tbody>
<tr>
<td>10:30am</td>
<td>WH2.2 (Invited) - Dynamic optical interconnects for quantum secure distributed nodes and quantum processing</td>
<td>George Kanellos (United Kingdom), Obada Alia (United Kingdom), Emilio Hugues-Salas (United Kingdom), Rodrigo Stange Tessinari (United Kingdom), Rui Wang (United Kingdom), Reza Nejabati (United Kingdom), Dimitra Simeonidou (United Kingdom) (1. University of Bristol)</td>
</tr>
<tr>
<td>11:00am</td>
<td>WH2.3 - Energy-Efficient Multiply-and-Accumulate Using Silicon Photonics for Deep Neural Networks</td>
<td>Kyle Shiflett (United States), Avinash Karanth (United States), Ahmed Louri (United States), Razvan Bunescu (United States) (1. Ohio University, 2. George Washington University)</td>
</tr>
<tr>
<td>11:15am</td>
<td>WH2.1 (Keynote) - AI Systems Drivers for Optical Interconnect</td>
<td>Larry Dennison (United States) (1. NVIDIA)</td>
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<tr>
<td>1:00pm</td>
<td>Sl5 - WB3 - Surface Emitting Lasers</td>
<td>Chaired by: Chee Keong Tan (United States)</td>
</tr>
<tr>
<td>1:00pm</td>
<td>WB3.1 - Neuromorphic Object Edge Detection with Artificial Photonic Spiking VCSEL-Neurons</td>
<td>Joshua Robertson (United Kingdom), Matěj Hejda (United Kingdom), Yahui Zhang (China), Julián Bueno (United Kingdom), Shuiying Xiang (China), Antonio Hurtado (United Kingdom) (1. University of Strathclyde, 2. Xidian University)</td>
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<tr>
<td>1:45pm</td>
<td>WB3.2 - Low threshold current single mode 894 nm VCSELs with SiO2/Si3N4 dielectric DBRs</td>
<td>Pingping Qiu (China), Bo Wu (China), Ming Li (China), Yaobin Li (China), Yiyang Xie (China), Qiang Kan (China) (1. Institute of Semiconductors, Chinese Academy of Sciences, 2. Beijing University of Technology, 3. Institute of Semiconductors, Chinese Academy of Sciences)</td>
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<th>Time</th>
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<th>Speakers</th>
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<tr>
<td>2pm</td>
<td>WB3.3 - Orbital Angular Momentum Modes from Coherently Coupled VCSEL Arrays</td>
<td>Raman Kumar (United States), Pawel Strzebonski (United States), Kent Choquette (United States) (1. University of Illinois Urbana-Champaign)</td>
</tr>
<tr>
<td>2:15pm</td>
<td>WB3.4 - Beam-Steering in 2D via Non-Linear Mapping of 1D Beam-Steering</td>
<td>Pawel Strzebonski (United States), Raman Kumar (United States), Kent Choquette (United States) (1. University of Illinois Urbana-Champaign)</td>
</tr>
<tr>
<td>2:30pm</td>
<td>WB3.5 - Power-bandwidth-efficiency trade-offs of septuple VCSEL arrays</td>
<td>Nasibeh Haghighi (Germany), Philip Moser (Germany), James Lott (Germany) (1. Technical University Berlin)</td>
</tr>
<tr>
<td>2:45pm</td>
<td>WB 3.6 - Surface-emitting Quantum Cascade Laser with Photonic Crystal at 4 um</td>
<td>Shinji Saito (Japan), Rei Hashimoto (Japan), kei kaneko (Japan), Kàkunô Tsutomu (Japan), Yuanzhaoyao (Japan), Naoki Ikeda (Japan), Yoshimasa Sugimoto (Japan), Takaaki Mano (Japan), Kazuaki Sakoda (Japan) (1. Toshiba Corporation, 2. National Institute for Materials Science)</td>
</tr>
<tr>
<td>1:00pm</td>
<td>PMM 2 - WC3 - Design of Nanophotonic Devices</td>
<td>Chaired by: Jason Valentine (United States) and Desalegn Debu (United States)</td>
</tr>
<tr>
<td>1:00pm</td>
<td>WC3.1 - GaN Subwavelength Gratings by Machine Learning Design</td>
<td>Onoriode Ogidi-Ekoko (United States), Wen Liang (United States), Haotian Xue (United States), Nelson Tansu (United States) (1. Lehigh University)</td>
</tr>
<tr>
<td>1:45pm</td>
<td>WC3.2 - Analytical Design of Additively Manufactured Focusing Metamaterial</td>
<td>Emma Woods (United Kingdom), Ricky Wildman (United Kingdom), Mark Fromhold (United Kingdom), Christopher Tuck (United Kingdom) (1. University of Nottingham)</td>
</tr>
</tbody>
</table>
Continued from Wednesday, 30 September

2pm WC3.3 - Y-junction Power Splitter Engineered Through Subwavelength Metamaterials
» Raquel Fernández de Cabo (Spain), David González Andrade (Spain), Pavel Cheben (Canada), Aitor Villafranca Velasco (Spain) (1. Consejo Superior de Investigaciones Científicas (CSIC), 2. National Research Council Canada, 3. Consejo superior de investigaciones científicas)

2:15pm WC3.4 (Invited) - Enforcing Physics and Physical Constraints in Inverse Electromagnetics Design with Neural Networks
» Jonathan Fan (United States) (1. Stanford)

1:30pm SS EQD 2 - WD3 - Quantum Dot Materials and Devices
Chaired by: Lih Lin (United States) and Sean Garner (United States)

1:30pm WD3.1 (Invited) - Hidden Powers of Tiny Particles: From Ultrabright LEDs and Multicolor Lasers to Power-Producing Solar Windows
» Victor Klimov (United States) (1. Los Alamos National Laboratory)

2pm WD3.2 (Invited) - Nanocrystal Optoelectronics using Efficient Colloidal Quantum Emitters: from Dots to Wells
» Hilmi Volkan Demig (Turkey) (1. NTU Singapore and UNAM Bilkent University, Ankara, Turkey)

2:30pm WD3.3 (Invited) - Luminescent Nanomaterials and Devices for Display, Lighting and Photomedicine
» Yajie Dong (United States) (1. University of Central Florida)

1:30pm OFT 2 - WE3 - Fiber Optic Imaging and Optical Signal Processing
Chaired by: Oleg Sinkin (United States) and Kevin Chen (United States)

1:30pm WE3.1 (Invited) - Optical Fiber Technology and Biomedical Imaging
» Shuo Tang (Canada) (1. University of British Columbia)

2pm WE3.2 - Self-Switching of Femtosecond Pulses in Highly Nonlinear Dual-Core Fibre
» Mattia Longobucco (Poland), Ignas Astrauskas (Austria), Audrius Pugužys (Austria), Dariusz Pysz (Poland), František Uherek (Slovakia), Andrus Baituška (Austria), Ryszard Buczyński (Poland), Ignács Bugár (Poland) (1. Department of Glass, Łukasiewicz Research Network - Institute of Electronic Materials Technology, Warsaw, 2. Photonics Institute, Vienna University of Technology, Vienna, 3. International Laser Centre, Bratislava, 4. Department of Geophysics, Faculty of Physics, University of Warsaw, Warsaw)

2:15pm WE3.3 - Piecewise Parabolic Phase Modulation Scheme for Suppression of Stimulated Brillouin Scattering
» Josh Young (United States), Jeffrey White (United States), Chengli Wei (United States), Jonathan Hu (United States), Curtis Meruyuk (United States) (1. Baylor University, 2. University of Maryland Baltimore County, 3. University of Mary-Hardin Baylor)

2:30pm WE3.4 - Noise figure of a 3-stage hybrid amplifier using parametric wavelength converters and EDFA
» Afshin Shamshschooli (United States), Cheng Guo (United States), Michael Vasilyev (United States), Youichi Akasaka (United States), Tadashi Ikeuchi (United States) (1. Dept. of Electrical Engineering, University of Texas at Arlington, 2. Dept. of Electrical Engineering, University of Texas at Arlington, 3. Advanced Technology Labs, Fujitsu Network Communications Richardson, TX, 4. Network Technology Labs, Fujitsu Laboratories of America Richardson, TX)

