

The Annual Conference of the
IEEE Photonics Society

IPC

18-21 October 2021 • Virtual Conference
www.ieee-ipc.org



General Chair:

Christina Lim
The University of Melbourne

Program Chair:

Weidong Zhou
University of Texas at Arlington

Program Vice-Chair:

Dominique Dagenais
National Science Foundation

Member-at-Large:

Di Liang
Hewlett Packard Labs



IPC 2021 Welcome Message

On behalf of the 2021 IEEE Photonics Conference (IPC) organizing committee, it is my pleasure to welcome you to the IEEE Photonics Society flagship conference taking place 18-21 October 2021. This year marks the 2nd year we are conducting the conference in an all-virtual format. This year's program brings together the most recent advances in the areas of photonics technologies and applications including optical sources, receivers, optoelectronic devices, optical fiber, interconnects, hybrid systems and lightwave systems in applications governing communications, biomedical, avionics and vehicular sensing/communications. In addition, we have numerous workshops, events, and forums to offer. We hope that you will be inspired and find this year's IPC a rewarding one.

It is our honor to have 4 distinguished speakers for our Plenary sessions that will take place on Tuesday and Wednesday. The first Plenary session will start with Professor Paul Prucnal from Princeton University with a presentation on "Photonics for Neuromorphic Computing" and Dr. Hong Hou from Intel Corporation will present on "Overview of Silicon Photonics Design, Process and Applications". In the second Plenary session we have Professor John Pendry from Imperial College London with a presentation on "Photon Localization and Bloch Symmetry Breaking in Luminal Gratings" and Professor Hui Cao from Yale University will present on the topic of "Multimode Fiber Optics and Applications".

This year's IPC 2021 technical program offers over 330 presentations of which over 90 are Invited talks and 7 are Tutorial presentations by some of the most respected researchers in our community. We include three Special Symposia to complement the regular technical sessions targeting special topics on 'Machine Learning and Photonics', 'Deep Tissue Imaging and Quantum Sensing' and 'Ultrafast Mid-infrared Laser Sources and Applications'. As part of the technical program, there will be two special sessions on Photonics Awards dedicated to highlight the contributions of this year's IEEE Photonics Society Awards recipients.

We continue to offer our popular Industry Day with invited presentations by outstanding speakers, panel, and roundtable discussions on various topics. This forum strives to increase engagement between industry and the photonics community, provides opportunity for future collaborations and showcases the photonic technologies transfer to the market. This year we are excited to offer a hands-on workshop on photonic inverse design in collaboration with Lumerical/Ansys. This workshop will be offered twice during the conference to accommodate attendees in different time zones. Students and professionals of all levels are welcome to participate in this workshop.

We believe we have an exciting program line-up for IPC 2021! This comprehensive program is a result of teamwork of many dedicated volunteers constituting the conference's organizing, technical and industry committees, and the amazing IEEE Photonics Society staff. I extend my most sincere thanks to all.

On behalf of the entire team, I appreciate your participation and sincerely hope you have a rewarding conference experience.

Christina Lim
General Chair, 2021 IEEE Photonics Conference
University of Melbourne, Australia

10:00 am-11:30 am (EDT)							Industry Day	
MA1: Quantitative Imaging and Simulation Session Chairs: P. Munro & J. Guggenheim	MB1: Microwave Photonic Systems and Applications Session Chairs: E. Ackerman & R. DeSalvo	MC1: Excitonics and 2D Semiconductors Session Chairs: P. Deotare & J. Choy	10:00 am-11:15 am MD1: Parametric Light Generation in Optical Media Session Chairs: H. Fattahi	ME1: Quantum Communications Session Chairs: M. Brodsky	MF1: Optical Fiber Devices Session Chairs: O. Sinkin	MG1: Silicon Photonics Integration and Packaging Session Chair: S. Dwivedi		8:00 am-9:00 am MH1: Panel on Entrepreneurship in Photonics
11:30 am – 12:00 pm (EDT): BREAK								9:10 am-10:10 am MH2: Photonic Technologies and a Pandemic
12:00 pm-1:30 pm (EDT)								10:30 am-11:45 am MH3: Roundtable on Photonic Foundries
MA2: Optical Coherence Tomography Technologies Session Chairs: M. Villiger & B. Applegate	MB2: High Power and Mid-Infrared Lasers Session Chairs: T. Earles	MC2: Integrated Nanophotonics I Session Chairs: L. Yang & N. Giebink	MD2: Novel Devices and Applications Session Chairs: A. Hurtado & W. Loh	12:00 pm-1:00 pm ME2: Further Capacity Enhancements Session Chairs: D. Venkitesh & F. Karinou	MF2: Novel Optical Fiber Designs Session Chairs: R. Correa	MG2: Material and Device Design Session Chairs: S. Hu & M. Stephen		12:00 pm-1:00 pm MH4: Hot Topics in Industry
1:30 pm – 6:00 pm (EDT): BREAK								1:30 pm-2:30 pm MH5: Panel on The Photonics Labor Market and Career Development
6:00 pm-7:30 pm (EDT)							3:00 pm-5:00 pm MH6: The Canadian Photonics Industry Landscape	
MA3: Machine Learning and Optical Communication and Sensing Session Chairs: G. Milione & R. Menon	MB3: Semiconductor Lasers on Silicon Session Chairs: L. Mawst	MC3: Electromagnetic Emission Session Chairs: P. Barclay & P. Iyer	MD3: Nonlinear Conversion in Photonic Waveguides Session Chairs: A. Marandi & D. Jones	ME3: State of the Quantum Science Session Chair: M. Brodsky	6:00 pm-8:30 pm MF3: Ansys Photonic Inverse Design Workshop Session Chairs: J. Niegemann & T. Robertson	MG3: Silicon Photonics Beyond 100 Gb/s Session Chairs: T. Gu		
7:30 pm – 8:00 pm (EDT): BREAK								
8:00 pm-9:30 pm (EDT)								
MA4: Machine Learning, Imaging, and Information Processing Session Chairs: F. Yaman & G. Milione	MB4: QD and Nanostructures Lasers Session Chairs: Q. Gu	MC4: Integrated Nanophotonics II Session Chairs: J. Rho & M. Povinelli		8:00 pm-9:00 pm ME4: Advanced Fabrication Techniques for Detectors Session Chair: S. Addamane		MG4: OI Workshop: The Future of Optical Switches Session Chair: S. Shekhar		

TuA1: Plenary Session I: 10:00 am–11:35 am (EDT)

Welcome Remarks | IPC 2021 General Chair, Christina Lim, *The University of Melbourne, Australia*
Welcome Remarks | President, IEEE Photonics Society, Carmen Menoni, *Colorado State University, USA*

Session Chairs: Christina Lim, *The University of Melbourne, Australia* & Weidong Zhou, *University of Texas at Arlington, USA*

Plenary Speakers

Professor Paul Prucnal, *Princeton University, USA* (10:05 am-10:50 am EDT)

Dr. Hong Hou, *Intel Corporation, USA* (10:50 am-11:35 am EDT)

11:35 am – 12:00 pm (EDT): BREAK

12:00 pm–1:30 pm (EDT)

<p>TuA2: Nonlinear Effects and Quantum New Devices Session Chairs: D. Jones & M. Brodsky</p>	<p>12:00 pm-1:15 pm TuB2: QD and Novel Cavity Lasers Session Chairs: P. Smowton</p>	<p>TuC2: OI Workshop: Feeding the Beast: The Constant Need for Higher Bandwidth Optical Interconnects Session Chair: L. Gantz</p>	<p>TuD2: Integration for Silicon Photonics Session Chair: S. Dwivedi</p>	<p>12:00 pm-12:45 pm TuE2: Wireless Optical Communications Session Chairs: D. O'Brien & F. Gunning</p>	<p>TuF2: Optical Fiber Sensing Session Chairs: G. Milione & K. Chen</p>	<p>TuG2: Microcavity Devices and Physics Session Chairs: K. Yang & W. Loh</p>	<p>12:00 pm-12:45 pm TuH2: Detectors Based on Novel Materials Session Chairs: G. Wicks & P. Simmonds</p>
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1:30 pm – 6:00 pm (EDT): BREAK

6:00 pm–7:30 pm (EDT)

<p>6:00 pm-7:00 pm TuA3: Novel Sensing Techniques Session Chairs: J. Li & J. Park</p>	<p>TuB3: VCSELs and Single Frequency Lasers Session Chair: K. Choquette</p>	<p>6:00 pm-8:00 pm TuC3: Periodic Structures/Light Matter Interactions Session Chairs: M. Povinelli</p>	<p>TuD3: Preparation and Manipulation of Quantum States Session Chairs: B. Bash & M. Brodsky</p>	<p>TuE3: High Capacity Enablers Session Chairs: X. Jiang & Y. Akasaka</p>	<p>TuF3: Photonics Awards I Session Chairs: W. Zhou & D. Dagenais</p>	<p>6:00 pm-6:30 pm TuG3: Microresonator Frequency Combs Session Chairs: A. Matsko & W. Loh</p>	<p>TuH3: Co-packaging for Data Center Interconnects Session Chairs: J. Cardenas & J. Bovington</p>
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7:30 pm – 8:00 pm (EDT): BREAK

8:00 pm–9:30 pm (EDT)

	<p>TuB4: III-Nitride Lasers – I Session Chairs: N. Tansu & H. Zhao</p>	<p>TuC4: Plasmonics Session Chairs: R. Menon & J. Rho</p>			<p>TuF4: Space Division Multimode Optical Fibers Session Chairs: N. Fontaine & R. Correa</p>	<p>TuG4: Microcombs and Applications Session Chairs: S. Huang & X. Yi</p>	<p>TuH4: Advances in IR Detectors Session Chair: G. Balakrishnan</p>
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WA1: Plenary Session II: 10:00 am–11:30 am (EDT)

Session Chairs: Christina Lim, *The University of Melbourne, Australia* & Weidong Zhou, *University of Texas at Arlington, USA*

Plenary Speakers

Sir John Pendry, *Imperial College London, United Kingdom* (10:00 am-10:45 am EDT)

Professor Hui Cao, *Yale University, USA* (10:45 am-11:30 am EDT)

11:30 am – 12:00 pm (EDT): BREAK

12:00 pm–1:30 pm (EDT)

<p>WA2: Novel Microscopy Techniques Session Chairs: M. Sarunic & L. Gao</p>	<p>WB2: Integrated Photonics Session Chairs: J. Bowers & H. Zimer</p>	<p>WC2: Microwave Photonic Signal Processing Session Chairs: D. Moilanen & C. Middleton</p>	<p>WD2: Emerging Material Platforms Session Chair: R. Halir</p>	<p>WE2: Neural Networks and Digital Signal Processing Session Chairs: D. Van Veen & F. Gunning</p>	<p>WF2: Deep Tissue Imaging and Quantum Sensing I Session Chairs: P. Munro & Z. Zalevsky</p>	<p>12:00 pm-1:00 pm WG2: Modulators, Switches and Transmitters Session Chairs: A. Melikyan</p>	<p>WH2: Novel mid-IR Ultrafast Laser Sources and Applications I Session Chairs: F. Légaré & M. Bernier</p>
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1:30 pm – 6:00 pm (EDT): BREAK

6:00 pm–7:30 pm (EDT)

<p>WA3: Applications of Optical Wavefront Shaping Session Chairs: S. Mallidi & L. Gao</p>	<p>6:00 pm-7:15 pm WB3: High-Speed and Gain Switching Lasers Session Chair: P. Westbergh</p>	<p>WC3: Metamaterials and MetaOptics Session Chairs: J. Choy & P. Iyer</p>	<p>6:00 pm-6:45 pm WD3: Optomechanics and Acousto-optics Session Chairs: W. Loh</p>	<p>WE3: Integrated Photodetection Systems Session Chair: S. Gunapala</p>	<p>WF3: Deep Tissue Imaging and Quantum Sensing II Session Chair: N. Ozana</p>	<p>WG3: OI Workshop: Co-Packaged Optics, Near-Packaged Optics, or Neither? Session Chair: J. Bovington</p>	<p>WH3: Novel Mid-IR Ultrafast Laser Sources and Applications Session Chairs: M. Bernier & F. Légaré</p>
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7:30 pm – 8:00 pm (EDT): BREAK

8:00 pm–9:30 pm (EDT)

	<p>8:00 pm-9:45 pm WB4: III-Nitride Lasers – II Session Chairs: C. Tan & J. Zhang</p>	<p>8:00 pm-9:15 pm WC4: Frequency Combs and Nonlinear Propagation Session Chairs: J. Itatani & M. Bernier</p>	<p>8:00 pm-9:15 pm WD4: Emerging Silicon PIC Technologies Session Chair: S. Arafin</p>	<p>8:00 pm-9:15 pm WE4: Short-reach & Visible Light Communications Session Chairs: H. Lu & X. Jiang</p>		<p>WG4: Next Generation Optical Interconnects Session Chairs: T. Gu & H. Tsang</p>	
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10:00 am-11:30 am (EDT)							
ThA1: Components, Subsystems and Integration Technologies Session Chair: M. Piels	10:00 am-11:15 am ThB1: Free Space Optics and Millimeter Wave Photonics Session Chairs: A. Kanno & J. Mazurowski	10:00 am-11:15 am ThC1: Light Conversion and Management Session Chairs: N. Giebink & L. Yang	ThD1: Spatiotemporal Effects in Fibers Session Chairs: C. Blaga	ThE1: Coherent Communications Session Chairs: F. Karinou & D. Venkitesh	ThF1: Avalanche Photodetectors I Session Chairs: A. Beling	10:00 am-11:15 am ThG1: Next Generation Silicon Photonics Session Chairs: C. Xiong & W. Zhou	ThH1: Photonics Awards II Session Chairs: W. Zhou & D. Dagenais
11:30 am – 12:00 pm (EDT): BREAK							
12:00 pm-1:30 pm (EDT)							
ThA2: Machine Learning and Optical Design Session Chairs: R. Menon & A. Ozcan	12:00 pm-2:00 pm ThB2: Ansys Photonic Inverse Design Workshop Session Chairs: J. Niegemann & T. Robertson	12:00 pm-1:15 pm ThC2: Metamaterials Session Chairs: P. Barclay	12:00 pm-1:00 pm ThD2: Dissipative Waves in Fiber Lasers Session Chairs: H. Fattahi	ThE2: Optical Processing Functions Session Chairs: Y. Akasaka & D. Van Veen	ThF2: Avalanche Photodetectors II Session Chair: N. D'Ascenzo	ThG2: Hollow Core Optical Fibers Session Chairs: G. Milione & O. Sinkin	12:00 pm-1:45 pm ThH2: Nonlinear Devices and Novel Phenomena Session Chairs: F. Dell'Olio & W. Loh
1:30 pm-2:00 pm (EDT): BREAK							
2:00 pm-3:30 pm (EDT)							
ThA3: Post-Deadline Session and Closing Ceremony							
Session Chairs: Christina Lim, <i>The University of Melbourne, Australia</i> & Weidong Zhou, <i>University of Texas at Arlington, USA</i>							



Monday, 18 October

- 8am **MH1: Panel on Entrepreneurship in Photonics**
Chaired by: Jose Pozo (Netherlands)
- 9:30am **MH2: Photonic Technologies and a Pandemic**
Chaired by: Xi Vivian Chen (United States)
- 9:30am **MH2.1 - Silicon-Nitride Photonic ICs in Pandemic Times**
» [Douwe Geuzebroek](#) (Netherlands)¹ (1. LioniX International)
- 9:50am **MH2.2 - Lighting – At a crossroads beyond the flip of a switch**
» [Erik Swenson](#) (United States)¹ (1. Nichia)
- 10am **MA1: Quantitative Imaging and Simulation**
Chaired by: Peter Munro (United Kingdom) and James Guggenheim (United Kingdom)
- 10am **MA1.1 - Quantitative phase imaging and refractive index tomography of opaque samples in epi-mode (Invited)**
» [Francisco Robles](#) (United States)¹ (1. Georgia Institute of Technology)
- 10:30am **MA1.2 - Simulation of time-integrated dynamic speckle patterns in biomedical optics**
» [Edward James](#) (United Kingdom)¹, Samuel Powell (United Kingdom)², Peter Munro (United Kingdom)¹ (1. University College London, 2. The University of Nottingham)
- 10:45am **MA1.3 - Scalable full-wave simulation of coherent light propagation through biological tissue**
» [Jake Bewick](#) (United Kingdom)¹, Peter Munro (United Kingdom)¹, Simon Arridge (United Kingdom)¹, James Guggenheim (United Kingdom)² (1. University College London, 2. University of Birmingham)