2:45pm WE3.5 - Demonstration of dispersive waveform propagation tracking with a temporal phase modulator
» Xinyi Zhu (Canada), Luis Romero Cortés (Canada), José Azaña (Canada) (1. Institut National de la Recherche Scientifique, Énergie, Matériaux et Télécommunications (INRS-EMT))

1:30pm NLUO 4 - WF3 - Novel Sources and Techniques
Chaired by: Goutam Samanta (India) and Sergey Popov (Sweden)

1:30pm WF3.1 (Invited) - Orbital angular momentum microlaser: From the first demonstration to tunability
» Liang Feng (United States) (1. University of Pennsylvania)
2pm

WF3.2 - Generation of Vortex Optical Pin-like Beams
» Domenico Bongiovanni (China), Denghui Li (China), Mihalis Goutsoulas (Greece), Daohong Song (China), Yi Hu (China), Nikolaos K. Efremidis (Greece), Roberto Morandotti (Canada), Zhigang Chen (China) (1. Nankai University, 2. University of Crete, 3. INRS-EMT)

2:15pm

WF3.3 - Mid-infrared Second Harmonic Generation in Ge/SiGe Coupled Quantum Wells
» Jacopo Frigerio (Italy), Chiara Ciano (Italy), Andrea Ballabio (Italy), Daniel Christstina (Italy), Jonas Allerbeck (Germany), Joel Kuttruff (Germany), Lunjie Zeng (Sweden), Eva Olsson (Sweden), Daniele Briga (Luxembourg), Giovanni Isella (Italy), Michele Virgilo (Italy), Michele Ortolani (Italy) (1. Politecnico di Milano, 2. Universität Rome Tre, 3. University of Konstanz, 4. Chalmers University, 5. Université de Luxembourg, 6. Università di Pisa, 7. Università di Roma la Sapienza)

2:30pm

WF3.4 - All-Optical 40-GHz to 40-GHz Switching by Cascade Second-Order Nonlinearities in a QPM-PPLN Device
» Yutaka Fukuchi (Japan), Yusuke Kameda (Japan) (1. Tokyo University of Science)

1:30pm

OCN 5 - WG3 - Optical Subsystems
Chairied by: Fotini Karinou (United States) and Youichi Akasaka (United States)

1:30pm

WG3.1 (Invited) - External vs. Integrated Light Sources for Co-Packaged Intra-Data Center Optics
» Brandon Buscaino (United States), Joseph M. Kahn (United States), Brian D. Taylor (United States) (1. Stanford University, 2. Inphi Corporation)

1:30pm

WH3.1 - Low Loss 8 × 8 Silicon Photonic Banyan Switch
» Alok Das (Canada), Hassan Rahbardar Mojaver (Canada), Guowu Zhang (Canada), Odile Liboiron-Ladouceur (Canada) (1. Department of Electrical and Computer Engineering, McGill University)

1:30pm

WH3.2 - A Novel On-chip Photonic Synapse Based on Slot-ridge Waveguides
» Huan Zhang (China), Beiju Huang (China), Chuantong Cheng (China), Hongda Chen (China) (1. Institute of Semiconductors, Chinese Academy of Sciences, University of Chinese Academy of Sciences)
Continued from Wednesday, 30 September

2pm

**WH3.3 - Scalable SOA-Based Lossless Photonic Switch in InP Platform**
- Hassan Rahbarard Mohajer (Canada), Alok Das (Canada), Bahaa Radi (Canada), Valery Tolstikhin (Canada), Kin-Wai Leong (Canada), Odile Liboiron-Ladouceur (Canada) (1. Department of Electrical and Computer Engineering, McGill University, 2. McGill University, 3. Intengent, Inc., 4. Rockport Networks Inc.)

2:15pm

**WH3.4 - Multi-FSR Flex-LIONS: A Bandwidth Reconfigurable Optical Interconnect Architecture with Minimal Network Diameter**
- Marjan Fariborz (United States), Pouya Fotouhi (United States), Xian Xiao (United States), Roberto Proietti (United States), S. J. Ben Yoo (United States) (1. University of California, Davis)

2:30pm

**WH3.5 - A Flexible HyperX Topology Using Silicon Photonic Switching for Bandwidth Steering**
- Yu-Han Hung (United States), Shijia Yan (United States), Yiwen Shen (United States), Ziyi Zhu (United States), Min Yee (United States), Madeleine Glick (United States), Keren Bergman (United States) (1. Columbia University)

2:45pm

**WH3.6 - A Reconfigurable Broadband Space-Mode Router using Multiplane Light Conversion**
- Yuanhang Zhang (United States), He Wen (United States), Nicholas Fontaine (United States), Haoshuo Chen (United States), Patrick LiKamWa (United States), Guiyang Li (United States) (1. CREOL, The College of Optics, University of Central Florida, 2. Nokia Bell Labs)

3:00pm

**SL6 - WB4 - Novel Processing and Materials for Lasers**
Chaired by: Hongping Zhao (United States) and Nelson Tansu (United States)

3:30pm

**WB4.1 (Invited) - Oxygen-Enhanced Wet Thermal Oxidation for In-Plane Semiconductor Lasers**
- Douglas Hall (United States), Jinyang Li (United States), Yuan Tian (United States), Christopher Seibert (United States), Wangqing Yuan (United States), Jusong Wang (United States), Di Liang (United States), Nathaniel Crain (United States), Yong Luo (United States) (1. University of Notre Dame)

4pm

**WB4.2 - Surface-Etched Laterally Structured Semiconductor Laser Diodes for Mode Engineering**
- Pawel Strzebonski (United States), Katherine Lakomy (United States), Kent Choquette (United States) (1. University of Illinois, Urbana-Champaign, 2. choquette@illinois.edu)

4:15pm

**WB4.3 - Low-cost semiconductor swept source laser for near-infrared Optical Coherence Tomography**
- Arita Roy (Ireland), Saroj Kanta Patra (Ireland), Tomasz Pionowski (Ireland) (1. Tyndall National Institute, University College Cork)

4:30pm

**WB4.4 - Continuous Wave Lasing in Strained Germanium Microbridge**
- Francesco Armand Pilon (Switzerland), Yann-Michel Niquet (France), Vincent Reboud (France), Vincent Calvo (France), Nicolas Pauc (France), Julie Widiez (France), Jean-Michel Hartmann (France), Alexei Chelnokov (France), Jerome Faist (Switzerland), Hans Sigg (Switzerland) (1. Paul Scherrer Institut, 2. Universite Grenoble Alpes, CEA, IRIG-DePhy, 3. Univ. Grenoble Alpes, CEA, LETI, 38054 Grenoble, France, 4. Institute for Quantum Electronics, ETH Zürich)

4:45pm

**WB4.5 - Correlation Between Strain and Maximum Lasing Temperature in GeSn Microbridges**
- Jérémie Chrétien (France), Nicolas Pauc (France), Quang Minh Thai (France), Francesco Armand Pilon (Switzerland), Lara Casiez (France), Marvin Frauenrath (France), Rami Khazaka (France), Denis Rouchon (France), Jerome Faist (Switzerland), Hans Sigg (Switzerland), Alexei Chelnokov (France), Vincent Reboud (France), Samuel Tardif (France), Jean-Michel Hartmann (France), Vincent Calvo (France) (1. Univ. Grenoble Alpes, CEA, IRIG-DePhy, 2. Univ. Grenoble Alpes, CEA, IRIG-DePhy, 38054 Grenoble, France, 3. Paul Scherrer Institut, 4. Univ. Grenoble Alpes, CEA, LETI, 38054 Grenoble, France, 5. Univ. Grenoble Alpes, CEA, LETI, 6. Institute for Quantum Electronics, ETH Zürich)
### WC4 - Nanophotonic Emitters, Detectors, and Filters

**Chaired by:** Dan Wasserman (United States) and Anthony Hoffman (United States)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30pm</td>
<td><strong>WC4.2 - Metallic Nanohole Integrated on a Dielectric Multilayer for IR Multispectral Imaging</strong></td>
<td>Yajing Liu (Australia), XIN HE (Australia), Paul Beckett (Australia), Hemayet Uddin (Australia), Ranjit Unnithan (Australia) (1. Department of Electrical and Electronic Engineering, The University of Melbourne, 2. RMIT University, 3. Melbourne Centre for Nanofabrication)</td>
</tr>
<tr>
<td>3:45pm</td>
<td><strong>WC4.3 - Planar Structure with High Spectrally-Selective Emittance for Passive Radiative Cooling</strong></td>
<td>Nusrat Alim (Australia), Ahasanul Haque (Australia), Evgeny Morozov (Australia), Svetlana V. Boriskina (United States), Haroldo Hattori (Australia), Andrey Miroshnichenko Miroshnichenko (Australia) (1. University of New South Wales (UNSW), 2. Massachusetts Institute of Technology (MIT))</td>
</tr>
<tr>
<td>4pm</td>
<td><strong>WC4.4 - Angle Independent Narrow Bandpass Filters based on the Localized Surface Plasmon</strong></td>
<td>XIN HE (Australia), Yajing Liu (Australia), Paul Beckett (Australia), Hemayet Uddin (Australia), Ampalavanapillai Nirmalathas (Australia), Ranjit Unnithan (Australia) (1. Department of Electrical and Electronic Engineering, The University of Melbourne, 2. RMIT University, 3. Melbourne Centre for Nanofabrication)</td>
</tr>
<tr>
<td>4:15pm</td>
<td><strong>WC4.5 - Microbubble-Assisted Concentration and Ultrasensitive Detection of Biomolecules Using Plasmonic Chiral Metamaterials</strong></td>
<td>Yaoran Liu (United States), Yuebing Zheng (United States), Zilong Wu (United States) (1. the university of texas, 2. the university of texas at austin)</td>
</tr>
</tbody>
</table>

**WC4.1 (Invited) - Nanophotonic Structures for Spectral Emission Control**

- Michelle Povinelli (United States), Ahmed Morsy (United States), Romil Audhkhasis (United States), Aravind Krishnan (United States) (1. University of Southern California, 2. University of Southern California)

**WC4.4 - Angle Independent Narrow Bandpass Filters based on the Localized Surface Plasmon**

- Frédéric Grillot (France), Jianan Duan (France), Bozhang Dong (France), Hening Huang (France), Songtao Liu (United States), Justin Norman (United States), Weng Chow (United States), John Bowers (United States) (1. Institut Polytechnique de Paris, 2. Department of Electrical and Computer Engineering, University of California Santa Barbara, 3. Sandia National Lab)

**WC4.3 - Planar Structure with High Spectrally-Selective Emittance for Passive Radiative Cooling**

- Di Liang (United States) and Sarvagya Dwivedi (Belgium)

**WC4.2 - Metallic Nanohole Integrated on a Dielectric Multilayer for IR Multispectral Imaging**

- Michelle Povinelli (United States), Ahmed Morsy (United States), Romil Audhkhasis (United States), Aravind Krishnan (United States) (1. University of Southern California, 2. University of Southern California)

**WC4.5 - Microbubble-Assisted Concentration and Ultrasensitive Detection of Biomolecules Using Plasmonic Chiral Metamaterials**

- Yaoran Liu (United States), Yuebing Zheng (United States), Zilong Wu (United States) (1. the university of texas, 2. the university of texas at austin)
### WD4.4 - Passive and Active Thermal Management of Bonded Bare-Dice Laser Diodes on Polymer Foil Substrates
- **Sebastian Bengsch** (Germany), **Marc Christopher Wurz** (Germany)  
  (1. Leibniz University Hanover)

### WD4.5 - Integrated All-optical VO2/Si Waveguide Switch
- **Jorge Parra** (Spain), **Todora Angelova** (Spain), **Mariela Menghini** (Belgium), **Pia Homm** (Belgium), **Jean-Pierre Locquet** (Belgium), **Pablo Sanchis** (Spain)  
  (1. Universitat Politècnica de València, 2. Katholieke Universiteit Leuven)

### WD4.6 - Ultra-Low Voltage Silicon Photonic MEMS Phase Shifter
- **Venkatesh Deenadayalan** (United States), **Matthew van Niekerk** (United States), **Michael Fanto** (United States), **Stefan Preble** (United States)  
  (1. Rochester Institute of Technology, 2. Air Force Research Laboratory)

### WE4 - Awards II
- Chaired by: **Christina Lim** (Australia) and **Weidong Zhou** (United States)

### WE4.1 (Awards) - Computational Laser Metrology for Multimode Fiber Communication
- **Juergen Czarske** (Germany)  
  (1. TU Dresden)

### WE4.2 (Awards) - William Streifer Scientific Achievement Award Semiconductor Diode Based Ultrafast Laser Science and Technology
- **Peter Delfyett** (United States)  
  (1. CREOL, The College of Optics, University of Central Florida)

### WE4.3 (Awards) - Optics of Nonlinear Periodic Structures
- **Herbert Winful** (United States)  
  (1. EECS Department, University of Michigan)

### WE4.4 (Awards) - Reflective Optical Limiters Based on Tunable Resonant Transmission
- **Mikhail Kats** (United States)  
  (1. University of Wisconsin, Madison)

### WF4.1 - Laser-driven solenoidal currents for ultrafast magnetic field excitation
- **Shawn Sederberg** (Canada), **Kamalesh Jana** (Canada), **Katherine Herperger** (Canada), **Fanqi Kong** (Canada), **Felix Hufnagel** (Canada), **Chunmel Zhang** (Canada), **Ebrahim Karimi** (Canada), **Paul B. Corkum** (Canada)  
  (1. University of Ottawa)

### WF4.2 - Broadband Supercontinuum Generation on an Industrial Platform
- **Christian Lafforgue** (France), **Sylvain Guerber** (France), **Guillaume Marcaud** (France), **Joan Manel Ramirez** (France), **Carlos Alonso-Ramos** (France), **Xavier Le Roux** (France), **Delphine Marris-Morini** (France), **Eric Cassan** (France), **Frederic Boeuf** (France), **Sébastien Cremer** (France), **Charles Baudot** (France), **Stéphane Monfray** (France), **Laurent Vivien** (France)  
  (1. Université Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies, 2. Technologie R&D, STMicroelectronics, 3. III-V Lab, a joint venture from Nokia Bell Labs, Thalès and CEA, 4. STMicroelectronics, Rue Jean Monnet 38054 Crolles, France, 5. STMicroelectronics)

### WF4.4 - Hydrophobicity of Back-Illuminated Polymer Film Surfaces
- **Deepak Kallepalli** (Canada), **Alan Godfrey** (Canada), **Jesse Ratté** (Canada), **Paul B. Corkum** (Canada)  
  (1. University of Ottawa)

### WF4.5 - Nonlinear Response of ENZ Plasmon Modes near 1550 nm
- **Cong Liu** (United States), **M. Zahirul Alam** (Canada), **Karapet Manukyan** (United States), **Kai Pang** (United States), **Yiyu Zhou** (United States), **Hao Song** (United States), **Xinzhou Su** (United States), **Joshua Hendrickson** (United States), **Evan Smith** (United States), **Moshe Tur** (Israel), **Robert Boyd** (United States), **Alan Willner** (United States)  
  (1. University of Southern California, 2. University of Ottawa, 3. University of Rochester, 4. Air Force Research Laboratory, 5. Tel Aviv University)
### IEEE Photonics Conference 28 Sep - 01 Oct 2020

**Continued from Wednesday, 30 September**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:30pm</td>
<td><strong>WF4.6</strong> - Nonlinear Optical Responses of Plasmonic Meatsurface with Sub-nm Gaps Calculated by TDDFT with Jellium Model</td>
<td>Takashi Takeuchi (Japan), Kazuhiro Yabana (Japan) (1. University of Tsukuba)</td>
</tr>
<tr>
<td>4:45pm</td>
<td><strong>WF4.3</strong> - Fabrication of Two-Dimensional Microstructure to Achieve Topological Liquid Crystals Patterns.</td>
<td>Marouen Chemingui (China), Xiao Song (China), Xiaorong Li (China), Xinyuan Zhang (China), Qiang Wu (China), Xinzeng Zhang (China), Irena Drevensek-Olenik (Slovenia), Jingjun Xu (China) (1. The MOE Key Laboratory of Weak-Light Nonlinear Photonics and TEDA Institute of Applied Physics and School of Physics, Nankai University, Tianjin, China, 2. Faculty of Mathematics and Physics, University of Ljubljana and Department of Complex Matter, J. Stefan Institute, Ljubljana, Slovenia)</td>
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#### Thursday, 1 October