- 11am **MA1.4 - Modelling the Interrogation of Planar Fabry-Pérot Ultrasound Sensors with Bessel Beams**
» [Oliver Sheppard](#) (United Kingdom)¹, James Guggenheim (United Kingdom)², Dylan Marques (United Kingdom)¹, Peter Munro (United Kingdom)¹ (1. University College London, 2. University of Birmingham)
- 11:15am **MA1.5 - Light Modulation by a Small Pennate Diatom Valve: The Case of Gomphonema parvulum**
» [Mohamed Ghobara](#) (Germany)¹, Cathleen Oschatz (Germany)², Peter Fratzl (Germany)², Louisa Reissig (Germany)¹ (1. Institute of Experimental Physics, Freie Universität Berlin, Berlin, Germany, 2. Department of Biomaterials, Max Planck Institute of Colloids and Interfaces, Potsdam, Germany)
- 10am **MB1: Microwave Photonic Systems and Applications**
Chaired by: Ed Ackerman (United States) and Richard DeSalvo (United States)
- 10am **MB1.1 - Applications of Photonics in Radar and EW Systems (Invited)**
» [Charles Kryzak](#) (United States)¹ (1. Alion Science & Tech)
- 10:30am **MB1.2 - Reconfigurable Microwave Photonic Filter Enabled by a Quantum Dash Mode-Locked Laser**
» [Hao Sun](#) (Canada)¹, Mostafa Khalil (Canada)¹, David Plant (Canada)¹, Lawrence Chen (Canada)¹, Jiaren Liu (Canada)², Zhenguo Lu (Canada)², Philip Poole (Canada)³, John Weber (Canada)³ (1. McGill university, 2. Advanced Electronics Photonics Research Center National Research Council Canada, 3. Advanced Electronics and Photonics Research Center National Research Council Canada)
- 10:45am **MB1.3 - Design Guide for Photonic Frequency Converters**
» [Christian Bottenfield](#) (United States)¹, Varghese Thomas (United States)¹, Richard DeSalvo (United States)², Stephen E. Ralph (United States)³ (1. Georgia Institute of Technology, 2. L3 Harris, 3. Georgia)
- 11am **MB1.4 - A Folding and Image-Rejecting Microwave Photonic Link (Invited)**
» [Bryan Haas](#) (United States)¹, Jason McKinney (United States)² (1. Unites States Naval Research Laboratory, 2. United States Naval Research Laboratory)



Continued from Monday, 18 October	
10am	MC1: Excitonics and 2D Semiconductors Chaired by: Parag Deotare (United States) and Jennifer Choy (United States)
10am	MC1.1 - Excitonic Devices Based on 2D Semiconductor Heterostructures (Invited) » Andras Kis (Switzerland) ¹ (1. EPFL)
10:30am	MC1.2 - What do we know about exciton-exciton interactions? (Invited) » David Snoke (United States) ¹ (1. University of Pittsburgh)
10am	MD1: Parametric Light Generation in Optical Media Chaired by: François Légaré (Canada)
10am	MD1.1 - Nonlinear and Electro-Optic Effects in Disordered Nanocrystals (Invited) » Rachel Grange (Switzerland) ¹ (1. ETH Zurich, Optical Nanomaterial Group, Institute for Quantum Electronics)
10:30am	MD1.2 - 52 mJ CEP-stable sub-2-cycle 1.7 um laser based on DC-OPA » Lu Xu (Japan) ¹ , Eiji J Takahashi (Japan) ¹ (1. RIKEN Center for Advanced Photonics, RIKEN, Japan)
10:45am	MD1.3 - Continuous-wave high-power fiber-based difference-frequency-generation at 2.26 μm » Sukeert Sukeert (Spain) ¹ , Chaitanya Kumar Suddapalli (Spain) ¹ , Majid Ebrahim-Zadeh (Spain) ¹ (1. ICFO-The Institute of Photonic Sciences)
11am	MD1.4 - Self-phase-locking in pulsed degenerate optical parametric oscillators: Effect of cavity finesse » Alfredo Sanchez (Spain) ¹ , Chaitanya Kumar Suddapalli (Spain) ¹ , Majid Ebrahim-Zadeh (Spain) ¹ (1. ICFO-The Institute of Photonic Sciences)

10am	ME1: Quantum Communications Chaired by: Michael Brodsky (United States)
10am	ME1.1 - High-dimensional entanglement for quantum communication (Invited) » Marcus Huber (Austria) ¹ (1. Technical University Vienna)
10:30am	ME1.2 - Efficient long-range distribution of multi-photon entanglement » Magdalena Stobinska (Poland) ¹ , Monika Mycroft (Poland) ¹ , Thomas McDermott (Poland) ¹ , Adam Buraczewski (Poland) ¹ , Stefanie Barz (Germany) ² (1. University of Warsaw, 2. University of Stuttgart)
10:45am	ME1.3 - Quantum Wrapper Networking » S.J. Ben Yoo (United States) ¹ , Prem Kumar (United States) ² (1. UCDAVIS, 2. Northwestern University)
11am	ME1.4 - Witnessing the quantum channel capacity in the presence of correlated noise (Invited) » Valeria Cimini (Italy) ¹ , Ilaria Gianani (Italy) ¹ , Massimiliano Federico Sacchi (Italy) ² , Chiara Macchiavello (Italy) ³ , Marco Barbieri (Italy) ¹ (1. Università degli Studi Roma Tre, 2. National Research Council of Italy (CNR), 3. Università degli Studi di Pavia)
10am	MF1: Optical Fiber Devices Chaired by: Oleg Sinkin (United States)
10am	MF1.1 - Novel Fibers for Optically-Switched Data Centers (Invited) » Zhexin Liu (United Kingdom) ¹ (1. University College London)
10:30am	MF1.2 - High-speed FBG interrogator based on fiber interferometry and FPGA real-time processing » Javier Elaskar (Italy) ¹ , Marcelo Luda (Argentina) ² , Jorge Codnia (Argentina) ² , Claudio J. Oton (Italy) ¹ (1. Scuola Superiore Sant'Anna, 2. CITEDEF)
10:45am	MF1.3 - Optimum Q-switching profile for multipulse suppression in actively Q-switched fiber lasers » Jinho Lee (Korea, Republic of) ¹ , Ju Han Lee (Korea, Republic of) ¹ (1. University of Seoul)

Continued from **Monday, 18 October**

11am **MF1.4 - Narrow Line width and single frequency Raman amplification of distributed feedback laser diode at 1654nm**
 » Pin Long (Canada)¹, Qammar Goher (Canada)¹, Reza Soltanian (Canada)² (1. O/E Land Inc, 2. Institut National de la Recherche Scientifique, Centre Énergie, Matériaux et Télécommunications (INRS-EMT) Québec, Canada)

11:15am **MF1.5 - Generation of Optical Single Side Band Signal Using Semiconductor Optical Amplifier for 5G signal**
 » Yazan Alkhlefat (Malaysia)¹, Sevia M. Idrus (Malaysia)¹, Farabi Iqbal (Malaysia)¹ (1. Universiti Teknologi Malaysia)

10am **MG1: Silicon Photonics Integration and Packaging**
 Chaired by: Sarvagya Dwivedi (Belgium)

10am **MG1.1 - The Colloidal Quantum Dots Light-Emitting Diodes Device Integrated with a Solder-Ball**
 » Chung-Ping Huang (Taiwan)¹, Jhen-Jia Yang (Taiwan)², Ting-Yu Lee (Taiwan)², Yu-Ming Huang (Taiwan)², Hao-Chung Kuo (Taiwan)³, Chien-Chung Lin (Taiwan)² (1. Institute of Lighting and Energy Photonics National Yang Ming Chiao Tung University, 2. Institute of Photonic System National Yang Ming Chiao Tung University, 3. Department of Photonics National Yang Ming Chiao Tung University)

10:15am **MG1.2 - Femtosecond laser written Bragg grating sensors with passive fiber alignment structures in fused silica**
 » Viktor Geudens (Belgium)¹, Geert Van Steenberge (Belgium)¹, Jeroen Missinne (Belgium)² (1. Ghent University - imec, 2. Ghent University)

10:30am **MG1.3 - U-Groove Assisted Passive Assembly of 30x Single-Mode Fiber Array to Edge Couplers for Silicon Photonics**
 » Junwen He (Belgium)¹, Guy Lepage (Belgium)¹, Ozan Yilmaz (Belgium)¹, Peter Verheyen (Belgium)¹, Andy Miller (Belgium)¹, Marianna Pantouvaki (Belgium)¹, Joris Van Campenhout (Belgium)¹ (1. Imec)

10:45am **MG1.4 - Scalable Nano-Opto-Electromechanical Systems in Silicon Photonics (Invited)**
 » Niels Quack (Switzerland)¹, Alain Yuji Takabayashi (Switzerland)¹, Hamed Sattari (Switzerland)¹, Pierre Édinger (Sweden)², Kristinn B. Gylfason (Sweden)², Gaehun Jo (Sweden)², Frank Niklaus (Sweden)², Peter Verheyen (Belgium)³, Moises Jezzini (Ireland)⁴, Umar Khan (Belgium)⁵, Iman Zand (Belgium)⁶, Wim Bogaerts (Belgium)⁵ (1. EPFL, 2. KTH, 3. Imec, 4. Tyndall National Institute, 5. Ghent University - imec, 6. Ghent University)

11:15am **MG1.5 - Laser-fabricated ball lens optical interface for back side coupling to a silicon photonics sensor chip**
 » Jeroen Missinne (Belgium)¹, Viktor Geudens (Belgium)¹, Marie-Aline Mattelin (Belgium)¹, Giannis Pouloupoulos (Greece)², Charalampos Zervos (Greece)², Hercules Avramopoulos (Greece)², Michal Szaj (Czech Republic)³, Geert Van Steenberge (Belgium)¹ (1. Ghent University - imec, 2. National Technical University of Athens, 3. ARGOTECH a.s.)

10:30am **MH3: Roundtable on Photonic Foundries**
 Chaired by: Daniel Renner (United States)

12pm **MA2: Optical Coherence Tomography Technologies**
 Chaired by: Martin Villiger (United States) and Brian Applegate (United States)

12pm **MA2.1 - Distortion matrix concept for deep imaging in optical coherence tomography (Invited)**
 » Paul Balondrade (France)¹, Victor Barolle (France)¹, Amaury Badon (France)¹, Ulysse Najar (France)¹, Kristina Irsch (France)², Mathias Fink (France)¹, Claude Boccara (France)¹, Alexandre Aubry (France)³ (1. ESPCI Paris, PSL University, CNRS, Institut Langevin, 2. Vision Institute, 3. Institut L)

12:30pm **MA2.2 - Transient-mode photothermal optical coherence tomography**
 » Hossein Salimi (Canada)¹, Martin Villiger (United States)², Nima Tabatabaei (Canada)¹ (1. York University, 2. Harvard Medical School)

Continued from **Monday, 18 October**

- 12:45pm **MA2.3 - Single-fiber-based probe for combined imaging and pH sensing**
 » [Jiawen Li](#) (Australia)¹, Patrick Capon (Australia)¹, Aimee Horsfall (Australia)¹, Suliman Yagoub (Australia)¹, Erik Schartner (Australia)¹, Asma Khalid (Australia)², Rodney Kirk (Australia)¹, Malcolm Purdey (Australia)¹, Kylie Dunning (Australia)¹, Robert McLaughlin (Australia)¹, Andrew Abell (Australia)¹ (1. The University of Adelaide, 2. RMIT University)
- 1pm **MA2.4 - Improvement in resolution, side-lobe suppression, and phase sensitivity in OCT using a multi-window approach**
 » [Clayton Walker](#) (United States)¹, Anna Wisniowiecki (United States)¹, Wihan Kim (United States)¹, Eric Chandler (United States)², Jason Ensher (United States)², Michael Crawford (United States)², John Oghalai (United States)¹, Brian Applegate (United States)¹ (1. University of Southern California, 2. Insight Photonics Solutions)
- 1:15pm **MA2.5 - Process Insensitive Broadband Coupler for Optical Coherence Tomography Application**
 » [Shih-Hsiang Hsu](#) (Taiwan)¹, Hsiao-Yen Lu (Taiwan)², Ming-Wei Lai (Taiwan)², Hong-Yan Zheng (Taiwan)² (1. National Taiwan University of Science and Technology, 2. National Taiwan University of Science and Technology)
- 12pm **MB2: High Power and Mid-Infrared Lasers**
 Chaired by: Tom Earles (United States)
- 12pm **MB2.1 - Progress in High Power Diode Laser Pumps for High-Energy Class Mid Infra-Red Lasers (Invited)**
 » Seval Arslan (Germany)¹, Andre Maaßdorf (Germany)¹, Dominik Martin (Germany)¹, Sabrina Kreutzmann (Germany)¹, [Paul Crump](#) (Germany)¹ (1. Ferdinand-Braun-Institut gGmbH, Leibniz-Institut für Höchstfrequenztechnik)
- 12:30pm **MB2.2 - 16 μm GaAs/AlGaAs Quantum Cascade Laser**
 » [Ming Lyu](#) (United States)¹, Loren Pfeiffer (United States)¹, Claire Gmachl (United States)¹ (1. Princeton University)

- 12:45pm **MB2.3 - Multi-Gb/s free-space communication with energy-efficient room-temperature quantum cascade laser emitting at 8.1 μm**
 » Olivier Spitz (France)¹, Ke Yang (China)², Alice Guillaume-Manca (France)¹, [Pierre Didier](#) (France)¹, Junqi Liu (China)², Frédéric Grillot (France)¹ (1. LTCI Telecom Paris, 2. Key Lab of Semiconductor Materials Science, Chinese Academy of Sciences)
- 1pm **MB2.4 - Linewidth and Cavity Feedback in Photonic Crystal Surface Emitting Lasers**
 » [Akhil Raj Kumar Kalapala](#) (United States)¹, Cheng Guo (United States)¹, Luke Overman (United States)², Michael Vasilyev (United States)¹, James Coleman (United States)¹, Weidong Zhou (United States)¹ (1. University of Texas at Arlington, 2. Synergytech Inc.)
- 1:15pm **MB2.5 - High-power, low resistance, single-mode, multi-aperture VCSELS**
 » Dieter Bimberg (Germany)¹, Gunter Larisch (Germany)¹, Julian Lindner (Germany)¹, [Si-Cong Tian](#) (China)¹, Mansoor Ahamed (China)² (1. CIOMP of CAS and TU Berlin, 2. CIOMP of CAS and TU Berlin)
- 12pm **MC2: Integrated Nanophotonics I**
 Chaired by: Lan Yang (United States) and Noel Christopher Giebink (United States)
- 12pm **MC2.1 - Phase change reconfigurable nanophotonics on a foundry-processed SOI platform (Invited)**
 » Carlos Ríos (United States)¹, Yifei Zhang (United States)¹, Mikhail Shalaginov (United States)¹, Cosmin Constantin Popescu (United States)¹, Christopher Roberts (United States)², Paul Miller (United States)², Myungkoo Kang (United States)³, Kathleen Richardson (United States)³, Steven Vitale (United States)⁴, [Juejun Hu](#) (United States)¹ (1. MIT, 2. Lincoln Laboratory, 3. University of Central Florida, 4. Linc)
- 12:30pm **MC2.2 - Computationally efficient and fabrication error tolerant inverse-designed mode converters**
 » [Md Mahadi Masnad](#) (Canada)¹, Dan-Xia Xu (Canada)², Yuri Grinberg (Canada)², Odile Liboiron-Ladouceur (Canada)¹ (1. McGill university, 2. National Research Council Canada)