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30pm</td>
<td><strong>OCN 6</strong> - Data Center Infrastructure</td>
<td>Chaired by: Dora Van Veen (United States) and Fotini Karinou (United States)</td>
</tr>
<tr>
<td>3:30pm</td>
<td><strong>WG4.1 (Tutorial)</strong> - Data Center Optical Interconnects</td>
<td>Laurent Schares (United States) (1. IBM)</td>
</tr>
<tr>
<td>4:00pm</td>
<td><strong>WG4.2 (Invited)</strong> - Future Datacenter Infrastructure: Challenges and Opportunities</td>
<td>Brad Booth (United States) (1. Microsoft)</td>
</tr>
<tr>
<td>3:30pm</td>
<td><strong>OI 12</strong> - WH4 - OI Workshop: Optics and Networking for Artificial Intelligence and Machine Learning</td>
<td>Chaired by: Jock Bovingtong (United States)</td>
</tr>
<tr>
<td>3:30pm</td>
<td><strong>WH4.1 (WS)</strong> - Costa</td>
<td>Paolo Costa (United States) (1. Microsoft)</td>
</tr>
<tr>
<td>3:45pm</td>
<td><strong>WH4.2 (WS)</strong> - Ghobadi</td>
<td>Manya Ghobadi (United States) (1. Massachusetts Institute of Technology (MIT))</td>
</tr>
<tr>
<td>4pm</td>
<td><strong>WH4.3 (WS)</strong> - Dennison</td>
<td>Larry Dennison (United States) (1. NVIDIA)</td>
</tr>
<tr>
<td>4:15pm</td>
<td><strong>WH4.4 (WS)</strong> - Stojanovic</td>
<td>Vladimir Stojanovic (United States) (1. Ayar Labs, Inc)</td>
</tr>
<tr>
<td>5pm</td>
<td><strong>OFT Q&amp;A Zoom Panel I</strong></td>
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</tbody>
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**QPID 4 - ThA1 - Towards On-chip Quantum Information Processing**

Chaired by: Joseph Lukens (United States) and Michael Brodsky (United States)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30am</td>
<td><strong>ThA1.1 (Invited)</strong> - On-chip Photonic Devices for Quantum Information Processing</td>
<td>Nobuyuki Matsuda (Japan) (1. Department of Communications Engineering, Tohoku University)</td>
</tr>
<tr>
<td>9am</td>
<td><strong>ThA1.2 - Quantum Random Number Generation on Alibaba Cloud Servers</strong></td>
<td>Lilei Huang (China), Hongyi Zhou (Japan), Chongjin Xie (China) (1. Alibaba, 2. University of Tokyo, 3. Alibaba Cloud Intelligence Business Group)</td>
</tr>
</tbody>
</table>
9:15am  ThA1.3 - Microring resonator based single qubit unitary for photonic quantum information processing
  » Matteo Pennacchietti (Canada), Alexander N. Tait (United States), Bhavin J. Shastri (Canada) (1. Queen’s University, 2. Physical Measurement Laboratory, National Institute of Standards and Technology, 3. Department of Physics Engineering Physics & Astronomy, Queen’s University)

9:30am  ThA1.4 - Ytterbium implanted lithium niobate ring resonators on insulator: Fabrication and Characterization
  » Dongmin Pak (United States), Haechan An (United States), Xiaodong Jiang (United States), Arindam Nandi (United States), Yi Xuan (United States), Mahdi Hosseini (United States) (1. Purdue University - West Lafayette)

9:45am  ThA1.5 - Nanophotonic quantum network nodes based on epitaxial rare-earth on silicon heterostructures
  » Christina Wicker (United States), Yizhong Huang (United States), Hong Qiao (United States), Manish Singh (United States), Abhinav Prakash (United States), Alan Dibos (United States), Supratik Guha (United States) (1. University of Chicago, 2. Argonne National Laboratory, 3. University of Chicago)

8:30am  SL 7 - ThB1 - Integrated Lasers on Silicon
  Chaired by: Douglas Hall (United States)

8:30am  ThB1.1 (Invited) - Lasers Grown on Silicon by Heteroepitaxy
  » Jonathan Klamkin (United States) (1. University of California at Santa Barbara)

9am  ThB1.2 - 1.55 µm Quantum Dash CW Lasers on Planar (001) Si
  » Wei LUO (China), Ying XUE (Hong Kong), Jie Huang (China), Liying LIN (China), Bei Shi (China), Kei May Lau (Hong Kong) (1. Hong Kong University of Science and Technology)
### IEEE Photonics Conference 28 Sep - 01 Oct 2020

**Continued from Thursday, 1 October**

**9am**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ThC1.3 - Metamaterial Engineered C+L Band 90º Hybrid with 150 nm Feature Size</strong></td>
<td>Abdelfettah Hadji-EI Houati (Spain), Robert Halir (Spain), Alejandro Ortega-Moflux (Spain), Gonzalo Wanguemert-Pérez (Spain), Hugh Podmore (Canada), Jens H. Schmid (Canada), Pavel Cheben (Canada), Íñigo Molina-Fernández (Spain) (1. Universidad de Malaga, 2. Honeywell Aerospace, 3. National Research Council Canada)</td>
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**9:15am**

<table>
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</tr>
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<tbody>
<tr>
<td><strong>ThC1.5 - A wide aperture metasurface for the control of high order diffraction</strong></td>
<td>Md. Mamunur Rashid (Australia), Haroldo Hattori (Australia), David A. Powell (Australia) (1. University of New South Wales (UNSW))</td>
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<tr>
<td><strong>ThC1.6 - Reconfigurable Holograms Using VO2-Based Tunable Metasurface</strong></td>
<td>Tamar Perry (Israel), Jacob Scheuer (Israel) (1. Department of Physics and Astronomy, Tel-Aviv University, 2. School of EE, Tel Aviv-University)</td>
</tr>
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**9:45am**

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</tr>
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<tr>
<td><strong>ThC1.4 - Polarization Management Devices Based on Anisotropy Engineered Metamaterials</strong></td>
<td>Alaine Herrero (Spain), José Manuel Luque-González (Spain), Antonio Dias (Spain), Alejandro Ortega-Mořlux (Spain), Pavel Cheben (Canada), Íñigo Molina-Fernández (Spain), Ator Villafranca Velasco (Spain), Robert Halir (Spain) (1. Consejo Superior de Investigaciones Científicas (CSIC), 2. Universidad de Malaga, 3. Alycon Photonics S.L., 4. National Research Council Canada, 5. Consejo superior de investigaciones científicas)</td>
</tr>
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### 8:30am

**PIP 2 - ThD1 - PIP Tutorial & Silicon Photonics Integration**

Chaired by: Oussama Moutanabbir (Canada) and Di Liang (United States)

**8:30am**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td><strong>ThD1.1 (Tutorial) - Silicon-Photonic Optical Phased Array for Coherent Optical Beam Steering</strong></td>
<td>S. J. Ben Yoo (United States) (1. UC Davis)</td>
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**8:45am**

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<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td><strong>ThD1.2 - High Coupling Efficiency Vertical Hybrid Integration Device by Selectively Defining Underneath Si Waveguide</strong></td>
<td>Yi-jen Chiu (Taiwan), Yang-Jeng Chen (Taiwan), YI-HSIN FANG (Taiwan), Bo-Hong Chen (Taiwan), Cong-Long Chen (Taiwan) (1. Department of Photonics, National Sun Yat-Sen University)</td>
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**9:45am**

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<th>Title</th>
<th>Authors</th>
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<tr>
<td><strong>ThD1.3 - Polarization-Diversity Evanescent Coupler on Silicon with Integrated Polarization Splitter</strong></td>
<td>Jean-Etienne Tremblay (United States), Johannes Henriksson (United States), Ming Wu (United States) (1. University of California, Berkeley)</td>
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**8:30am**

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<th>Title</th>
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<tbody>
<tr>
<td><strong>ThE1.1 - Efficient Absorption Enhancement Approaches for AlInAsSb Avalanche Photodiodes for 2-µm Applications</strong></td>
<td>Dekang Chen (United States), Keye Sun (United States), Andrew Jones (United States), Joe Campbell (United States) (1. university of virginia)</td>
</tr>
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**8:45am**

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</thead>
<tbody>
<tr>
<td><strong>ThE1.2 - High-Speed Heterogeneous Quantum Dot Avalanche Photodiodes with Polarization Dependent Gain</strong></td>
<td>Bassem Tossoun (United States), SUDHARSANAN SRINIVASAN (United States), Antoine Descos (United States), Geza Kuruczveil (United States), Di Liang (United States), Raymond G. Beausoleil (United States) (1. Hewlett Packard Enterprise)</td>
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**9am**