Continued from **Monday, 18 October**

12:45pm **MC2.3 - Optimization of Adiabatically Tapered Y-Branched for Dual Polarization Operation**

» [Can Ozcan](#) (Canada)¹, Mo Mojahedi (Canada)¹, J. Stewart Aitchison (Canada)¹ (1. University of Toronto)

1pm **MC2.4 - Realization of Fabrication-Tolerant Si3N4-Si Mode Transformers**

» [Jasper De Witte](#) (Belgium)¹, Stijn Cuyvers (Belgium)¹, Stijn Poelman (Belgium)¹, Bart Kuyken (Belgium)¹, Dries Van Thourhout (Belgium)¹ (1. Ghent University-imec)

1:15pm **MC2.5 - Experimental characterization of Inverse-Designed Vertical Grating Couplers in the O-band**

» Thomas Van Vaerenbergh (Belgium)¹, [Sean Hooten](#) (United States)¹, Peng Sun (United States)¹, Mudit Jain (United States)¹, Ashkan Seyedi (United States)¹, Zhihong Huang (United States)², Marco Fiorentino (United States)¹, Raymond G. Beausoleil (United States)² (1. Hewlett Packard Labs, 2. Hewlett Packard Enterprise)

12pm **MD2: Novel Devices and Applications**

Chaired by: William Loh (United States)

12pm **MD2.1 - Large mode size conversion via grating-assisted coupling between 1D and 2D optical waveguides**

» [Gavin West](#) (United States)¹, Rajeev Ram (United States)¹ (1. Massachusetts Institute of Technology)

12:15pm **MD2.2 - Wideband apodized phase-shifted subwavelength grating waveguide Bragg grating**

» [Hao Sun](#) (Canada)¹, Lawrence Chen (Canada)¹ (1. McGill university)

12:30pm **MD2.3 - Broadband multimode interference coupler on InP substrate with flat wavelength response over the whole O-band**

» [Joel Hazan](#) (Netherlands)¹, Dzmityr Pustakhod (Netherlands)¹, Steven Kleijn (Netherlands)², Stefanos Andreou (Netherlands)², Kevin Williams (Netherlands)¹, Erwin Bente (Netherlands)¹ (1. EINDHOVEN UNIVERSITY OF TECHNOLOGY, 2. Smart Photonics B.V.)

12:45pm

MD2.4 - Thin silicon layer as heat channel for low-loss SiN tunable devices

» [Charles Caer](#) (Belgium)¹, Sarvagya Dwivedi (Belgium)¹ (1. Imec)

1pm

MD2.5 - Microscale photonic lantern multiplexer compatible with 3D printing technology

» [Yoav Dana](#) (Israel)¹, Dan Marom (Israel)¹ (1. HEBREW UNIVERSITY)

12pm

ME2: Further Capacity Enhancements

Chaired by: Deepa Venkitesh (India) and Fotini Karinou (United Kingdom)

12pm

ME2.1 - Multi-band programmable gain Raman amplifier for high-capacity optical networks (Invited)

» [Uiara de Moura](#) (Denmark)¹, Md Asif Iqbal (United Kingdom)², Morteza Kamalian (United Kingdom)³, Lukasz Krzczanowicz (Denmark)¹, Francesco Da Ros (Denmark)¹, Ann Margareth Rosa Brusin (Italy)⁴, andrea carena (Italy)⁵, Wlodek Forysiak (United Kingdom)³, Sergei Turitsyn (United Kingdom)³, Darko Zibar (Denmark)¹ (1. Danmarks Tekniske Universitet (DTU), 2. BT Applied Research, 3. Aston University, 4. Politecnico di Torino, 5. Politecnico di Torino)

12:30pm

ME2.2 - Network Capacity and Energy Consumption: Transparent C+L-band vs Translucent C-band

» [Rasoul Sadeghi](#) (Italy)¹, Bruno Correia (Italy)², Emanuele Virgilito (Italy)¹, Antonio Napoli (United Kingdom)³, Nelson Costa (Portugal)³, Joao Pedro (Portugal)³, vittorio curri (Italy)⁴ (1. DET, Politecnico di Torino, C.so Duca degli Abruzzi 24, 10129 Torino, Italy, 2. Politecnico, 3. Infinera Corporation, 4. Politecnico di Torino)

12:45pm

ME2.3 - DCO-OFDM Channel Sounding with a SiPM Receiver

» [William Matthews](#) (United Kingdom)¹, Cuiwei He (United Kingdom)¹, Steve Collins (United Kingdom)¹ (1. The University of Oxford)

12pm

MF2: Novel Optical Fiber Designs

Chaired by: Rodrigo Amezcua Correa (United States)



Continued from **Monday, 18 October**

- 12pm **MF2.1 - Multicomponent Glass Optical Fibers for Mid-Infrared (Invited)**
 » [Angela Seddon](#) (United Kingdom)¹, Lukasz Sojka (Poland)², David Furniss (United Kingdom)³, Richard Crane (United Kingdom)³, Joel Nunes (United Kingdom)³, David Mabwa (United Kingdom)⁴, Sendy Phang (United Kingdom)³, Emma Barney (United Kingdom)³, Mark Farries (United Kingdom)³, Slawek Sujecki (Poland)² (1. University of Nottingham, 2. Department of Telecommunications and Teleinformatics, Faculty of Electronics, Wroclaw University of Science and Technology, Wybrzeze Wyspianskiego 27, 50-370 Wroclaw,, 3. MIR Photonics Group, George Green Institute for Electromagnetics Research, Faculty of Engineering, University of Nottingham, NG7 2RD, UK, 4. MIR Photonics Group, Faculty of Engineering, University of Nottingham)
- 12:30pm **MF2.2 - Continuous Fabrication of Suspended Core Polypropylene Fiber for THz Communications**
 » [Guofu Xu](#) (Canada)¹, Kathirvel Nallappan (Canada)¹, Yang Cao (Canada)¹, Maksim Skorobogatiy (Canada)¹ (1. Polytechnique Montreal)
- 12:45pm **MF2.3 - Effect of the nested elements to the confinement losses in chalcogenide hollow-core fibers**
 » [Asfandyar Khan](#) (Turkey)¹, Mustafa Ordu (Turkey)¹ (1. Bilkent University)
- 1pm **MF2.4 - High-sensitivity Elastomer Design for Fiber-based Acoustic Signal Detection**
 » [Zihan Liang](#) (China)¹, Zhengting Wu (China)¹, Huanhuan Liu (China)¹, Hong Dang (China)¹, Luoyuan Liao (China)¹, Jinna Chen (China)¹, Perry Ping Shum (China)¹ (1. Department of Electrical and Electronic Engineering, Southern University of Science and Technology)
- 1:15pm **MF2.5 - Reflective Long Period Grating Based Refractive Index Sensor**
 » [Sohel Rana](#) (United States)¹, Nirmala Kandadai (United States)¹, Harish Subbaraman (United States)¹ (1. Boise State University)
- 12pm **MG2: Material and Device Design**
 Chaired by: Shuren Hu (United States) and Mark Stephen (United States)

- 12pm **MG2.1 - Non-volatile reconfigurable materials for mid index photonic systems (Invited)**
 » [Joaquín Faneca](#) (Spain)¹, Ioannis Zeimpekis (United Kingdom)², Thalía Domínguez Bucio (United Kingdom)³, Stefan Ilie (United Kingdom)³, Katarzyna Grabska (United Kingdom)³, Daniel Hewak (United Kingdom)³, Frederic Gardes (United Kingdom)⁴ (1. IMB, 2. Optoelectronics Research Centre, University of Southampton, 3. Optoelectronics Research Centre, University of Southampton, UK, 4. University of Southampton)
- 12:30pm **MG2.2 - Efficient coupling strategies for silicon photonic integrated circuits (Invited)**
 » [Periklis Petropoulos](#) (United Kingdom)¹, Valerio Vitali (United Kingdom)², Thalía Domínguez Bucio (United Kingdom)², Hao Liu (United Kingdom)², Lorenzo Mastronardi (United Kingdom)², Joaquin Faneca (Spain)³, Frederic Gardes (United Kingdom)², Riccardo Marchetti (Italy)⁴, Cosimo Lacava (Italy)⁴ (1. Optoelectronics Research Centre, University of Southampton, 2. Optoelectronics Research Centre, University of Southampton, UK, 3. IMB, 4. Università di Pavia)
- 1pm **MG2.3 - On the Accuracy of Numerical Models for All-Silicon Photonics Carrier Depletion Modulators**
 » [Qun Zhang](#) (United States)¹, Xuanhui Wu (United States)¹, Namyong Lee (United States)¹, Ruijun Zhao (United States)¹, Du'a Al-Zaleq (United States)¹, Ebrima Marong (United States)¹, Puteri Megat Hamari (United States)¹, Xi Wang (United States)¹, Nabin Bhattarai (United States)¹ (1. Minnesota State University Mankato)
- 1:15pm **MG2.4 - Optically reconfigurable gate array with a 1 Grad total-ionizing-dose tolerant holographic memory**
 » Junya Ishido (Japan)¹, [Minoru Watanabe](#) (Japan)², Akifumi Ogiwara (Japan)³ (1. Shizuoka University, 2. Okayama University, 3. Kobe City College of Technology)
- 12pm **MH4: Hot Topics in Industry**
 Chaired by: Aref Chowdhury (United States)
- 12pm **MH4.1 - Artificial Intelligence with Advanced Photonics Boost High-resolution 3D Vision up to a Kilometer Away**
 » [Hod Finkelstein](#) (United States)¹ (1. Aeye, Inc)



Continued from **Monday, 18 October**

- 12:20pm **MH4.2 - 5G in Industrial Manufacturing**
» [Tracey Vanik](#) (United States)¹ (1. EPIC)
- 12:40pm **MH4.3 - IP/Optical integration with 400ZR/+**
» [Tibi Grigoriu](#) (Canada)¹ (1. Nokia Network Infrastructure Strategy and Technology)
- 1:30pm **MH5: Panel on The Photonics Labor Market and Career Development**
Chaired by: Patryk Urban (Poland) and Matthew Posner (Canada)
- 3pm **MH6: The Canadian Photonics Industry Landscape**
Chaired by: Dalma Novak (United States) and Erin Young (United States)
- 3pm **MH6.1 - Canadian Photonics & Ciena – Capacity for the World**
» [Stephen Alexander](#) (United States)¹ (1. Ciena)
- 3:20pm **MH6.2 - The Business of Quebec Photonics**
» [Madison Rilling](#) (Canada)¹ (1. Optonique)
- 3:40pm **MH6.3 - Silicon Nitride Photonics in Canada**
» [Philippe Babin](#) (Canada)¹ (1. Aeponyx)
- 4pm **MH6.4 - A Canadian Perspective on Photonic Design in a Global Photonic Ecosystem**
» [James Pond](#) (Canada)¹ (1. Ansys Lumerical)
- 4:20pm **MH6.5 - Photonic Innovations at TeraXion**
» [Ghislain LaFrance](#) (Canada)¹ (1. TeraXion)
- 4:40pm **MH6.6 - Lumentum's Global Photonic Leadership!**
» [Doug Alteen](#) (Canada)¹ (1. Lumentum)

- 6pm **MA3: Machine Learning and Optical Communication and Sensing**
Chaired by: Giovanni Milione (United States) and Rajesh Menon (United States)
- 6pm **MA3.1 - Nonlinear Impairment Compensation With Artificial Neural Networks (Invited)**
» [Fatih Yaman](#) (United States)¹, Shinsuke Fujisawa (United States)², Hussam Batshon (United States)³, Masaaki Tanio (Japan)⁴, Naoto Ishii (Japan)⁴, Chaoran Huang (United States)⁵, Thomas Ferreira de Lima (United States)⁶, Yoshihisa Inada (Japan)⁴, Paul Prucnal (United States)⁵, Norifumi Kamiya (Japan)⁴, Ting Wang (United States)⁶ (1. NEC Labs America, 2. NEC Laboratories America, Inc., 3. NEC Laboratories America, Inc, 4. NEC Corporation, 5. Princeton University, 6. NEC)
- 6:30pm **MA3.2 - Real-time Processing with Neuromorphic Silicon Photonics (Invited)**
» [Thomas Ferreira de Lima](#) (United States)¹, Chaoran Huang (United States)¹, Bhavin Shastri (Canada)², Paul Prucnal (United States)¹ (1. Princeton University, 2. Queen's University)
- 7pm **MA3.3 - A Neural Network-Based Adaptive MIMO-VLC System**
» [Fangxiao Dong](#) (United Kingdom)¹, Dominic O'Brien (United Kingdom)¹ (1. University of Oxford)
- 7:15pm **MA3.4 - Deep Learning Network on Waveform Components Recognition for Distributed Optic-Fiber Sensing**
» [Zhengtng Wu](#) (China)¹, Zihan Liang (China)¹, Yongjuan Shi (China)¹, Huanhuan Liu (China)¹, Hong Dang (China)¹, Luoyuan Liao (China)¹, Jinna Chen (China)¹, Perry Ping Shum (China)¹ (1. Department of Electrical and Electronic Engineering, Southern University of Science and Technology)
- 6pm **MB3: Semiconductor Lasers on Silicon**
Chaired by: Luke J. Mawst (United States) and Mikhail Belkin (Germany)
- 6pm **MB3.1 - Hybrid integrated light sources on silicon assembled by transfer printing (Invited)**
» [Yasutomo Ota](#) (Japan)¹, Satoshi Iwamoto (Japan)², Yasuhiko Arakawa (Japan)² (1. Keio University, 2. The University of Tokyo)



Continued from **Monday, 18 October**

6:30pm **MB3.2 - Gain switching of 1.55 μm QDash Lasers directly grown on Silicon**

» [Qi LIN](#) (Hong Kong)¹, [Ying XUE](#) (Hong Kong)¹, [Wei LUO](#) (Hong Kong)¹, [Jie HUANG](#) (Hong Kong)¹, [Liyang LIN](#) (Hong Kong)¹, [Kei May LAU](#) (Hong Kong)¹ (1. the Hong Kong University of Science and Technology)

6:45pm **MB3.3 - 1.3 μm High Performance Regrown Distributed Feedback Lasers Epitaxially Grown on Si**

» [Rosalyn Koscica](#) (United States)¹, [Yating Wan](#) (United States)¹, [Chen Shang](#) (United States)¹, [Arthur Gossard](#) (United States)¹, [John Bowers](#) (United States)¹ (1. University of California Santa Barbara)

7pm **MB3.4 - Multiwavelength membrane laser array on Si using selective-area epitaxial growth (Invited)**

» [Takuro Fujii](#) (Japan)¹, [Tomonari Sato](#) (Japan)¹, [Koji Takeda](#) (Japan)¹, [Shinji Matsuo](#) (Japan)¹ (1. NTT Corporation)

6pm **MC3: Electromagnetic Emission**

Chaired by: [Paul Barclay](#) (Canada) and [Prasad Iyer](#) (United States)

6pm **MC3.1 - Frequency noise study in a silicon Raman laser**

» [Mohammad Ahmadi](#) (Canada)¹, [Vincent Michaud-Belleau](#) (Canada)¹, [Jérôme Genest](#) (Canada)¹, [Wei Shi](#) (Canada)¹, [Sophie LaRochelle](#) (Canada)² (1. Centre d'optique, photonique et laser (COPL), Université Laval Québec, QC, 2. COPL, Université Laval)

6:15pm **MC3.2 - High Efficiency InGaN Nanocrystal Tunnel Junction Micro LEDs**

» [Xianhe Liu](#) (United States)¹, [YI Sun](#) (United States)¹, [Yakshita Malhotra](#) (United States)¹, [Ayush Pandey](#) (United States)¹, [Yuanpeng Wu](#) (United States)¹, [Kai Sun](#) (United States)¹, [Zetian Mi](#) (United States)¹ (1. University of Michigan)

6:30pm **MC3.3 - Designable, temperature-dependent thermal emission using vanadium-dioxide microstructures**

» [Romil Audhkhasi](#) (United States)¹, [Michelle Povinelli](#) (United States)² (1. University of Southern California, 2. University Southern California)

6:45pm

MC3.4 - Spectral variations in a bioinspired random laser

» [Venkata Siva Gummaluri](#) (Singapore)¹, [Gayathri R](#) (Singapore)¹, [Vijayan C](#) (India)², [Murukeshan Vadakke Matham](#) (Singapore)¹ (1. Nanyang Technological University, 2. Indian Institute of Technology Madras)

7pm

MC3.5 - Improved Hole Injection in a Quantum Rod Light Emitting Diode

» [Kumar Mallem](#) (Hong Kong)¹, [Maksym PRODANOV](#) (Hong Kong)¹, [chengbin KANG](#) (Hong Kong)², [Mikita Marus](#) (Hong Kong)³, [Valerii VASHCHENKO](#) (Hong Kong)², [Abhishek Srivastava](#) (Hong Kong)⁴ (1. The Hong Kong University of Science and Technology Hong Kong, China, 2. The Hong Kong University of Science and Technology HongKong, China, 3. the Hong Kong University of Science and Technology, 4. State Key Laboratory of Advanced Displays and Optoelectronics Technologies, Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong)

7:15pm

MC3.6 - Healthy Lighting Design by Semiconductor Nanorods with Narrow Bandwidth Emission

» [chengbin KANG](#) (Hong Kong)¹, [Maksym PRODANOV](#) (Hong Kong)², [Kumar Mallem](#) (Hong Kong)³, [Prajakta Chaudhari](#) (China)⁴, [Valerii VASHCHENKO](#) (Hong Kong)¹, [Abhishek Srivastava](#) (Hong Kong)⁵ (1. The Hong Kong University of Science and Technology HongKong, China, 2. The Hong Kong University of Science and Technology Hong Kong, China, 3. thrthrt, 4. HKUST, 5. State Key Laboratory of Advanced Displays and Optoelectronics Technologies, Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong)

6pm

MD3: Nonlinear Conversion in Photonic Waveguides

Chaired by: [Alireza Marandi](#) (United States) and [David Jones](#) (Canada)

6pm

MD3.1 - Structured Photonics in Light-Matter Interactions, Accelerators, and X-ray Lasers (Invited)

» [Sergio Carbajo](#) (United States)¹ (1. Stanford University)



Continued from **Monday, 18 October**

6:30pm **MD3.2 - Raman Enhanced Four-Wave Mixing in Silicon Core Fibers**

» [Shiyu Sun](#) (United Kingdom)¹, Meng Huang (United Kingdom)¹, Dong Wu (United Kingdom)¹, Li Shen (China)², Haonan Ren (United Kingdom)¹, Thomas Hawkins (United States)³, John Ballato (United States)³, Ursula Gibson (Norway)⁴, Goran Mashanovich (United Kingdom)¹, Anna Peacock (United Kingdom)¹ (1. Optoelectronics Research Centre, 2. Wuhan National Laboratory for Optoelectronics, 3. Department of Materials Science and Engineering Clemson University, 4. Norwegian University of Science and Technology)

6:45pm **MD3.3 - Ultralow loss, fast all-optical scalable switches**

» [Mircea Balaurouiu](#) (Denmark)¹, Fabian Ruf (Denmark)¹, Nicolas Volet (Denmark)¹, Martijn J.R. Heck (Netherlands)² (1. Department of Electrical and Computer Engineering, Aarhus University, Aarhus, 2. Electrical Engineering Department, Eindhoven University of Technology, Eindhoven)

7pm **MD3.4 - Mid-Infrared Coherent Dispersive Wave Generation in Silicon Nitride Slot Waveguide**

» [Yuxi Fang](#) (China)¹, Changjing Bao (United States)², Zhi Wang (China)¹, Hao Zhang (China)¹, Zhongqi Pan (United States)³, Yang Yue (China)¹ (1. Nankai University, 2. University of Southern California, 3. University of Louisiana at Lafayette)

7:15pm **MD3.5 - Anti-PT-Symmetry induced by Four Wave Mixing in Silicon Nitride Integrated Photonic Resonators**

» Francesco De Leonardis (Italy)¹, [Martino De Carlo](#) (Italy)¹, Vittorio M. N. Passaro (Italy)¹ (1. Photonics Research Group, Department of Electrical and Information Engineering, Politecnico di Bari)

6pm **ME3: State of the Quantum Science**

Chaired by: Michael Brodsky (United States)

6pm **ME3.1 - Our Entangled Future: Smaller, faster, better (Tutorial)**

» [Paul Kwiat](#) (United States)¹ (1. University of Illinois Urbana-Champaign)

7pm **ME3.2 - Long-distance entanglement of remote atomic quantum memories (Invited)**

» [Xiao-Hui Bao](#) (China)¹ (1. University of Science and Technology of China)

6pm **MF3: Tutorial and Ansys Photonic Inverse Design Workshop**

Chaired by: Jens Niegemann (Canada) and Taylor Robertson (Canada)

6pm **MG3: Silicon Photonics Beyond 100 Gb/s**

Chaired by: Tingyi Gu (United States)

6pm **MG3.1 - Co-packaged Optics: Opportunities and Challenges for Silicon Photonics (Invited)**

» [Po Dong](#) (United States)¹ (1. II-VI Incorporated, 48800 Milmont Dr, Fremont, CA 94538)

6:30pm **MG3.2 - A 100Gb/s PAM-4 Silicon Photonic Transmitter with Two Binary-Driven EAMs in MZI Structure**

» [Arian Hashemi Talkhoonchah](#) (United States)¹, Aaron Zilkie (United States)², Guomin Yu (United States)², Roshanak Shafiiha (United States)², Azita Emami (United States)¹ (1. California Institute of Technology, 2. Rockley Photonics Inc.)

6:45pm **MG3.3 - Nonlinear Equalization for Optical Interconnects (Invited)**

» Kuan-Chang Chen (United States)¹, [Azita Emami](#) (United States)¹ (1. California Institute of Technology)

7:15pm **MG3.4 - A Fully Integrated O-band Coherent Optical Receiver Operating up to 80 Gb/s**

» [Yujie Xia](#) (United States)¹, Luis Valenzuela (United States)¹, Aaron Maharry (United States)¹, Sergio Pinna (United States)¹, Sarvagya Dwivedi (United States)¹, Takako Hirokawa (United States)¹, James Buckwalter (United States)¹, Clint Schow (United States)¹ (1. UC Santa Barbara)

8pm **MA4: Machine Learning, Imaging, and Information Processing**

Chaired by: Fatih Yaman (United States) and Giovanni Milione (United States)



Continued from **Monday, 18 October**

- 8pm
MA4.1 - Non-anthropocentric computational imaging (Invited)
 » [Rajesh Menon](#) (United States)¹ (1. University of Utah)
- 8:30pm
MA4.2 - Diffractive Optical Networks (Invited)
 » [Aydogan Ozcan](#) (United States)¹ (1. UCLA)
- 9pm
MA4.3 - Effect of Optical Coherence Tomography Acquisition Sampling Rate Towards Diabetic Retinopathy Severity Classification
 » [Timothy Yu](#) (Canada)¹, [Da Ma](#) (Canada)¹, [Julian Lo](#) (Canada)¹, [Myeong Jin Ju](#) (Canada)², [Mirza Faisal Beg](#) (Canada)¹, [Marinko Sarunic](#) (Canada)¹ (1. Simon Fraser University, 2. University of British Columbia)
- 9:15pm
MA4.4 - Learning-based method for full phase reconstruction of biological samples in digital holographic microscopy
 » [Raul Castaneda](#) (United States)¹, [Carlos Trujillo](#) (Colombia)², [Ana Doblaz](#) (United States)³ (1. The University of Memphis, 2. Universidad EAFIT, 3. The Univeristy of Memphis)
- 8pm
MB4: QD and Nanostructures Lasers
 Chaired by: [Qing Gu](#) (United States)
- 8pm
MB4.1 - An integrated platform for colloidal quantum dots and micro LEDs (Invited)
 » [Chien-Chung Lin](#) (Taiwan)¹, [Hao-Chung Kuo](#) (Taiwan)² (1. Institute of Photonic System National Yang Ming Chiao Tung University, 2. Department of Photonics National Yang Ming Chiao Tung University)

- 8:30pm
MB4.2 - High-speed InGaAs/InP Quantum Well Nanowire Array Light Emitting Diodes at Telecommunication Wavelength
 » [Fanlu Zhang](#) (Australia)¹, [Zhicheng Su](#) (Australia)¹, [Yi Zhu](#) (Australia)¹, [Ziyuan Li](#) (Australia)¹, [Mark Lockrey](#) (Australia)², [Li Li](#) (Australia)³, [Yuerui Lu](#) (Australia)⁴, [Hark Hoe Tan](#) (Australia)⁵, [Chennupati Jagadish](#) (Australia)⁵, [Lan Fu](#) (Australia)⁵ (1. Research School of Physics The Australian National University, 2. Microstructural Analysis Unit, University of Technology Sydney, 3. Australian National Fabrication Facility ACT Node The Australian National University, 4. Research School of Electrical, Energy, and Materials Engineering The Australian National University, 5. ARC Centre of Excellence on Transformative Meta Optical Systems Research School of Physics The Australian National University)
- 8:45pm
MB4.3 - Controlling the type of lasing modes in disordered media based on GaAs-AlGaAs nanowires
 » [Mohammad Rashidi](#) (Australia)¹, [Tuomas Haggren](#) (Australia)², [Zhicheng Su](#) (Australia)², [Chennupati Jagadish](#) (Australia)², [Sudha Mokkalapati](#) (Australia)³, [Hark Hoe Tan](#) (Australia)² (1. The Australian National Univeristy, 2. Department of Electronic Materials Engineering The Australian National University, 3. Department of Materials Science and Engineering Monash University)
- 9pm
MB4.4 - Quantum Coherent Effects in Room Temperature QD ensambles (Invited)
 » [Gadi Eisenstein](#) (Israel)¹ (1. Technion)
- 8pm
MC4: Integrated Nanophotonics II
 Chaired by: [Michelle Povinelli](#) (United States) and [Parag Deotare](#) (United States) and [Jennifer Choy](#) (United States)
- 8pm
MC4.1 - High Birefringence in CMOS-compatible ultra-silicon rich nitride vertical slot waveguides
 » [Abhijit Kumar Gupta](#) (Singapore)¹, [George Chen](#) (Singapore)², [Hongwei Gao](#) (Singapore)², [Doris Ng](#) (Singapore)³, [Dawn Tan](#) (Singapore)² (1. Photonics Devices and Systems Group, Singapore University of Technology and Design, 8 Somapah Rd., Singapore 487372, 2. Singapore university of technology and design, 3. Institute of Microelectronics, A*STAR, 2 Fusionopolis Way, #08-02, Innovis Tower, Singapore 138634)



Continued from **Monday, 18 October**

- 8:15pm **MC4.2 - Bulk Transition Metal Dichalcogenides For Integrated Nonophotonics**
 » [Artur Davoyan](#) (United States)¹ (1. University of California Los Angeles)
- 8:30pm **MC4.3 - Bandwidth Enhancement of 2×4-MMI-Coupler-Based Optical 90° Hybrid on Silicon-on-Insulator**
 » [Luhua Xu](#) (Canada)¹ (1. CMC Microsystems)
- 8:45pm **MC4.4 - Ultra-broadband silicon photonic polarization beam splitter with anisotropic subwavelength grating metamaterials**
 » [Md Borhan Mia](#) (United States)¹, [Syed Z. Ahmed](#) (United States)¹, [Ishtiaque Ahmed](#) (United States)², [Nafiz Jaidye](#) (United States)², [Sangsik Kim](#) (United States)¹ (1. Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas 79409, 2. Department of Physics and Astronomy, Texas Tech University, Lubbock, Texas 79409)
- 9pm **MC4.5 - CMOS-enabled, silicon nanowire array decorated PV module for smart dimmable glass application**
 » [Ying-Chi Chen](#) (Taiwan)¹, [Yi-Chen Wu](#) (Taiwan)¹, [Chung-Ming Yang](#) (Taiwan)¹, [Yung-Jr Hung](#) (Taiwan)¹ (1. National Sun Yat-sen University)
- 9:15pm **MC4.6 - Integrated Optical Unitary Converter based on Nonuniform Multimode Interference Coupler**
 » [Ryota Tanomura](#) (Japan)¹, [Rui Tang](#) (Japan)¹, [Takuo Tanemura](#) (Japan)¹, [Yoshiaki Nakano](#) (Japan)¹ (1. School of Engineering, The University of Tokyo)
- 8pm **ME4: Advanced Fabrication Techniques for Detectors**
 Chaired by: [Sadhvikas Addamane](#) (United States)
- 8pm **ME4.1 - Design and Analysis of Angle-sensitive Pixels for Near-infrared Imaging**
 » [Soyoung Park](#) (Korea, Republic of)¹, [Changhyuk Lee](#) (Korea, Republic of)¹ (1. Korea Institute of Science and Technology)

- 8:15pm **ME4.2 - A Carrier Drain Structure for Reducing the Output Noise of Silicon Photomultipliers after Exposure to Strong Incident Light.**
 » [Kazuaki Okamoto](#) (Japan)¹, [Ikuo Fujiwara](#) (Japan)¹, [Mariko Shimizu](#) (Japan)¹, [Honam Kwon](#) (Japan)¹, [Keita Sasaki](#) (Japan)¹, [Kazuhiro Suzuki](#) (Japan)¹ (1. Corporate Research and Development Center, Toshiba Corporation)
- 8:30pm **ME4.3 - Thinner and Faster Photodetectors Producing Lower Phase Noise**
 » [Ergun Simsek](#) (United States)¹, [Seyed Ehsan Jamali Mahabadi](#) (United States)¹, [Ishraq Md Anjum](#) (United States)¹, [Curtis R. Menyuk](#) (United States)¹ (1. University of Maryland Baltimore County)
- 8:45pm **ME4.5 - Optimum Design of a Ge/SiO₂ Periodic Structure for Efficient Light-coupling and Absorption at 1550 nm**
 » [Ching-Yu Hsu](#) (Taiwan)¹, [Zingway Pei](#) (Taiwan)¹ (1. National Chung Hsing University)
- 8pm **MG4: OI Workshop: The Future of Optical Switches**
 Chaired by: [Sudip Shekhar](#) (Canada)

Tuesday, 19 October

- 10am **IPC 2021 Welcome Remarks**
 Chaired by: [Christina Lim](#) (Australia) and [Weidong Zhou](#) (United States)
- 10:05am **TuA1: Plenary Session I**
 Chaired by: [Christina Lim](#) (Australia) and [Weidong Zhou](#) (United States)
- 10:05am **TuA1.1 - Photonics for Neuromorphic Computing (Plenary)**
 » [Paul Prucnal](#) (United States)¹ (1. Princeton University)
- 10:50am **TuA1.2 - Overview of Silicon Photonics Design, Process, and Applications (Plenary)**
 » [Hong Hou](#) (United States)¹ (1. Intel Corporation, Santa Clara, CA)