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<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td><strong>ThE1.3 - Modeling of InGaAs/AlGaAsSb Avalanche Photodiodes with High Gain-bandwidth Product</strong></td>
<td>Yegao Xiao (Canada), Zhiqiang Li (Canada), Zhanming Li (Canada) (1. Crosslight Software Inc)</td>
</tr>
</tbody>
</table>
### ThF1.4 - Engineering DUV and NUV Response in 4H-SiC Avalanche Photodiodes

» Jonathan Schuster (United States), Anand Sampath (United States), Stephen Kelley (United States), Jeremy Smith (United States), Kimberley Olver (United States), Antonio Llopis-Jepsen (United States), Michael Wirback (United States), yang shen (United States), Quigui Zhou (United States), Joe Campbell (United States) (1. U.S. Army Research Laboratory, 2. U.S. Army Research Laboratory, 3. University of Virginia, 4. University of Virginia)

### ThF1.5 - Low Leakage Current Mesa-type Avalanche Photodiodes with Zn-diffused Sidewall

» Oliver Pitts (Canada), Alexandre Walker (Canada), Costel Flueraru (Canada), Craig Storey (Canada) (1. National Research Council Canada)

### ThF1.1 - Mode-Group Demultiplexers Using Thin-Film Filters

» Fatemeh Ghaedi Vanani (United States), Alireza Fardoost (United States), Guifang Li (United States) (1. CREOL, The College of Optics, University of Central Florida)

### ThF1.2 - Reconfigurable mode-selective frequency conversion in a three-mode fiber

» Afshin Shamshshoii (United States), Michael Vasilyev (United States), Francesca Parmigiani (United Kingdom), Xiaoying Li (China) (1. Dept. of Electrical Engineering, University of Texas at Arlington, 2. Microsoft Research Cambridge, 3. College of Precision Instruments and Opto-electronics Engineering, Key Laboratory of Opto-electronic Information Technical Science of Ministry of Education, Tianjin University)

### ThF1.3 - MD and MDL Characterization Using Direct-Detection Pulse Measurements

» Mahmoudezza Dadras Jedi Goldehi (United States), Ioannis Roudas (United States), Jaroslav Kwapisz (United States) (1. Montana State University-Bozeman)

### ThF1.4 - In-Fiber Mode Conversion from LP11 to LP21 Based on Grating-Assisted Phase Matching with Polarization Control

» Haiime Sakata (Japan), Wataru Onishi (Japan) (1. Shizuoka University)

### ThF1.5 - Relaxed Adiabatic Evolution of Fundamental HE11 Mode on Etched Optical Fiber Tapers

» Gyeongho Son (Korea, Republic of), Dae Seok Han (Korea, Republic of), Youngjae Jeong (Korea, Republic of), Kyounghik Yu (Korea, Republic of) (1. KAIST)

### ThF1.6 - Modeling of Laser Beam Shaping with a Single Abruptly Tapered Fiber

» Xiamin Leng (Canada), Scott Yam (Canada) (1. Queen’s University)

### ThH1.1 (Invited) - Silicon Photonic-based Transceivers and Subsystems for On-board and Inter-DC Interconnects

» Miltiadis Moralis-Pegios (Greece), Stelios Pitsis (Greece), Nikos Terzenidis (Greece), Theoni Alexoudi (Greece), Nikos Pleros (Greece) (1. Aristotle University)
9am ThH1.3 - Low Cost Six-Channel CWDM Transceiver Module for All Optical Interconnection
» Sung-Geun Kim (Korea, Republic of), Hee-Dae Kim (Korea, Republic of), Hyun-Kuk Shin (Korea, Republic of), Il Kim (Korea, Republic of), Sang-Wan Ryu (Korea, Republic of) (1. Chonnam National University, 2. Optics Inc., 3. Korea Photonics Technology Institute)

9:15am ThH1.4 - Burst-Mode Characteristics of Datacom Transceivers
» Jason Kelley (United States), Alex Forencich (United States), George Papen (United States) (1. University of California San Diego)

9:30am ThH1.5 - A novel optical receiver for PAM-4 transmission
» Shenghao Liu (United Kingdom), Ke Li (United Kingdom), Xiaoke Ruan (China), David Thomson (United Kingdom), Yang Hong (United Kingdom), Lei Zhang (China), Cosimo Lacava (United Kingdom), Fanfan Meng (United Kingdom), Weiwei Zhang (United Kingdom), Perikis Petropoulos (United Kingdom), Fan Zhang (China), Graham Reed (United Kingdom) (1. University of Southampton, 2. Peking University, 3. Peking)

8:30am OI 14 - ThI1 - Integrated Passives and Couplers
Chaired by: Abdul Yurt (Belgium)

8:30am ThI1.1 - Design of Compact Silicon Antennas Based on High Directionality Gratings
» Shahrzad Khajavi (Canada), Daniele Melati (Canada), Pavel Cheben (Canada), Jens H. Schmid (Canada), Dan-Xia Xu (Canada), Siegfried Janz (Canada), Winnie N. Ye (Canada) (1. Carleton University, 2. National Research Council Canada)

8:45am ThI1.2 - Dual-Band Polarization-Independent Subwavelength Grating Coupler for Wavelength Demultiplexing
» Tianyi Hao (Canada), Alejandro Sánchez-Postigo (Spain), Pavel Cheben (Canada), Winnie N. Ye (Canada) (1. Carleton University, 2. Universidad de Malaga, 3. National Research Council Canada)

9am ThI1.3 - Ultra-High-Efficiency Fiber-to-Chip Coupler Based on a Waveguide Array
» Matthew Puckett (United States), Neil Krueger (United States) (1. Honeywell)

9:15am ThI1.4 - Polarization-independent 1D grating coupler design on the hybrid Si-LNOI platform
» XINYU MA (United States), Chijie Zhuang (China), Rong Zeng (China), Weidong Zhou (United States) (1. Department of Electrical Engineering, University of Texas at Arlington; Tsinghua University, 2. Department of Electrical Engineering, Tsinghua University, 3. Department of Electrical Engineering, University of Texas at Arlington)

9:30am ThI1.5 - Low-loss, Low-crosstalk Silicon Nitride Array Waveguide Grating using Multimode Waveguide at 850nm
» Jaegyu Park (Korea, Republic of), Jiho Joo (Korea, Republic of), Gyungock Kim (Korea, Republic of) (1. Electronics and Telecommunications Research Institute (ETRI))

9:45am ThI1.6 - Toward Inverse-designed Optical Interconnect
» Kiyoul Yang (United States), Jinhie Skarda (United States), Geun Ho Ahn (United States), Melissa Guidry (United States), Jelena Vuckovic (United States) (1. Ginzton Laboratory Stanford)

10am ThI1.7 (Invited) - Re-designing the Cloud Beyond the End-of-Moore’s Law
» Fotini Karinou (United States) (1. Microsoft)

10:30am QPIT 5 - ThA2 - QKD
Chaired by: Daniel Jones (United States) and Michael Brodsky (United States)

10:30am ThA2.1 - Implementation of repeaterless quantum key distribution over 502 km fibers
» Pei Zeng (China), Hui Liu (China), Weijie Wu (China), Xiongmao Ma (China), Teng-Yun Chen (China) (1. Center for Quantum Information, Institute for Interdisciplinary Information Sciences, Tsinghua University, 2. Hefei National Laboratory for Physical Sciences at Microscale and Department of Modern Physics)
10:45am  **ThB2.2 - Destabilization of Quantum Cascade Lasers Using Tilted Optical Feedback**  
» Xing-Guang Wang (China), Bin-Bin Zhao (China), Yu Deng (China), Cheng Wang (China) (1. Shanghaitech University)

11am  **ThB2.3 - GeSn Heterostructures LEDs for Gas Detection**  
» Lara Casiez (France), Bertrand Mathieu (France), Jérémie Chrétien (France), Andrea Quintero (France), Quang Minh Thai (France), Marvin Frauenrath (France), Oliver Lartigue (France), Pierre Barraittaud (France), Nicolas Bernier (France), Philippe Rodriguez (France), Alexei Chelnokov (France), Jean-Michel Hartmann (France), Nicolas Pau (France), Vincent Calvo (France), Vincent Reoubd (France) (1. Univ. Grenoble Alpes, CEA, LETI, 2. Univ. Grenoble Alpes, CEA, IRIG-DePhy)