Continued from **Tuesday, 19 October**

12pm **TuA2: Nonlinear Effects and Quantum New Devices**
 Chaired by: Daniel Jones (United States) and Michael Brodsky (United States)

12pm **TuA2.1 - Parametric amplification before detection: protection of quantum enhancement against loss and noise (Invited)**
 » [Maria Chekhova](#) (Germany)¹ (1. Max-Planck Institute for the Science of Light)

12:30pm **TuA2.2 - Deterministic Creation of Quantum Emitters in Hexagonal Boron Nitride on Non-patterned Substrates (Best Student Paper Finalist)**
 » [Xiaohui Xu](#) (United States)¹, Zachariah Martin (United States)¹, Demid Sychev (United States)¹, Alexei Lagutchev (United States)¹, Yong Chen (United States)¹, Vladimir Shalaev (United States)¹, Alexandra Boltasseva (United States)¹ (1. Purdue University)

12:45pm **TuA2.3 - A New Paradigm for On-chip Quantum Photonics: Highly Uniform Single Photon Source Arrays**
 » [Jiefei Zhang](#) (United States)¹, Qi Huang (United States)², Swarnabha Chattaraj (United States)², Lucas Jordao (United States)², Siyuan Lu (United States)³, Anupam Madhukar (United States)¹ (1. Univ of Southern California, 2. University of Southern California, 3. IBM Thomas J. Watson Research Center)

1pm **TuA2.4 - Quantum Nonlinear Optics On Chip: Opportunities and Challenges (Invited)**
 » [Yuping Huang](#) (United States)¹ (1. Stevens Institute of Technology)

12pm **TuB2: QD and Novel Cavity Lasers**
 Chaired by: Peter M. Smowton (United Kingdom)

12pm **TuB2.1 - Electrically Pumped 2-Dimensional Semiconductor Topological Lasers (Invited)**
 » [Qi Jie Wang](#) (Singapore)¹ (1. Nanyang Technological University)

12:30pm **TuB2.2 - Degradation Behaviors in InAs Quantum Dot Lasers on Silicon using Misfit Dislocation Trapping Layers**
 » [Jennifer Selvidge](#) (United States)¹, Eamonn Hughes (United States)¹, Chen Shang (United States)², Robert Herrick (United States)³, John Bowers (United States)², Kunal Mukherjee (United States)⁴ (1. UC Santa Barbara Materials, 2. University of California Santa Barbara, 3. Intel Corporation, Santa Clara, CA, 4. Stanford University)

12:45pm **TuB2.3 - The limits to peak modal gain in p-modulation doped indium arsenide quantum dot laser diodes**
 » [Benjamin Maglio](#) (United Kingdom)¹, Lydia Jarvis (United Kingdom)¹, Craig P. Allford (United Kingdom)¹, Sara-Jayne Gillgrass (United Kingdom)¹, Samuel Shutts (United Kingdom)¹, Mingchu Tang (United Kingdom)², Huiyun Liu (United Kingdom)², Peter M. Smowton (United Kingdom)¹ (1. Cardiff University, 2. University College London)

1pm **TuB2.4 - Supersymmetric Microlaser Arrays in Two Dimensions and Beyond**
 » Xingdu Qiao (United States)¹, Bikashkali Midya (India)², [Zihe Gao](#) (United States)¹, Zhifeng Zhang (United States)¹, Haoqi Zhao (United States)¹, Tianwei Wu (United States)¹, Jieun Yim (United States)¹, Ritesh Agarwal (United States)¹, Natalia Litchinitser (United States)³, Feng Liang (United States)¹ (1. University of Pennsylvania, 2. Indian Institute of Science Education and Research, 3. Duke University)

12pm **TuC2: OI Workshop: Feeding the Beast: The Constant Need for Higher Bandwidth Optical Interconnects**
 Chaired by: Liron Gantz (Israel)

12pm **TuD2: Integration for Silicon Photonics**
 Chaired by: Sarvagya Dwivedi (Belgium)

12pm **TuD2.1 - Integration of graphene and 2D-materials on Si and SiN Photonic ICs (Tutorial)**
 » Cheng Han Wu (Belgium)¹, Steven Brems (Belgium)², Marianna Pantouvaki (Belgium)², Cedric Huyghebaert (Belgium)², [Dries Van Thourhout](#) (Belgium)³ (1. Ghent University - imec, 2. Imec, 3. Ghent University-imec)



Continued from Tuesday, 19 October

- 1pm
- TuD2.2 - Efficient Optical Coupling between III-V Semiconductor and SiN Waveguides via Heteroepitaxial Integration**
 » [Christopher Heidelberger](#) (United States)¹, Cheryl Sorace-Agaskar (United States)¹, Jason Plant (United States)¹, Dave Kharas (United States)¹, Reuel Swint (United States)¹, Pankul Dhingra (United States)², Minjoo Lee (United States)², Paul Juodawlkis (United States)¹ (1. MIT Lincoln Laboratory, 2. University of Illinois at Urbana-Champaign)
- 1:15pm
- TuD2.3 - Towards Monolithically Integrated SiGe Optical Receiver with an All-Silicon Photodetector**
 » Bahaa Radi (Canada)¹, Md Mahadi Masnad (Canada)¹, [Jose Garcia Echeverria](#) (Canada)¹, Glenn Cowan (Canada)², Odile Liboiron-Ladouceur (Canada)¹ (1. McGill university, 2. Concordia University)
- 12pm
- TuE2: Wireless Optical Communications**
 Chaired by: Dominic O'Brien (United Kingdom) and Fatima Gunning (Ireland)
- 12pm
- TuE2.1 - 4 Gbps wireless optical communications up to 5 m using a UV-C micro-light-emitting diode array**
 » [Jonathan McKendry](#) (United Kingdom)¹, Enyuan Xie (United Kingdom)¹, Mohamed Sufyan Islim (United Kingdom)², Xiaobin Sun (United Kingdom)³, Daniel MacLure (United Kingdom)¹, Erdan Gu (United Kingdom)¹, Harald Haas (United Kingdom)², Martin D. Dawson (United Kingdom)² (1. Institute of Photonics, Department of Physics, University of Strathclyde, 2. University of Strathclyde, 3. Fraunhofer Centre for Applied Photonics)
- 12:15pm
- TuE2.2 - On the effect of inter-symbol interference on mutual information of undersea optical wireless links**
 » Ruben Boluda-Ruiz (Spain)¹, [Pedro Salcedo-Serrano](#) (Spain)¹, Beatriz Castillo-Vázquez (Spain)¹, Antonio García-Zambrana (Spain)¹, José María Garrido-Balsells (Spain)¹ (1. University of Málaga)

- 12:30pm
- TuE2.3 - A study on the optical power requirement of kilometer-range solar-blind NLOS communication links**
 » Xiaobin Sun (United Kingdom)¹, [Jonathan McKendry](#) (United Kingdom)², Gerald M. Bonner (United Kingdom)¹, Martin D. Dawson (United Kingdom)³ (1. Fraunhofer Centre for Applied Photonics, 2. Institute of Photonics, Department of Physics, University of Strathclyde, 3. University of Strathclyde)
- 12pm
- TuF2: Optical Fiber Sensing**
 Chaired by: Kevin Chen (United States) and Giovanni Milione (United States)
- 12pm
- TuF2.1 - Tactile Perception in Robots via Stretchable Photonics (Invited)**
 » [Robert Shepherd](#) (United States)¹ (1. Cornell University)
- 12:30pm
- TuF2.2 - Transportation Infrastructure Safety Improvement with Optical Fiber Distributed Sensing**
 » [Fabien Ravet](#) (Switzerland)¹, Alexandre Goy (Switzerland)², Etienne Rochat (Switzerland)³ (1. Omnisens, 2. Omni, 3. Omnisen)
- 12:45pm
- TuF2.3 - Polarization-independent Brillouin optical correlation domain analysis based on orthogonal probe sidebands**
 » [Jae Hyeong Youn](#) (Korea, Republic of)¹, Kwang Yong Song (Korea, Republic of)¹ (1. Chung-Ang university)
- 1pm
- TuF2.4 - Multimode fiber length dependence on spectral properties and sensitivity of single-multi-single mode (SMS) fiber combination**
 » [Koustav Dey](#) (India)¹, Sukanya Choudhary (India)¹, Dinakar D (India)¹, Sourabh Roy (India)¹ (1. NIT WARANGAL, INDIA)
- 1:15pm
- TuF2.5 - Long period grating coated with graphene oxide as platform for optical fiber biosensors**
 » [Flavio Esposito](#) (Italy)¹, Lucia Sansone (Italy)², ANUBHAV SRIVASTAVA (Italy)¹, Francesco Baldini (Italy)², Stefania Campopiano (Italy)¹, Francesco Chiavaioli (Italy)², Michele Giordano (Italy)², Ambra Giannetti (Italy)², Agostino Iadicicco (Italy)¹ (1. University of Naples Parthenope, 2. National Research Council of Italy (CNR))



Continued from Tuesday, 19 October

12pm **TuG2: Microcavity Devices and Physics**
Chaired by: Kiyoul Yang (United States) and William Loh (United States)

12pm **TuG2.1 - Microcavity-enhanced Surface Nonlinear Optics (Invited)**
» [Yun-Feng Xiao](#) (China)¹ (1. Peking University)

12:30pm **TuG2.2 - Electrically Tunable Graphene Organic Hybrid Ring Resonators**
» [Ping Ma](#) (Switzerland)¹, Xinzhi Zhang (Switzerland)¹, Wolfgang Heni (Switzerland)², Nikolaus Floery (Switzerland)³, Tatsuhiko Watanabe (Switzerland)¹, Messner Andreas (Switzerland)¹, Alexandros Emboras (Switzerland)⁴, Patric Habegger (Switzerland)², Bojun Cheng (Switzerland)¹, Maurizio Burla (Switzerland)¹, Novotny Lukas (Switzerland)³, Delwin Elder (United States)⁵, Larry Dalton (United States)⁵, Giacomo Indiveri (Switzerland)⁶, Juerg Leuthold (Switzerland)¹ (1. Institute of Electromagnetic Fields, ETH Zurich, 2. Polariton Technologies Ltd, 3. Photonics Laboratory, ETH Zurich, 4. Integrated Systems Laboratory, ETH Zurich, 5. Department of Chemistry, University of Washington, 6. Institute of Neuroinformatics, University of Zurich and ETH Zurich)

12:45pm **TuG2.3 - High-Q Slot-Waveguide-Based Ring Resonator on a 3C-SiC-on-Insulator Platform for Ultrasensitive Sensing Applications**
» [Xi Wu](#) (United States)¹, Tianren Fan (United States)¹, Ali A. Eftekhar (United States)¹, Amir H. Hosseinnia (United States)¹, Ali Adibi (United States)¹ (1. Georgia Institute of Technology)

1pm **TuG2.4 - Impact of devices manufacturing variability on the spectral parameters of silicon ring resonators**
» [Giuseppe Giannuzzi](#) (Italy)¹, Paolo Bardella (Italy)² (1. Dipartimento Interateneo di Fisica, Politecnico di Bari, via Amendola 173, 70126 Bari, Italy, 2. Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, corso Duca degli Abruzzi 24, 10129 Torino, Italy)

1:15pm **TuG2.5 - Enhancing self-assembled colloidal quantum dot microsphere lasers**
» [Pedro Alves](#) (United Kingdom)¹, Dimitars Jevtics (United Kingdom)¹, Michael J. Strain (United Kingdom)¹, Martin D. Dawson (United Kingdom)¹, Nicolas Laurand (United Kingdom)¹ (1. Institute of Photonics, Department of Physics, University of Strathclyde)

12pm **TuH2: Detectors Based on Novel Materials**
Chaired by: Gary Wicks (United States) and Paul Simmonds (United States)

12pm **TuH2.1 - Assembly and optoelectronic properties of perovskite nanocrystal superstructures (Invited)**
» [Peter Schall](#) (Netherlands)¹ (1. University of Amsterdam)

12:30pm **TuH2.4 - An investigation on InP-based thin film photo-sensors with colloidal quantum dots**
» Sheng-Feng Kao (Taiwan)¹, Yu-Ming Huang (Taiwan)², Sheng-Kai Huang (Taiwan)³, Shao-Yi Weng (Taiwan)³, Hao-Chung Kuo (Taiwan)⁴, [Chien-Chung Lin](#) (Taiwan)³ (1. Institute of Imaging and Biomedical Photonics, National Chiao Tung University, Tainan 71150, Taiwan, 2. Institute of Photonic System, National Chiao Tung University, Tainan, 3. Institute of Photonic System, National Chiao Tung University, Tainan 71150, Taiwan, 4. Department of Photonics National Yang Ming Chiao Tung University)

6pm **TuA3: Novel Sensing Techniques**
Chaired by: Jiawen Li (Australia) and Jung-Hoon Park (Korea, Republic of)

6pm **TuA3.1 - Microtoroid optical sensing technologies for biomedical applications (Invited)**
» [Judith Su](#) (United States)¹ (1. University of Arizona)

6:30pm **TuA3.2 - Monitoring Human Blood Flow Dynamics with Quantitative Speckle Variance Optical Coherence Tomography**
» [ChunYen Chuang](#) (United States)¹, Michael Eggleston (United States)¹, Shreyas Shah (United States)¹ (1. Nokia Bell Labs)



Continued from Tuesday, 19 October

6:45pm **TuA3.3 - Wearable Noninvasive Glucose Estimation based on Multi-wavelength Reflective Photoplethysmography**
 » [Nguyen Mai Hoang Long](#) (Korea, Republic of)¹, Wan-Young Chung (Korea, Republic of)¹ (1. Pukyong National University)

6pm **TuB3: VCSELs and Single Frequency Lasers**
 Chaired by: Kent Choquette (United States)

6pm **TuB3.1 - Bragg waveguide DFB lasers**
 » [Bilal Janjua](#) (Canada)¹, Meng lu (Canada)¹, Paul Charles (Canada)¹, Eric Chen (Canada)¹, Amr Helmy (Canada)¹ (1. University of Toronto)

6:15pm **TuB3.2 - 4 W Single-Mode Operation of Surface Grating VCSELs**
 » [Ahmed Hassan](#) (Japan)¹, Xiadong Gu (Japan)², Masanori Nakahama (Japan)², Satoshi Shinada (Japan)³, Moustafa Ahmed (Egypt)⁴, Fumio Koyama (Japan)² (1. Institute of Innovative Research, Tokyo Institute of Technology, 2. Institute of Innovative Research, Tokyo Institute of Technology, 4259-R2-22, Nagatsuta-cho, Midori-ku, Yokohama, 226-8503, 3. National Institute of Information and Communications Technology, 4-2-1, Nukui-Kitamachi, Koganei, Tokyo 184-8795, 4. Department of Physics, Faculty of Science, Minia University, 61519 Minia)

6:30pm **TuB3.3 - 30 GHz Highly Damped Oxide Confined Vertical-Cavity Surface-Emitting Laser**
 » [Yun-Cheng Yang](#) (Taiwan)¹, Hao-Tien Cheng (Taiwan)², Chao-Hsin Wu (Taiwan)³ (1. Graduate Institute of Photonics and Optoelectronics, National Taiwan University, 2. Graduate Institute of Electronics Engineering, National Taiwan University, 3. Graduate Institute of Photonics and Optoelectronics & Graduate Institute of Electronics Engineering, National Taiwan University)

6:45pm **TuB3.4 - Sub-mA Threshold Current Vertical Cavity Surface Emitting Lasers with a Simple Fabrication Process**
 » [Jack Baker](#) (United Kingdom)¹, Sara-Jayne Gillgrass (United Kingdom)¹, Craig P. Allford (United Kingdom)¹, Curtis Hentschel (United Kingdom)², J. Iwan Davies (United Kingdom)³, Samuel Shutts (United Kingdom)¹, Peter M. Smowton (United Kingdom)¹ (1. Cardiff University, 2. Cardiff, 3. IQE plc.)

7pm **TuB3.5 - Gain Measurements on Vertical Cavity Surface Emitting Laser Material Using Segmented Contact Technique**
 » [Curtis Hentschel](#) (United Kingdom)¹, Craig P. Allford (United Kingdom)¹, Sara-Jayne Gillgrass (United Kingdom)¹, Zhibo Li (United Kingdom)¹, Josie Nabialek (United Kingdom)¹, Richard Forrest (United Kingdom)¹, Jack Baker (United Kingdom)¹, David G. Hayes (United Kingdom)¹, Wyn Meredith (United Kingdom)², J. Iwan Davies (United Kingdom)³, Samuel Shutts (United Kingdom)¹, Peter M. Smowton (United Kingdom)¹ (1. Cardiff University, 2. Compound Semiconductor Centre, 3. IQE plc.)

7:15pm **TuB3.6 - Use of Inverse-Fourier Design Method for Index-Patterned Laser Design**
 » [Niall Boohan](#) (Ireland)¹, Eoin O'Reilly (Ireland)² (1. Tyndall National Institute & University College Cork, 2. Tyndall National Institute)

6pm **TuC3: Periodic Structures/Light Matter Interactions**
 Chaired by: Michelle Povinelli (United States)

6pm **TuC3.1 - Dipolar quantum emitters in van der Waals heterostructures (Invited)**
 » [Ajit Srivastava](#) (United States)¹ (1. Emory University)

6:30pm **TuC3.2 - Photonic BICs in Si structures with Ge self-assembled quantum dots**
 » [Dmitry Yurasov](#) (Russian Federation)¹, Sergey Dyakov (Russian Federation)², Margarita Stepikhova (Russian Federation)¹, Artem Yablonskiy (Russian Federation)¹, Andrey Bogdanov (Russian Federation)³, Nikolay Gippius (Russian Federation)², Sergei Tikhodeev (Russian Federation)⁴, Alexey Novikov (Russian Federation)¹, Zakhary Krasilnik (Russian Federation)¹ (1. Institute for Physics of Microstructures Russian Academy of Sciences, 2. Skolkovo Institute of Science And Technology, 3. Department of Physics and Engineering ITMO University, 4. M.V.Lomonosov Moscow State University)

6:45pm **TuC3.3 - Full 2π phase shift from single and double layer photonic crystal slabs**
 » [Zhonghe Liu](#) (United States)¹, Mingsen Pan (United States)¹, Cheng Guo (United States)¹, Yuze Sun (United States)¹, Michael Vasilyev (United States)¹, Weidong Zhou (United States)¹ (1. University of Texas at Arlington)



Continued from Tuesday, 19 October

7pm
TuC3.4 - Extreme ultraviolet laser ablation mass spectrometry for chemical mapping at the nanoscale
 » [Lydia Rush](#) (United States)¹, John Cliff (United States)², Dallas Reilly (United States)², Andrew Duffin (United States)², Carmen Menoni (United States)¹ (1. Colorado State University, 2. Pacific Northwest National Laboratory)

7:15pm
TuC3.5 - Photonic Crystal Nanobeam Cavities with Lateral Fins
 » [Zhonghe Liu](#) (United States)¹, Yudong Chen (United States)¹, Xiaochen Ge (United States)¹, Weidong Zhou (United States)¹ (1. University of Texas at Arlington)

7:30pm
TuC3.6 - Bright and Dark Exciton Polaritons in an Ultrastrongly Coupled Carbon Nanotube Microcavity (Invited)
 » [Michael Arnold](#) (United States)¹ (1. University of Wisconsin, Madison)

6pm
TuD3: Preparation and Manipulation of Quantum States
 Chaired by: Boulat Bash (United States) and Michael Brodsky (United States)

6pm
TuD3.1 - Nonlinear nanophotonics for quantum networks (Invited)
 » [Kartik Srinivasan](#) (United States)¹ (1. National Institute of Standards and Technology)

6:30pm
TuD3.2 - Tunable, High Purity Two-Photon Interference From Independent Sources On a Silicon Photonic Chip
 » [John Serafini](#) (United States)¹, Matthew van Niekirk (United States)¹, Michael Fanto (United States)², Stefan Preble (United States)¹ (1. Rochester Institute of Technology, 2. Air Force Research Laboratory)

6:45pm
TuD3.3 - Remote State Preparation in a Reconfigurable Quantum Local Area Network
 » [Muneer Alshoukan](#) (United States)¹, Brian Williams (United States)¹, Philip Evans (United States)¹, Nageswara Rao (United States)¹, Emma Simmerman (United States)², Hsuan-Hao Lu (United States)³, Navin Lingaraju (United States)³, Andrew Weiner (United States)³, Claire Marvinney (United States)¹, Yun-Yi Pai (United States)¹, Benjamin Lawrie (United States)¹, Nicholas Peters (United States)¹, Joseph Lukens (United States)¹ (1. Oak Ridge National Laboratory, 2. Oak Ridge National Laboratory, Stanford University, 3. Purdue University)

7pm
TuD3.4 - Quantum state engineering with integrated nonlinear photonics (Invited)
 » [Linran Fan](#) (United States)¹ (1. University of Arizona)

6pm
TuE3: High Capacity Enablers
 Chaired by: Xin Jiang (United States) and Youichi Akasaka (United States)

6pm
TuE3.1 - Nobel Functions of Multicore EDFA (Invited)
 » [Koichi Maeda](#) (Japan)¹, Shigehiro Takasaka (Japan)¹, Ryuichi Sugizaki (Japan)¹ (1. Furukawa Electric Co., Ltd.)

6:30pm
TuE3.2 - Optimized SVM constellations for SDM fibers
 » [Eric Fink](#) (United States)¹, Jaroslaw Kwapisz (United States)¹, Ioannis Roudas (United States)¹ (1. Montana State University)

6:45pm
TuE3.3 - Simplified Nodes with Low Complexity ROADMs for Ultra-High-Capacity Networks
 » [Md Nooruzzaman](#) (Canada)¹, Xavier Fernando (Canada)¹ (1. Ryerson University)

7pm
TuE3.4 - Enabling Technologies of Forward Pumping Distributed Raman Amplification (Invited)
 » [Rongqing Hui](#) (United States)¹, Govind Vedala (United States)¹, Arin Dutta (United States)¹, Youichi Akasaka (United States)², Paparao Palacharla (United States)² (1. University of Kansas, 2. Fujitsu Network Communications)

Continued from **Tuesday, 19 October**

- 6pm **TuF3: Photonics Awards I**
Chaired by: Weidong Zhou (United States) and Dominique Dagenais (United States)
- 6pm **TuF3.1 - Controlling laser dynamics for parallel random number generation (Aron Kressel Award)**
» [Hui Cao](#) (United States)¹ (1. Yale University)
- 6:30pm **TuF3.2 - An Electro-Optic Laser Frequency Comb for Precision Astronomical Spectroscopy (Laser Instrumentation Award)**
» [Connor Fredrick](#) (United States)¹, [Scott Diddams](#) (United States)¹, [Andrew Metcalf](#) (United States)² (1. NIST - University of Colorado, 2. Air Force Research Laboratory)
- 7pm **TuF3.3 - Modulating Lasers Faster and More Efficiently (Young Investigator Award)**
» [Xi Vivian Chen](#) (United States)¹ (1. Nokia Bell Labs)
- 6pm **TuG3: Microresonator Frequency Combs**
Chaired by: William Loh (United States) and Andrey Matsko (United States)
- 6pm **TuG3.3 - Chi-2 Turing-Rolls in Microresonators**
» [Vladislav Pankratov](#) (United Kingdom)¹, [Danila Puzyrev](#) (United Kingdom)¹, [Alberto Villois](#) (United Kingdom)¹, [Dmitry Skryabin](#) (United Kingdom)¹ (1. University of Bath)
- 6:15pm **TuG3.4 - Laser Self-Injection Locking and Thermal Effects Compensation for Frequency Comb Generation**
» [Nikita Kondratiev](#) (Russian Federation)¹, [Valery Lobanov](#) (Russian Federation)¹ (1. Russian Quantum Center)
- 6pm **TuH3: Co-packaging for Data Center Interconnects**
Chaired by: Jaime Cardenas (United States) and Jock Bovington (United States)

- 6pm **TuH3.1 - Modulation Optimization for 102T Co-Packaged Switch with 800Gbps Optical Interfaces (Invited)**
» [Jeffrey Rahn](#) (United States)¹, [Thang Pham](#) (United States)¹, [Christopher Berry](#) (United States)¹, [Absar Ulhassan](#) (United States)¹, [Yishen Huang](#) (United States)¹, [Rob Stone](#) (United States)¹, [James Stewart](#) (United States)¹ (1. Facebook)
- 6:30pm **TuH3.2 - Co-packaged optics for hyperscale data center networks (Invited)**
» [Brad Booth](#) (United States)¹ (1. Microsoft)
- 7pm **TuH3.3 - A 50 Gbps 9.5 pJ/bit VCSEL-based Optical Link**
» [Aaron Maharry](#) (United States)¹, [Luis Valenzuela](#) (United States)¹, [Hector Andrade](#) (United States)¹, [Itshak Kalifa](#) (Israel)², [Isabelle Cestier](#) (Israel)², [Matan Galanty](#) (Israel)², [Boaz Atias](#) (Israel)², [Anna Sandomirsky](#) (Israel)², [Elad Mentovich](#) (Israel)², [Larry Coldren](#) (United States)¹, [James Buckwalter](#) (United States)¹, [Clint Schow](#) (United States)¹ (1. UC Santa Barbara, 2. Nvidia)
- 7:15pm **TuH3.4 - High Speed Ethernet Transmission over Multicore Fibers for Data Center Applications**
» [yi sun](#) (United States)¹, [Robert Lingle](#) (United States)¹, [Daryl Inniss](#) (United States)¹, [Roman Shubochkin](#) (United States)¹ (1. OFS Fitel LLC)
- 8pm **TuB4: III-Nitride Lasers - I**
Chaired by: Nelson Tansu (Australia) and Hongping Zhao (United States)
- 8pm **TuB4.1 - GaN Based Laser Diodes for Energy Efficient Solid State Lighting and Displays (Invited)**
» [Steve DenBaars](#) (United States)¹ (1. UCSB Materials Department)
- 8:30pm **TuB4.2 - Inverse Design of InGaN/GaN Quantum Wells**
» [Wen Liang](#) (United States)¹, [Onoriode Ogidi-Ekoko](#) (United States)¹, [Hanlin Fu](#) (United States)¹, [Nelson Tansu](#) (Australia)² (1. Lehigh University, 2. The University of Adelaide)



Continued from **Tuesday, 19 October**

8:45pm **TuB4.3 - Neuromorphic Image Processing with a VCSEL Neuron**
 » [Joshua Robertson](#) (United Kingdom)¹, Paul Kirkland (United Kingdom)¹, Juan Alanis (United Kingdom)¹, Matej Hejda (United Kingdom)¹, Julian Bueno (United Kingdom)¹, Gaetano Di Caterina (United Kingdom)¹, Antonio Hurtado (United Kingdom)¹ (1. University of Strathclyde)

9pm **TuB4.4 - Development of blue VCSELs with highly reflective nanoporous GaN DBRs (Invited)**
 » [Jin-Ho Kang](#) (United States)¹, Rami Elafandy (United States)¹, [Jung Han](#) (United States)¹ (1. Department of Electrical Engineering, Yale University)

8pm **TuC4: Plasmonics**
 Chaired by: Rajesh Menon (United States) and Junsuk Rho (Korea, Republic of)

8pm **TuC4.1 - Angle Independent Plasmonic Circular Polarizers**
 » [Junyan Zheng](#) (China)¹, XIN HE (China)¹, Xu Liu (China)¹, Xiang Hao (China)¹ (1. Zhejiang University)

8:15pm **TuC4.2 - Polarization-dependent plasmonic field enhancement in core-shell hetero-dimer**
 » [Mohammad Habibur Rahaman](#) (United States)¹, Tamal Sarkar (United States)² (1. University of Maryland, 2. VoltServer Inc.)

8:30pm **TuC4.3 - Impact of carrier mobility and lifetime on the potential performance of a plasmonic detector**
 » [Samantha Lubaba Noor](#) (United States)¹, Ashwyn Srinivasan (Belgium)², Christian Haffner (Belgium)², Kristiaan De Greve (Belgium)², Pol Van Dorpe (Belgium)², Dennis Lin (Belgium)², Francky Catthoor (Belgium)², Azad Naeemi (United States)¹ (1. Georgia Institute of Technology, 2. Imec)

8:45pm **TuC4.4 - Planar Multilayer Window Coating for Passive Thermal Management of Buildings**
 » [Muhammad Asad](#) (Canada)¹, Muhammad Alam (Canada)¹ (1. Queen's University)

9pm **TuC4.5 - A bioinspired hybrid light-trapping structure and its fabrication for thin-film solar cells**
 » shengjie zhai (United States)¹, [Yihong Zhao](#) (United States)¹, Ming Zhu (United States)¹, Hui Zhao (United States)¹ (1. University of Nevada Las Vegas)

9:15pm **TuC4.6 - Tailoring optical properties of "origami" graphene-covered photonic gratings**
 » [Ken Araki](#) (United States)¹, Richard Zhang (United States)¹ (1. University North Texas)

8pm **TuF4: Space Division Multimode Optical Fibers**
 Chaired by: Nicolas Fontaine (United States) and Rodrigo Amezcua Correa (United States)

8pm **TuF4.1 - Time reversed optical waves by arbitrary vector spatiotemporal field generation (Invited)**
 » Mickael Mounaix (Australia)¹, Nicolas Fontaine (United States)², David Neilson (United States)², Roland Ryf (United States)², Haoshuo Chen (United States)², Juan Carlos Alvarado-Zacarias (United States)², [Joel Carpenter](#) (Australia)¹ (1. The Univesity of Queensland, 2. Nokia Bell Labs)

8:30pm **TuF4.2 - Pulse Shaping of Multi-Mode Signals (Invited)**
 » [Mikael Mazur](#) (United States)¹, Nicolas Fontaine (United States)¹, Haoshuo Chen (United States)¹, Roland Ryf (United States)¹, David Neilson (United States)¹ (1. Nokia Bell Labs)

9pm **TuF4.3 - Mitigation of Intra-Modal-Group Power Coupling of Few-Mode Fiber (Invited)**
 » [Alan Willner](#) (United States)¹ (1. University of Southern California)

8pm **TuG4: Microcombs and Applications**
 Chaired by: Shu-Wei Huang (United States) and Xu Yi (United States)

8pm **TuG4.1 - Nonlinear microresonators for optical atomic clocks and coherent control (Invited)**
 » [Kartik Srinivasan](#) (United States)¹ (1. National Institute of Standards and Technology)