11:15am  **ThB2.4 - Optical Noise of Interband Cascade Lasers Subject to Optical Feedback**  
» Yu Deng (China), Zhuo-Fei Fan (China), Cheng Wang (China) (1. Shanghaitech University)

11:30am  **ThB2.5 - Overcoming Channel Loss Effects in Continuous-Variable Quantum Key Distribution**  
» Masoud Ghalaii (United Kingdom), Carlo Ottaviani (United Kingdom), Rupesh Kumar (United Kingdom), Sima Bahrami (United Kingdom), Stefano Pirandola (United Kingdom), Mohsen Razavi (United Kingdom) (1. University of York, 2. University of Edinburgh, 3. University of Leeds)

10:30am  **SL 8 - ThB2 - Mid Infrared and Resonator Laser Physics**  
Chaired by: Luke J. Mawst (United States) and Jerome Faist (Switzerland)

10:30am  **ThB2.1 - All-optical modulation at mid-infrared wavelength with QCLs**  
» Olivier Spitz (France), Andreas Herdt (Germany), Grégory Maisons (France), Mathieu Carras (France), Wolfgang Elsässer (Germany), Frédéric Grillot (France) (1. Télécom Paris, 2. Technische Universität Darmstadt, 3. mirSense)
10:30am PMM 5 - ThC2 - Photonic Materials
Chaired by: Elaheh Ahmadi (United States) and Paul Simmonds (United States)

10:30am ThC2.1 - Enhanced thermo-optic effect in PECVD deposited silicon-rich silicon nitride
» Hani Nejadriahi (United States), Alex Friedman (United States), Rajat Sharma (United States), Steve Pappert (United States), Yeshiahu Fainman (United States), Paul Yu (United States) (1. Department of Electrical and Computer Engineering, University of California, San Diego, 2. VEO)

10:45am ThC2.3 - Enhanced Pockels Effect in Strained Silicon by Means of a SiGe/Si/SiGe Slot Structure
» Irene Olivares (Spain), Pablo Sanchis (Spain) (1. Universitat Politècnica de València)

11am ThC2.4 - Structural and optical properties of thin film amorphous oxides for photonic structures
» CARMEN MENONI (United States), Aaron Davenport (United States), Le Yang (United States), Mariana Fazio (United States), Emmett Randel (United States), Kestutis Juskevicius (United States) (1. COLORADO STATE UNIVERSITY)

10:30am PSS 4 - ThE2 - Advances in IR Detectors
Chaired by: Sarath Gunapala (United States)

10:30am ThE2.1 (Invited) - High-Speed Photodetection for Control and Readout of Superconducting Quantum Systems
» Franklyn Quinlan (United States) (1. National Institute of Standards and Technology)

10:30am ThE2.2 - Programmable Silicon Photonic Integrated Circuits
» Wim Bogaerts (Belgium), Xiangfeng Chen (Belgium), Mi Wang (Belgium), Iman Zand (Belgium), Hong Deng (Belgium), Lukas Van Iseghem (Belgium), Antonio Ribeiro (Belgium), Alejandro Díaz Tormo (Belgium), Umar Khan (Belgium) (1. Ghent University - IMEC)

11am ThD2.2 - Transfer-print Integration of GaAs p-i-n Photodiodes onto Silicon Nitride Photonic Integrated Circuits
» Jeroen Goyvaerts (Belgium), Sulakshna Kumari (Belgium), Sarah Uvin (Belgium), Jing Zhang (Belgium), Roel Baets (Belgium), Agnieszka Gocalinska (Ireland), Emanuele Pelucchi (Ireland), Brian Corbett (Ireland), Gunther Roelkens (Belgium) (1. Ghent University - IMEC, 2. Tyndall National Institute, University College Cork)

11:15am ThD2.3 - Femtojoule Technology Roadmap for TeraMAC Neuromorphic Photonic Accelerators
» George Dabos (Greece), Angelina Totovic (Greece), Nikolaos Passalis (Greece), Anastasios Tefas (Greece), Nikos Pleros (Greece) (1. Aristotle University of Thessaloniki, Dept. of Informatics)

11:30am ThD2.4 (Invited) - Ultra-Large-Scale Optical MEMS Switch
» Ming Wu (United States) (1. University of California, Berkeley)

10:30am PIP 3 - ThD2 - Emerging PIC Technologies
Chaired by: Robert Halir (Spain) and Sarvagya Dwivedi (Belgium)

11am ThD2.2 - Transfer-print Integration of GaAs p-i-n Photodiodes onto Silicon Nitride Photonic Integrated Circuits
» Jeroen Goyvaerts (Belgium), Sulakshna Kumari (Belgium), Sarah Uvin (Belgium), Jing Zhang (Belgium), Roel Baets (Belgium), Agnieszka Gocalinska (Ireland), Emanuele Pelucchi (Ireland), Brian Corbett (Ireland), Gunther Roelkens (Belgium) (1. Ghent University - IMEC, 2. Tyndall National Institute, University College Cork)

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» Ming Wu (United States) (1. University of California, Berkeley)

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Chaired by: Robert Halir (Spain) and Sarvagya Dwivedi (Belgium)

11am ThE2.1 (Invited) - High-Speed Photodetection for Control and Readout of Superconducting Quantum Systems
» Franklyn Quinlan (United States) (1. National Institute of Standards and Technology)

11am ThE2.2 - A novel FDSOI transistor based uncooled microbolometer sensor for disruptive IRFPAs
» Antoine Albov (France), Jean-Jacques Yon (France), Patrick Leduc (France), Geoffroy Dumont (France), Abdelkader Allane (France), Francis Balestra (France) (1. Univ. Grenoble Alpes, CEA, LETI, F38000 Grenoble, France, 2. Univ. Grenoble Alpes, CNRS, Grenoble INP, IMEP-LAHC, F-38000 Grenoble, France)

11:15am ThE2.4 - GaSbBi metal-semiconductor-metal photodetectors for mid-infrared sensing
» Zhongming Cao (United Kingdom), Tim Veal (United Kingdom), Mark Ashwin (United Kingdom), Ian Sandall (United Kingdom) (1. University of Liverpool, 2. University of Warwick)
Continued from Thursday, 1 October

11:30am  ThE2.5 - Analysis of dark current in Ge-on-Si photodiodes at cryogenic temperatures
   » Andrea Pizzone (Belgium)
   Srinivasan Ashwyn Srinivasan (Belgium)
   Peter Verheyen (Belgium)
   Guy Lepage (Belgium)
   Sadhishkumar Balakrishnan (Belgium)
   Joris Van Campenhout (Belgium)
   1. Imec

11:45am  ThE2.3 - Resonant Cavity Enhanced Photodiodes for Spectroscopic Sensing in the eSWIR
   » Andrew Bainbridge (United Kingdom)
   Adam Craig (United Kingdom)
   Andrew Marshall (United Kingdom)
   1. Lancaster University

10:30am  OFT 4 - ThF2 - Optical Fiber Sensors I: Novel Methods
   Chaired by: Giovanni Milione (United States) and Nicholas Fontaine (United States)

10:30am  ThF2.1 (Invited) - Non-uniform multiple core-offset fibers for sensing and laser feedback
   » Xiaoyi Bao (Canada)
   Huibo Fan (Canada)
   Liang Chen (Canada)
   1. University of Ottawa

11am    ThF2.2 - Experimental Investigation of Bending Sensor Based on Helical Structure in Hollow Core Fiber
   » Yu Zheng (Singapore)
   Ping Shum (Singapore)
   Baoceng Li (Singapore)
   Hailing Zhang (Singapore)
   Jean-Louis Auguste (France)
   Georges Humbert (France)
   1. School of EEE, Nanyang Technological University, 2. Institute of Infocomm Research, A*STAR, 3. XLIM Research Institute

11:15am  ThF2.3 - Fiber interferometry with low temperature sensitivity
   » Zitong Feng (United Kingdom)
   Vincent Michaud-Belleau (Canada)
   Jayanta K. Sahu (United Kingdom)
   Johan Nilsson (United Kingdom)
   Christophe A. Codemard (United Kingdom)
   Xi Zhang (United Kingdom)
   Jérôme Genest (Canada)
   David J. Richardson (United Kingdom)
   Radan Slavík (United Kingdom)
   1. Optoelectronics Research Centre, University of Southampton, 2. Centre d'optique, photonique et laser, Université Laval, 3. SPI Lasers