Continued from **Tuesday, 19 October**

- 8:30pm **TuG4.2 - Optical Division of an Octave-Spanning Comb on an All-Silicon Nitride Platform**
 » Cong Wang (United States)¹, [Nathan O'Malley](#) (United States)¹, Zhichao Ye (Sweden)², Mohammed Alshaykh (Saudi Arabia)³, Marcello Girardi (Sweden)², Abdullah Al Noman (United States)¹, Daniel Leaird (United States)¹, Minghao Qi (United States)¹, Victor Torres-Company (Sweden)², Andrew Weiner (United States)¹ (1. Purdue University, 2. Chalmers university of technology, 3. King Saud University)
- 8:45pm **TuG4.3 - Microresonator-based squeezed optical frequency comb**
 » [Zijiao Yang](#) (United States)¹, Mandana Jahanbozorgi (United States)¹, Dongjin Jeong (Korea, Republic of)², Shuman Sun (United States)¹, Olivier Pfister (United States)¹, Hansuek Lee (Korea, Republic of)², Xu Yi (United States)¹ (1. University of Virginia, 2. Korea Advanced Institute of Science and Technology)
- 9pm **TuG4.4 - On-chip time and frequency modes for the generation and processing of complex photon states (Invited)**
 » [Stefania Sciara](#) (Canada)¹, Hao Yu (Canada)¹, Mario Chemnitz (Canada)¹, Bennet Fischer (Canada)¹, Piotr Roztocky (Canada)¹, Benjamin Crockett (Canada)¹, Christian Reimer (United States)², Brent Little (China)³, Sai T. Chu (Hong Kong)⁴, Lucia Caspani (United Kingdom)⁵, William Munro (Japan)⁶, David J. Moss (Australia)⁷, Michael Kues (Germany)⁸, Jose Azana (Canada)¹, Zhiming Wang (China)⁹, Roberto Morandotti (Canada)¹ (1. Institut National de la Recherche Scientifique, Centre Énergie, Matériaux et Télécommunications (INRS-EMT) Québec, Canada, 2. HyperLight Corporation, 3. University of Chinese Academy of Sciences, 4. Hong Kong university of science and technology, 5. Institute of Photonics, Department of Physics, University of Strathclyde, 6. NTT Basic Research Labs, 7. Swinburne University of Technology, 8. Leibnitz University of Hannover, 9. University of Science and Technology of China)
- 8pm **TuH4: Advances in IR Detectors**
 Chaired by: Ganesh Balakrishnan (United States)
- 8pm **TuH4.1 - Antimonide-Based Avalanche Photodiodes on InP Substrates (Invited)**
 » [Sanjay Krishna](#) (United States)¹ (1. Ohio State University)

- 8:30pm **TuH4.2 - High-speed type-II superlattice photodetectors (Invited)**
 » [Baile Chen](#) (China)¹ (1. ShanghaiTech University)
- 9pm **TuH4.3 -Infrared AllInAsSb digital alloy nBn photodetectors**
 » [Renjie Wang](#) (United States)¹, Dekang Chen (United States)¹, J. Andrew McArthur (United States)², Xingjun Xue (United States)¹, Andrew Jones (United States)¹, Seth Bank (United States)², Joe Campbell (United States)¹ (1. University of Virginia, 2. The University of Texas at Austin)
- 9:15pm **TuH4.4 - Modeling Photocurrent Spectra of High-Indium-Content InN/InGaN Disk-in-Wire Photodiodes**
 » [Fu-Chen Hsiao](#) (United States)¹, Arnab Hazari (United States)², Pallab Bhattacharya (United States)², Yia-Chung Chang (Taiwan)³, John M. Dallesasse (United States)¹ (1. University of Illinois at Urbana-Champaign, 2. University of Michigan, Ann Arbor, 3. Academia Sinica)

Wednesday, 20 October

- 10am **WA1: Plenary Session II**
 Chaired by: Christina Lim (Australia) and Weidong Zhou (United States)
- 10am **WA1.1 - Photon Localisation and Bloch Symmetry Breaking in Luminal Gratings (Plenary)**
 » [John Pendry](#) (United Kingdom)¹, Emanuele Galiffi (United Kingdom)¹, Mario Silveirinha (Portugal)², Paloma Huidobro (Portugal)² (1. Imperial College London, 2. Instituto Superior Técnico-University of Lisbon)
- 10:45am **WA1.2 - Multimode Fiber Optics and Applications (Plenary)**
 » [Hui Cao](#) (United States)¹ (1. Yale University)
- 12pm **WA2: Novel Microscopy Techniques**
 Chaired by: Marinko Sarunic (United Kingdom) and Liang Gao (United States)
- 12pm **WA2.1 - Live-Cell Imaging with Light-Field Microscopy (Invited)**
 » [Shu Jia](#) (United States)¹ (1. Georgia Institute of Technology)

Continued from **Wednesday, 20 October**

- 12:30pm **WA2.2 - Multi-modal Laser Emission Microscopy towards Cancer Diagnosis (Invited)**
 » [Xudong Fan](#) (United States)¹, Yun-Lu Sun (United States)¹ (1. University of Michigan)
- 1pm **WA2.3 - Active optical mapping for high-speed and hyperspectral imaging**
 » [jongchan park](#) (United States)¹, Xiaohua Feng (United States)¹, Rongguang Liang (United States)², Liang Gao (United States)¹ (1. Department of Bioengineering, University of California, Los Angeles, 2. College of Optical Sciences, The University of Arizona)
- 1:15pm **WA2.4 - Progress on Bimodal Adaptive Optics OCT and Two-Photon Imaging**
 » [William Newberry](#) (Canada)¹, Laura Vargas (Canada)¹, Marinko Sarunic (Canada)¹ (1. Simon Fraser University)
- 12pm **WB2: Integrated Photonics**
 Chaired by: John Bowers (United States) and Hagen Zimer (United States)
- 12pm **WB2.1 - Classical and Quantum Integrated Silicon Photonics (Tutorial)**
 » [Lorenzo Pavesi](#) (Italy)¹ (1. University of Trento)
- 12:45pm **WB2.2 - Widely Tunable Laser with a 1X3 Multi-mode Interferometer based on a Generic Photonic Integration Platform**
 » [Pengli An](#) (Denmark)¹, Martijn J.R. Heck (Netherlands)² (1. Aarhus University, 2. EINDHOVEN UNIVERSITY OF TECHNOLOGY)
- 1pm **WB2.3 - 3D photonic devices and optics (Invited)**
 » Alexander Littlefield (United States)¹, Corey Richards (United States)¹, Christian Ocier (United States)¹, Dajie Xie (United States)¹, Haibo Gao (United States)¹, Jack Huang (United States)¹, Ujaan Purakayastha (United States)¹, Xizheng Fang (United States)¹, Paul Braun (United States)¹, [Lynford Goddard](#) (United States)¹ (1. University of Illinois at Urbana-Champaign)

- 12pm **WC2: Microwave Photonic Signal Processing**
 Chaired by: David Moilanen (United States) and Charles Middleton (United States)
- 12pm **WC2.1 - Photonic crystal fibers for microwave signal processing (Invited)**
 » Sabahat Shaheen (Germany)¹, Itandehui Gris-Sánchez (Spain)², [Ivana Gasulla](#) (Spain)² (1. Bundesanstalt für Materialforschung und -prüfung, 2. Universitat Politècnica de València)
- 12:30pm **WC2.2 - Sparse Optical Arbitrary Waveform Measurement by Compressive Sensing**
 » [mehmet berkay on](#) (United States)¹, Humphry Chen (United States)¹, Roberto Proietti (United States)¹, S.J. Ben Yoo (United States)¹ (1. UCDAVIS)
- 12:45pm **WC2.3 - Multi-band Real-time Spectral Analysis of High-frequency Broadband Waveforms**
 » [SAIKRISHNA REDDY KONATHAM](#) (Canada)¹, Jose Azana (Canada)¹ (1. Institut National de la Recherche Scientifique, Centre Énergie, Matériaux et Télécommunications (INRS-EMT) Québec, Canada)
- 1pm **WC2.4 - Group delay-based wideband photonic receive-mode RF beamforming (Invited)**
 » [Keith Williams](#) (United States)¹, Joseph Singley (United States)¹, Matthew Mondich (United States)¹, Christopher Sunderman (United States)¹, Ian Maize (United States)¹ (1. Unites States Naval Research Laboratory)
- 12pm **WD2: Emerging Material Platforms**
 Chaired by: Robert Halir (Spain)
- 12pm **WD2.1 - Sputter-deposited PZT-on-Silicon electro-optic modulator**
 » [Suraj Singh](#) (India)¹, Shankar Kumar Selvaraja (India)¹ (1. Indian Institute of Science)
- 12:15pm **WD2.2 - Structured Surfaces for Frequency Control and Antenna Gain Enhancement**
 » [Garima Ioshi](#) (India)¹, R Vijaya (India)¹ (1. IIT Kanpur)



Continued from **Wednesday, 20 October**

- 12:30pm **WD2.3 - Polaritonic metasurfaces (Invited)**
 » [Andrea Alu](#) (United States)¹ (1. CUNY Advanced Science Research Center)
- 1pm **WD2.4 - Fabrication of Borosilicate glass surface waveguides using a pulsed CO2 Laser**
 » [Javed Ali](#) (United States)¹, Christi Madsen (United States)² (1. Texas A&M university, 2. Texas A&M University)
- 1:15pm **WD2.5 - Hybrid Polymers for Gradient Refractive Index Lens Fabrication**
 » [Omena Okpowe](#) (United States)¹, Andriy Durygin (United States)¹, Vadym Drozd (United States)¹, Temitayo Olowu (United States)², Nezh Pala (United States)², Chunlei Wang (United States)¹ (1. Department of Materials and Mechanical Engineering, Florida International University, 2. Electrical and Computer Engineering Department, Florida International University)
- 12pm **WE2: Neural Networks and Digital Signal Processing**
 Chaired by: Dora Van Veen (United States) and Fatima Gunning (Ireland)
- 12pm **WE2.1 - Neural Networks for Optical Communications (Tutorial)**
 » [Christine Tremblay](#) (Canada)¹ (1. École de technologie supérieure)
- 12:45pm **WE2.2 - Spectral Spacing Estimation in Gridless Nyquist-WDM Systems using Local Binary Patterns**
 » [Alejandro Escobar Pérez](#) (Colombia)¹, Omar David Vargas Bonnet (Colombia)¹, Stephen E. Ralph (United States)², Jhon James Granada Torres (Colombia)¹ (1. Universidad de Antioquia, 2. Georgia)
- 1pm **WE2.3 - Probabilistic vs. Geometric Constellation Shaping: What are the keys to ultimate optical reach and capacity? (Invited)**
 » [Olga Vassilieva](#) (United States)¹, Inwoong Kim (United States)¹, Papparao Palacharla (United States)¹ (1. Fujitsu Network Communications Inc.)

- 12pm **WF2: Deep Tissue Imaging and Quantum Sensing I**
 Chaired by: Peter Munro (United Kingdom) and Zeev Zalevsky (Israel)
- 12pm **WF2.1 - Image transmission through a flexible multimode fiber by deep learning (Invited)**
 » Shachar Resisi (Israel)¹, Sébastien Popoff (France)², [Yaron Bromberg](#) (Israel)¹ (1. Racah Institute of Physics, The Hebrew University, 2. ESPCI Paris, PSL University, CNRS, Institut Langevin)
- 12:30pm **WF2.2 - Quantitative Phase recovery in ghost imaging (Invited)**
 » [Rakesh Kumar Singh](#) (India)¹, Vinu R V (China)², Ziyang Chen (China)³, Jixiong Pu (China)⁴ (1. Indian Institute of Technology (Banaras Hindu University), 2. College of Information Science and Engineering, Huaqiao University, 3. College of Information Science and Engineering, Huaqiao University, 4. Fujian Provincial Key Laboratory of Light Propagation and Transformation Huaqiao University)
- 1pm **WF2.3 - Deep learning strategies for imaging in scattering media (Invited)**
 » [Lei Tian](#) (United States)¹ (1. Boston University)
- 12pm **WG2: Modulators, Switches and Transmitters**
 Chaired by: Argishti Melikyan (United States)
- 12pm **WG2.1 - Advanced digital modulations for high-speed directly modulated lasers beyond 200 Gb/s (Invited)**
 » [Di Che](#) (United States)¹ (1. Nokia Bell Labs)
- 12:30pm **WG2.2 - A 100 Gb/s PAM4 Two-Segment Silicon Microring Resonator Modulator**
 » [Yuan Yuan](#) (United States)¹, Wayne V. Sorin (United States)¹, Zhihong Huang (United States)¹, Di Liang (United States)¹, Marco Fiorentino (United States)¹, Raymond G. Beausoleil (United States)¹ (1. Hewlett Packard Enterprise)
- 12:45pm **WG2.3 - A Silicon Photonic Ring-Assisted Mach-Zehnder Modulator with Strongly-Coupled Resonators**
 » [Ming Gong](#) (United States)¹, Lejie Lu (United States)¹, Wuxiucheng Wang (United States)¹, Hui Wu (United States)¹ (1. University of rochester)



Continued from **Wednesday, 20 October**

- 12pm **WH2: Novel mid-IR Ultrafast Laser Sources and Applications I**
Chaired by: François Légaré (Canada) and Martin Bernier (Canada)
- 12pm **WH2.1 - High Performance Ultrafast Fiber Lasers at 2µm Wavelength (Invited)**
» [Jens Limpert](#) (Germany)¹ (1. Institute of Applied Physics - University of Jena)
- 12:30pm **WH2.2 - 340 - 40,000 nm coherent light source (Invited)**
» [Lenard Vamos](#) (Spain)¹, [Jens Biegert](#) (Spain)¹ (1. ICFO-The Institute of Photonic Sciences)
- 1pm **WH2.3 - Mid-infrared (3-5 µm) Ultrafast Fe:ZnSe Laser Sources for Driving Extreme Nonlinear Optics (Invited)**
» [Fedor Potemkin](#) (Russian Federation)¹ (1. M.V.Lomonosov Moscow State University)
- 6pm **WA3: Applications of Optical Wavefront Shaping**
Chaired by: Liang Gao (United States) and Srivallesha Mallidi (United States)
- 6pm **WA3.1 - Imaging the brain at high spatiotemporal resolution (Tutorial)**
» [Na Ji](#) (United States)¹ (1. University of California, Berkeley)
- 7pm **WA3.2 - Localised all-optical detection of ultrasound through a multimode fibre using wavefront shaping**
» [Benjamin Keenlyside](#) (United Kingdom)¹, [Maxim Cherkashin](#) (United Kingdom)¹, [Dylan Marques](#) (United Kingdom)¹, [Peter Munro](#) (United Kingdom)¹, [Edward Zhang](#) (United Kingdom)¹, [Paul Beard](#) (United Kingdom)¹, [James Guggenheim](#) (United Kingdom)² (1. University College London, 2. University of Birmingham)

- 7:15pm **WA3.3 - High dynamic range imaging using a DMD**
» [Taeseong Woo](#) (Korea, Republic of)¹, [Hye Yun Kim](#) (Korea, Republic of)², [Su Yeon Kim](#) (Korea, Republic of)³, [Byungjae Hwang](#) (Korea, Republic of)¹, [Cheolwoo Ahn](#) (Korea, Republic of)¹, [Seok-Kyu Kwon](#) (Korea, Republic of)³, [Jae-Ick Kim](#) (Korea, Republic of)², [Jung-Hoon Park](#) (Korea, Republic of)¹ (1. Department of Biomedical Engineering, Ulsan National Institute of Science and Technology (UNIST), 2. Department of Biological Sciences, Ulsan National Institute of Science and Technology (UNIST), 3. Center for Functional Connectomics, Brain Science Institute, Korea Institute of Science and Technology (KIST))
- 6pm **WB3: High-Speed and Gain Switching Lasers**
Chaired by: Petter Westbergh (Sweden)
- 6pm **WB3.1 - Rin of gain-switched quantum-dot laser**
» [Nuran Dogru](#) (Turkey)¹, [Erkan Cengiz](#) (Turkey)¹, [Hilal Sultan Duranoglu Tunc](#) (Turkey)¹ (1. Gaziantep University)
- 6:15pm **WB3.2 - Gain-Switched Laser Properties at Self-injection Locking to a High-Q WGM Microresonator**
» [Artem Shitikov](#) (Russian Federation)¹, [Nikita Kondratiev](#) (Russian Federation)¹, [Evgeny Lonshakov](#) (Russian Federation)¹, [Ilya Gorelov](#) (Russian Federation)², [Valery Lobanov](#) (Russian Federation)¹, [Igor Bilenko](#) (Russian Federation)¹ (1. Russian Quantum Center, 2. Faculty of Physics M.V.Lomonosov Moscow State University)
- 6:30pm **WB3.3 - Short Pulse Generation from Gain-Switched Quantum Dot Laser**
» [Nuran Dogru](#) (Turkey)¹, [Hilal Sultan Duranoglu Tunc](#) (Turkey)¹, [Ali Mumtaz Al-Dabbagh](#) (Iraq)² (1. Gaziantep University, 2. Tishk International University)
- 6:45pm **WB3.4 - Modeling and Demonstration of 5-200 GHz photonic oscillations via optically-injected diode lasers**
» [Daniel Herrera](#) (United States)¹, [Kevin Tomkins](#) (United States)¹, [Constantinos Valagiannopoulos](#) (Kazakhstan)², [Luke Lester](#) (United States)¹, [Vassilios Kovanis](#) (United States)¹ (1. Virginia Tech, 2. Nazarbayev University)