11:30am  ThF2.4 - Sub-mm Gap Sensor Using Fibre Optic Fabry-Perot Interferometry for Long-Term Structural Health Monitoring
   » Tamer Y. Cosgun (United Kingdom)
   Adrian Dzipalski (United Kingdom)
   Calum A. Ross (United Kingdom)
   Robert R. Thomson (United Kingdom)
   Matthew Kingston (United Kingdom)
   Simon Brooks (United Kingdom)
   William N. MacPherson (United Kingdom)
   1. Heriot-Watt University, 2. AWE

11:45am  ThF2.5 - Characterization and equalization of intensity-modulated voltage sensors
   » Joseph Lukens (United States)
   Nicholas Lagakos (United States)
   Victor Kaybulkin (United States)
   Christopher Vizas (United States)
   Daniel King (United States)
   1. Oak Ridge National Laboratory, 2. SmartSenseCom
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15am</td>
<td>ThG2.4</td>
<td>Optical OFDM Modulation in Multi-hop VLC for Long Distance Data Transmission Over 30 meters</td>
<td>Mohammad Abrar Shakil Sejan (Korea, Republic of), Md Habibur Rahman (Korea, Republic of), Wan-Young Chung (Korea, Republic of) (1. Pukyong National University, 2. Pukyong National University, Korea)</td>
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<tr>
<td>11:30am</td>
<td>ThG2.5</td>
<td>Optical Two-Way Time-Frequency Transfer across a Three-Node Free-Space Network</td>
<td>Martha Bodine (United States), Jennifer Ellis (United States), William Swann (United States), Sarah Stevenson (United States), Jean-Daniel Deschénes (Canada), Emily Hannah (United States), Paritosh Manurkar (United States), Nathan Newbury (United States), Laura Sinclair (United States) (1. National Institute of Standards and Technology, 2. National Institute of Standard and Technology, 3. University of Colorado Boulder, 4. Octosig Consulting)</td>
</tr>
<tr>
<td>11:45am</td>
<td>ThG2.6</td>
<td>Channel Measurements and Ray Tracing Simulations for MIMO Light Communication at 200 MHz</td>
<td>Hossien Eldeeb (Turkey), Murat Uysal (Turkey), Sreelal Mana (Germany), Peter Hellwig (Germany), Jonas Hilt (Germany), Volker Jungnickel (Germany) (1. Ozyegin University, 2. Photonic Networks and Systems, Fraunhofer Heinrich Hertz Institute)</td>
</tr>
<tr>
<td>10:30am</td>
<td>OI 15 -</td>
<td>OI Keynote &amp; Coherent in the Data Center</td>
<td>James Stewart (United States)</td>
</tr>
<tr>
<td>10:30am</td>
<td>ThH2.1 (Keynote)</td>
<td>Drivers and Design Options for Coherent Links in Data Centers</td>
<td>Joseph M. Kahn (United States) (1. Stanford University)</td>
</tr>
<tr>
<td>11:15am</td>
<td>ThH2.2 (Invited)</td>
<td>Low-Power Coherent Optics for Next-Generation Datacenters</td>
<td>Clint Schow (United States) (1. University of California Santa Barbara)</td>
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<tr>
<td>11:45am</td>
<td>ThH2.3</td>
<td>Endless Optical Phase Delay Based Phase Synchronization in Low-power Coherent DCIs</td>
<td>Rakesh Ashok (India), Sana Naaz (India), Rashmi Kamran (India), Aboobackar Sidhique (India), Shalabkh Gupta (India) (1. IIT Bombay)</td>
</tr>
<tr>
<td>1:30pm</td>
<td>QPIT 6 -</td>
<td>Quantum Communications and Networking</td>
<td>Boulat Bash (United States) and Michael Brodsky (United States)</td>
</tr>
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<td>1:30pm</td>
<td>ThA3.1</td>
<td>Cluster States-based Quantum Networks</td>
<td>Ivan B Djordjevic (United States) (1. University of Arizona, ECE Dept.)</td>
</tr>
<tr>
<td>1:45pm</td>
<td>ThA3.2</td>
<td>Upper bound on mutual quantum information between two partially mixed qubits</td>
<td>Daniel Jones (United States), Gabriele Riccardi (Italy), Brian Kirby (United States), Cristian Antonelli (Italy), Michael Brodsky (United States) (1. U.S. Army Research Laboratory, 2. University of L'Aquila)</td>
</tr>
<tr>
<td>2pm</td>
<td>ThA3.3 (Invited)</td>
<td>Ask not what your SPAD can do for you, ask what you can do for your SPAD</td>
<td>Josh Bienfang (United States), Alessandro Restelli (United States), Michael Wayne (United States) (1. National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, Maryland 20899, USA, 2. National Institute of Standards and Technology and University of Maryland, 100 Bureau Drive, Gaithersburg, Maryland 20899, USA)</td>
</tr>
<tr>
<td>2:30pm</td>
<td>ThA3.4 (Invited)</td>
<td>Computationally efficient Bayesian quantum state tomography</td>
<td>Joseph Lukens (United States), Kody Law (United Kingdom), Ajay Jasra (Saudi Arabia), Pavel Lougovski (United States) (1. Oak Ridge National Laboratory, 2. University of Manchester, 3. KAUST)</td>
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<tr>
<td>1:30pm</td>
<td>PIP 4 -</td>
<td>Phosphide and Silicon Photonic Platforms</td>
<td>Shamsul Arafin (United States) and Tatsuro Hiraki (Japan)</td>
</tr>
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</table>
Continued from **Thursday, 1 October**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Chairer 1</th>
<th>Chairer 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30pm</td>
<td><strong>ThD3.1 (Invited) - A strong Pockels effect embedded in silicon photonic circuits</strong></td>
<td>» Felix Eltes (Switzerland), Jean Fompeyrine (Switzerland), Stefan Abel (Switzerland) (1. IBM Research - Zurich, now: Lumiphase AG)</td>
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<tr>
<td>2pm</td>
<td><strong>ThD3.2 - Design of 100 GHz-class Mach-Zehnder modulators in a generic indium phosphide platform</strong></td>
<td>» Arezou Meighan (Netherlands), Weiming Yao (Netherlands), Mike Wale (Netherlands), Kevin Williams (Netherlands) (1. Eindhoven university of technology)</td>
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<tr>
<td>2:15pm</td>
<td><strong>ThD3.3 (Invited) - III-V membrane devices on Si photonics platform</strong></td>
<td>» Shinji Matsuo (Japan) (1. NTT Device Technology Laboratories, NTT Corporation)</td>
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<tr>
<td>1:30pm</td>
<td><strong>PSS 5 - ThE3 - High Power Detectors for Microwave Applications</strong></td>
<td>Chaired by: Sadhvikas Addamane (United States)</td>
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<td>1:30pm</td>
<td><strong>ThE3.1 (Invited) - Packaging High-Power Photodiodes for Microwave Photonic Applications</strong></td>
<td>» Peng Yao (United States), Matthew Konkol (United States), Zhanyu Yang (United States), Andrew Mercante (United States), Victoria Carey (United States), Jesse Buchan (United States), Jeffrey Whitson (United States), Dennis Prather (United States) (1. Phase Sensitive Innovations)</td>
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<td>2pm</td>
<td><strong>ThE3.2 - Optical Generation of Pulsed Microwave Signals with High-Power Photodiodes</strong></td>
<td>» Yiwei Peng (United States), Keye Sun (United States), yuan yuan (United States), yang shen (United States), Andreas Beling (United States), Joe Campbell (United States) (1. university of virginia)</td>
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<tr>
<td>1:30pm</td>
<td><strong>OFT 5 - ThF3 - Optical Fiber Sensors II: Fiber Bragg Gratings</strong></td>
<td>Chaired by: Rodrigo Amezca Correa (United States) and Giovanni Milione (United States)</td>
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<td>1:30pm</td>
<td><strong>ThF3.1 (Invited) - Fiber Bragg gratings in 2020: Nano-plasmonic amplification, photo-thermal dynamics, and ‘Big data’ for improved limits of detection</strong></td>
<td>» Jacques Albert (Canada) (1. Carleton University)</td>
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<td>2pm</td>
<td><strong>ThF3.2 - Discrimination of Strain and Temperature effects on FBG-based Sensor using Machine Learning</strong></td>
<td>» Sanjib Sarkar (United States), Devasena Inupakutika (United States), Mandrita Banerjee (United States), Mehdi Tarhani (United States), Morad Khosravi Eghbal (United States), Mehdi Shadaram (United States) (1. University of Texas at San Antonio)</td>
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<td>2:15pm</td>
<td><strong>ThF3.3 - Helical long-period grating on multicore fiber for refractive index sensing</strong></td>
<td>» Baocheng Li (Singapore), Liang Jie Wong (Singapore), Perry Ping Shum (Singapore), Yu Zheng (Singapore), Hailiang Zhang (Singapore), Zhihang Wu (China) (1. School of EEE, Nanyang Technological University, 2. Institute of Infocomm Research, A*STAR, 3. Fujian Key Laboratory of Light Propagation and Transformation, CISE, Huqiao University)</td>
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<td>2:30pm</td>
<td><strong>ThF3.4 - Fabrication of more than 40 Superimposed and Superstructured Fiber Bragg Gratings</strong></td>
<td>» Senta Jantzen (United Kingdom), Devin H. Smith (United Kingdom), Rex H. S. Bannerman (United Kingdom), Paolo L. Mennea (United Kingdom), Lewis J. Boyd (United Kingdom), James C. Gates (United Kingdom), Peter G. R. Smith (United Kingdom), Christopher Holmes (United Kingdom) (1. Optoelectronics Research Centre, University of Southampton, 2. Parker Aerospace, Parker Hannifin Corporation)</td>
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<td>1:30pm</td>
<td><strong>OCN 9 - ThG3 - Optical Wireless Communications II</strong></td>
<td>Chaired by: Volker Jungnickel (Germany) and Gabriella Bosco (Italy)</td>
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<td>1:30pm</td>
<td><strong>ThG3.1 - Vehicular Visible Light Communications: The Impact of Taillight Radiation Pattern</strong></td>
<td>» Hossien Eldeeb (Turkey), Elizabeth Eso (United Kingdom), Murat Uysal (Turkey), Zabih Ghassemlooy (United Kingdom), Stanislav Zváňovec (Czech Republic), Juna Sathian (United Kingdom) (1. Ozyegin University, 2. Optical Communication Research Group, Northumbria University, 3. Czech Technical University)</td>
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### ThG3.2 - Multi-colour beamsteering for optical wireless communications using spatial light modulators

» Paramin Sangwongngam (United Kingdom), Ariel Gómez (United Kingdom), Crisanto Quintana (United Kingdom), Hyunchae Chun (Korea, Republic of), Graeme Faulkner (United Kingdom), Dominic O'Brien (United Kingdom) (1. Department of Engineering Science, University of Oxford, 2. Microsoft Research Cambridge, 3. Airbus UK, 4. Department of Information and Telecommunication Engineering, Incheon National University, 5. University of Oxford)

### ThG3.3 - A SiPM-based VLC Receiver for 3.45 Gigabits/s Communication Using OOK Modulation

» William Matthews (United Kingdom), Zubair Ahmed (United Kingdom), Wajahat Ali (United Kingdom), Steve Collins (United Kingdom) (1. University of Oxford, 2. University of Oxford)

### ThG3.4 - Discrete Power-Stepping Pulse Amplitude Modulation for Optical Camera Communications Employing a CMOS-Integrated GaN µLED Array

» Navid Bani Hassan (United Kingdom), Michael J. Strain (United Kingdom), Martin D. Dawson (United Kingdom), Johannes Herrnsdorf (United Kingdom) (1. University of Strathclyde - Institute of Photonics, 2. University of Strathclyde)

### ThG3.5 - Integration of an LED/SPAD Optical Wireless Transceiver with CubeSat On-board Systems

» Navid Bani Hassan (United Kingdom), Mumtaz Ali (United Kingdom), Alexander D. Griffiths (United Kingdom), Christopher Lowe (United Kingdom), Malcolm Macdonald (United Kingdom), Martin D. Dawson (United Kingdom), Johannes Herrnsdorf (United Kingdom), Michael J. Strain (United Kingdom) (1. University of Strathclyde, 2. University of Strathclyde)

### ThG3.6 - A Relay-Assisted Vehicular Visible Light Communications Network

» Elizabeth Eso (United Kingdom), Petr Pesek (Czech Republic), Petr Chvojka (Czech Republic), Zabih Ghassemlooy (United Kingdom), Stanislav Zváňovec (Czech Republic), Juna Sathian (United Kingdom) (1. Optical Communication Research Group, Northumbria University, 2. Czech Technical University in Prague, Faculty of Electrical Engineering, 3. Czech Technical University)
Continued from Thursday, 1 October

2pm  
ThI3.2 - A Broadband Polarization Splitter Directional Coupler Based on Tilted Subwavelength Grating Metamaterials  
» José Manuel Luque-González (Spain), Alaine Herrero (Spain), Alejandro Ortega-Moñux (Spain), Marina Sánchez-Rodríguez (Spain), Aitor Villafranca Velasco (Spain)², Jens H. Schmid (Canada), Pavlo Cheben (Canada)², Íñigo Molina-Fernández (Spain), Robert Halir (Spain)² (1. Universidad de Malaga, 2. Consejo Superior de Investigaciones Científicas (CSIC), 3. Consejo superior de investigaciones científicas, 4. National Research Council Canada)

2:15pm
ThI3.3 - Silicon Waveguide Contradirectional Coupler Polarization Rotation Bragg Grating  
» Hideaki Okayama (Japan)¹, Yosuke Onawa (Japan)¹, Hiroyuki Takahashi (Japan)¹, Daisuke Shimura (Japan)¹, Hiroki Yaegashi (Japan)¹, Hironori Saeki (Japan)¹ (1. PETRA)

2:30pm
ThI3.4 - Broadband 2×2 Adiabatic 3-dB Coupler with Inversely-Tapered Mode-Evolution Region for the Silicon-on-Insulator Platform  
» Luhua Xu (Canada)¹, Yun Wang (Canada)¹, Deng Mao (Canada)¹, Jinsong Zhang (Canada)¹, Md Samiul Alam (Canada)¹, Zhenping Xing (Canada)¹, Maxime Jacques (Canada)¹, Yannick D’Mello (Canada)¹, Santiago Bernal (Canada)², Stephane Lessard (Canada)², David Plant (Canada)² (1. Department of Electrical and Computer Engineering, McGill University, 2. Ericsson)

2:45pm
ThI3.5 - Nonlinearly Tapered 3-dB Adiabatic Coupler  
» Deng Mao (Canada)¹, Yun Wang (Canada)¹, Luhua Xu (Canada)¹, Eslam Effiky (Canada)¹, Maxime Jacques (Canada)¹, Jinsong Zhang (Canada)¹, Yannick D’Mello (Canada)¹, Stephane Lessard (Canada)², David Plant (Canada)² (1. Department of Electrical and Computer Engineering, McGill University, 2. Ericsson)

3:30pm  
PD/Closing -  
ThA4 - Post-Deadline Session & Closing Ceremony  
Chaired by: Christina Lim (Australia) and Weidong Zhou (United States)
### IEEE Photonics Conference 28 Sep - 01 Oct 2020

**Continued from Thursday, 1 October**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>4:30pm</td>
<td><strong>PD5 - A Bell-state analyzer for photonic frequency</strong></td>
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<td></td>
<td>» Navin Lingaraju (United States), Hsuan-Hao Lu (United States),</td>
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<td>Daniel Leaird (United States), Steven Estrella (United States),</td>
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<td>Joseph Lukens (United States), Andrew Weiner (United States)¹ (1. Purdue</td>
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<td>University, 2. Freedom Photonics, LLC, 3. Oak Ridge National</td>
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<td>Laboratory)</td>
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<td>4:45pm</td>
<td><strong>PD6 - Monolithic Plasmonic Transceiver Architecture</strong></td>
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<td></td>
<td>» Charles Lin (Canada), Pohan Chang (Canada), Yiwen Su (Canada),</td>
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<td>Amr Helmy (Canada) (1. University Of Toronto)</td>
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<td>5pm</td>
<td><strong>OFT Q&amp;A Zoom Panel II</strong></td>
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