Continued from **Wednesday, 20 October**

- 7pm **WB3.5 - Supermode dynamics for VCSEL Modulation**
 » [Kent Choquette](#) (United States)¹, Stephen E. Ralph (United States)², Alirio Melgar (United States)², Nusrat Jahan (United States)¹, William North (United States)¹, Jim Tatum (United States)³ (1. University of Illinois at Urbana-Champaign, 2. Georgia Institute of Technology, 3. Photon Sciences, Inc.)
- 6pm **WC3: Metamaterials and MetaOptics**
 Chaired by: Jennifer Choy (United States) and Prasad Iyer (United States)
- 6pm **WC3.1 - Volumetric meta-optics for novel device functionalities (Invited)**
 » [Andrei Faraon](#) (United States)¹, Gregory Roberts (United States)², Conner Ballew (United States)¹, Ian Foo (United States)¹ (1. California Institute of Technology, 2. California Institute of Technology)
- 6:30pm **WC3.2 - Enhanced Chiroptical Spectroscopy with Directed-Assembled Chiral Metamaterials (Invited)**
 » [Yuebing Zheng](#) (United States)¹ (1. The University of Texas at Austin)
- 7pm **WC3.3 - Quantum Sensing of Photonic Spin Density using a Single Nitrogen-Vacancy Center**
 » [Farid Kalhor](#) (United States)¹, Li-Ping Yang (China)², Leif Bauer (United States)¹, Zubin Jacob (United States)¹ (1. Purdue University, 2. Northeast Normal University)
- 7:15pm **WC3.4 - Predicting Long- and Variable-Distance Coupling Effects in Metasurface Optics**
 » [Xinhao Li](#) (United States)¹, Keisuke Kojima (United States)², Matt Brand (United States)² (1. MIT, 2. Mitsubishi Electric Research Labs)
- 6pm **WD3: Optomechanics and Acousto-optics**
 Chaired by: William Loh (United States)

- 6pm **WD3.2 - Acousto-optic modulation in lithium niobate on silicon nitride heterogeneous waveguides (Invited)**
 » [Siddhartha Ghosh](#) (United States)¹, Siva Yegnanarayanan (United States)², Matthew Ricci (United States)² (1. Northeastern University, 2. MIT Lincoln Laboratory)
- 6:30pm **WD3.3 - Low-cost Electrothermally Actuated MEMS Mirrors for High-Speed 3D Laser Scanning Applications**
 » [Bibek R Samanta](#) (United States)¹, Flavio Pardo (United States)¹, Rose Kopf (United States)¹, Michael Eggleston (United States)¹ (1. Nokia Bell Labs)
- 6pm **WE3: Integrated Photodetection Systems**
 Chaired by: Sarath Gunapala (United States)
- 6pm **WE3.1 - Ultraviolet Detectors and Systems for Space Exploration & Terrestrial Applications (Invited)**
 » [Shouleh Nikzad](#) (United States)¹ (1. NASA-Jet Propulsion Laboratory, California Institute of Technology)
- 6:30pm **WE3.2 - Waveguide-Integrated Blue Light Detector**
 » [Rachel Morgan](#) (United States)¹, Dave Kharas (United States)², Jeffrey Knecht (United States)², Paul Juodawlkis (United States)², Kerri Cahoy (United States)¹, Cheryl Sorace-Agaskar (United States)² (1. Department of Aeronautics and Astronautics, MIT, 2. MIT Lincoln Laboratory)
- 6:45pm **WE3.3 - Dispersive OPA at Very Near-Infrared Wavelengths**
 » [Sarvagya Dwivedi](#) (Belgium)¹, Mathias Prost (Belgium)¹, Tangla David Kongnyuy (Belgium)¹, Jon Kjellman (Belgium)¹, Xavier Rottenberg (Belgium)¹, Roelof Jansen (Belgium)¹, Wim Bogaerts (Belgium)², Marcus Dahlem (Belgium)¹ (1. Imec, 2. Ghent University - imec)
- 7pm **WE3.4 - Switchable PCM Optical Filter for Automotive Color-IR Imaging**
 » [Remona Heenkenda](#) (United States)¹, Andrew Sarangan (United States)¹, Keigo Hirakawa (United States)¹ (1. University of Dayton)

Continued from **Wednesday, 20 October**

7:15pm **WE3.5 - Modeling and Measurement of a HSQ Passivated UTC-PD with a 68.9 GHz Bandwidth**

» [Xiao Sun](#) (United Kingdom)¹, Shengwei Ye (United Kingdom)¹, James Seddon (United Kingdom)², Cyril C. Renaud (United Kingdom)³, Lianping Hou (United Kingdom)¹, John Marsh (United Kingdom)¹ (1. James Watt School of Engineering, University of Glasgow, 2. Department of Electronic and Electrical Engineering, 3. Department of Electronic and Electrical Engineering University College London)

6pm **WF3: Deep Tissue Imaging and Quantum Sensing II**

Chaired by: Nisan Ozana (United States)

6pm **WF3.1 - Quantum photonics for biological measurement quantitation (Invited)**

» [Ivan Burenkov](#) (United States)¹, Javier Sabines-Chesterking (United States)¹, Sergey Polyakov (United States)² (1. Joint Quantum Institute at NIST and UMD, 2. NIST)

6:30pm **WF3.2 - Diffuse Optics for Probing Oxygen Metabolism of Active Muscles (Invited)**

» [Yumie Ono](#) (Japan)¹, Mikie Nakabayashi (Japan)², Masashi Ichinose (Japan)¹ (1. Meiji University, 2. Meiji University, JSPS)

7pm **WF3.3 - Non-invasive assessment of cerebral autoregulation using diffuse correlation spectroscopy in extremely preterm infants (Invited)**

» [John Sunwoo](#) (United States)¹, Alexander I. Zavriyev (United States)¹, Kutlu Kaya (United States)¹, Tina Steele (United States)², Deborah Cuddyer (United States)², Terrie Inder (United States)², Maria Angela Franceschini (United States)¹, Mohamed El-Dib (United States)² (1. Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, 2. Department of Pediatric Newborn Medicine, Brigham and Women's Hospital, Harvard Medical School)

6pm **WG3: OI Workshop: Co-Packaged Optics, Near-Packaged Optics, or Neither?**

Chaired by: Jock Bovington (United States)

6pm **WH3: Novel Mid-IR Ultrafast Laser Sources and Applications II**

Chaired by: Martin Bernier (Canada) and François Légaré (Canada)

6pm **WH3.1 - Mid-infrared Laser Driven Tabletop X-ray Sources (Invited)**

» [Zenghu Chang](#) (United States)¹ (1. University of Central Florida)

6:30pm **WH3.2 - Dysprosium-Doped Silica Fiber as Saturable Absorber in a Mid-IR Fiber Laser**

» [Pascal Paradis](#) (Canada)¹, Vincent Fortin (Canada)¹, Stanislaw Trzesien (France)², Michèle Ude (France)², Bernard Dussardier (France)², Réal Vallée (Canada)¹, Martin Bernier (Canada)¹ (1. COPL, Université Laval, 2. Université de Nice Côte d'Azur, CNRS, Institut de Physique de Nice)

6:45pm **WH3.3 - High-energy 1-ns pulses from an erbium-doped fluoride fiber amplifier at 2.8 μm**

» [Yigit Ozan Aydin](#) (Canada)¹, Sébastien Magnan-Saucier (Canada)¹, Daiying Zhang (Canada)², Darren Kraemer (Canada)², Vincent Fortin (Canada)¹, Réal Vallée (Canada)¹, Martin Bernier (Canada)¹ (1. COPL, Université Laval, 2. Light Matter Interaction Inc.)

7pm **WH3.4 - The mechanisms and limitations to ultrashort pulse emission from mid-infrared fibre lasers (Invited)**

» [Stuart Jackson](#) (Australia)¹ (1. MQ Photonics, School of Engineering, Macquarie University)

8pm **WB4: III-Nitride Lasers - II**

Chaired by: Chee-Keong Tan (United States)

8pm **WB4.1 - Reducing the Threshold Current Density of Deep UV LDs on AlN Substrate (Invited)**

» [Maki Kushimoto](#) (Japan)¹, Ziyi Zhang (Japan)², Yoshio Honda (Japan)¹, Leo Schowalter (Japan)¹, Chiaki Sasaoka (Japan)¹, Hiroshi Amano (Japan)¹ (1. Nagoya University, 2. AsahiKasei Corporation)

8:30pm **WB4.2 - Gain Properties of Dilute-As InGaNAS Quantum Wells for Red-Emitting Lasers**

» [Hanlin Fu](#) (United States)¹, Wei Sun (United States)², Justin Goodrich (United States)¹, Damir Borovac (United States)¹, Chee-Keong Tan (United States)³, Nelson Tansu (Australia)⁴ (1. Lehigh University, 2. II-VI Incorporated, 3. Clarkson University, 4. The University of Adelaide)

Continued from **Wednesday, 20 October**

8:45pm **WB4.3 - Ultrafast parallel random number generation with a chip-scale semiconductor laser (Invited)**

» [Kyungduk Kim](#) (United States)¹, [Stefan Bittner](#) (France)², [Yongquan Zeng](#) (Singapore)³, [Stefano Guazzotti](#) (Ireland)⁴, [Ortwin Hess](#) (Ireland)⁴, [Qi Jie Wang](#) (Singapore)³, [Hui Cao](#) (United States)¹ (1. Yale University, 2. CentraleSupélec, 3. Nanyang Technological University, 4. Trinity College Dublin)

9:15pm **WB4.4 - AlGaIn Deep Ultraviolet LEDs and Laser Diodes (Invited)**

» [Zetian Mi](#) (United States)¹, [Ayush Pandey](#) (United States)¹, [Xianhe Liu](#) (United States)¹, [Yuanpeng Wu](#) (United States)¹ (1. University of Michigan)

8pm **WC4: Frequency Combs and Nonlinear Propagation**

Chaired by: [Jiro Itatani](#) (Japan) and [Martin Bernier](#) (Canada)

8pm **WC4.1 - Broadband Dispersion Optimization with a Differentiable Electromagnetic Modesolver**

» [Dodd Gray](#) (United States)¹, [Rajeev Ram](#) (United States)¹ (1. Massachusetts Institute of Technology)

8:15pm **WC4.2 - Four wave mixing with frequency combs in a highly nonlinear fiber**

» [Gautam Shaw](#) (India)¹, [Anil Prabhakar](#) (India)¹ (1. Indian Institute of Technology Madras)

8:30pm **WC4.3 - Multi-Frequency-Spaced Optical Comb Generation by Superposition of Purely Deeply Phase-Modulated Lights**

» [Takahide Sakamoto](#) (Japan)¹, [Akito Chiba](#) (Japan)² (1. Tokyo Metropolitan University, 2. Gunma University)

8:45pm **WC4.4 - All-Optical Modulation Format Conversion From DQPSK to OOK Using Cross-Polarization Modulation**

» [KOUKI IWAMA](#) (Japan)¹, [Hiroki Kishikawa](#) (Japan)¹, [Nobuo Goto](#) (Japan)¹, [Junichi Fujikata](#) (Japan)¹ (1. Tokushima University)

9pm

WC4.5 - Bandwidth expansion of 12.5-GHz-spaced laser frequency comb in near-infrared region by improving pulse compression magnification

» [Takuma Serizawa](#) (Japan)¹, [Takashi Kurokawa](#) (Japan)², [Yosuke Tanaka](#) (Japan)³, [Shigehiro Takasaka](#) (Japan)⁴, [Ryuichi Sugizaki](#) (Japan)⁴ (1. Tokyo University of Agriculture and Technology, National Astronomical Observatory of Japan, NINS□, 2. AstroBiology Center, National Institute of Natural Sciences, Tokyo University of Agriculture and Technology,, 3. Tokyo University of Agriculture and Technology, AstroBiology Center, National Institute of Natural Sciences, 4. Furukawa Electric Co., Ltd.)

8pm

WD4: Emerging Silicon PIC Technologies

Chaired by: [Shamsul Arafin](#) (United States)

8pm

WD4.1 - Neuromorphic Photonics for Intelligent Signal Processing (Invited)

» [Chaoran Huang](#) (United States)¹, [Thomas Ferreira de Lima](#) (United States)¹, [Alexander Tait](#) (United States)¹, [Bicky Marquez](#) (Canada)², [Bhavin Shastri](#) (Canada)³, [Paul Prucnal](#) (United States)¹ (1. Princeton University, 2. Queen's University, 3. Queen's University)

8:30pm

WD4.2 - Controlled phase change of GST-on-SOI for photonic neuromorphic application

» [Rakshitha Kallega](#) (India)¹, [Roopali Shekhawat](#) (India)¹, [Udaya Bhat K](#) (India)², [Ramesh Karuppattan](#) (India)¹, [Shankar Kumar Selvaraja](#) (India)¹ (1. Indian Institute of Science, 2. National Institute of Technology Karnataka)

8:45pm

WD4.3 - Photonic Wire Bonding for Integrated Photonics (Invited)

» [Lukas Chrostowski](#) (Canada)¹ (1. University of British Columbia)

8pm

WE4: Short-reach & Visible Light Communications

Chaired by: [Hai-Han Lu](#) (Taiwan) and [Xin Jiang](#) (United States)

8pm

WE4.1 - Performance Evaluation of DWDM Optical Transmission System Using Deep Learning Technique

» [Dhirendra Kumar Jha](#) (India)¹, [Jitendra K. Mishra](#) (India)¹ (1. Indian Institute of Information Technology Ranchi, 834010)



Continued from **Wednesday, 20 October**

- 8:15pm **WE4.2 - Deep learning for X-ray communication channel estimation in OFDM-PWM systems**
 » [Wenxuan Chen](#) (China)¹, Yunpeng Liu (China)¹, Junxu Mu (China)¹, Xiaobin Tang (China)¹ (1. Nanjing University of Aeronautics and Astronautics)
- 8:30pm **WE4.3 - A 400-Gb/s OWC System through the Free-Space Link with a Water-Air-Water Interface**
 » [Yu-Ting Chen](#) (Taiwan)¹, Yan-Yu Lin (Taiwan)¹, Chen-Xuan Liu (Taiwan)¹, Hai-Han Lu (Taiwan)¹ (1. National Taipei University of Technology)
- 8:45pm **WE4.4 - Interference-Suppressed Asymmetric Symbol Rate Transmission Over Single-wavelength Bidirectional PON**
 » [Sho Shibita](#) (Japan)¹, Daisuke Hisano (Japan)¹, Ken Mishina (Japan)¹, Akihiro Maruta (Japan)¹ (1. Osaka University)
- 9pm **WE4.5 - Security Aware Indoor Visible Light Communication**
 » [Mohammad Abrar Shakil Sejan](#) (Korea, Republic of)¹, Wan-Young Chung (Korea, Republic of)¹ (1. Pukyong National University)
- 8pm **WG4: Next Generation Optical Interconnects**
 Chaired by: Tingyi Gu (United States)
- 8pm **WG4.1 - Optical interconnects to chips - why and how (Tutorial)**
 » [David Miller](#) (United States)¹ (1. Stanford University)
- 8:45pm **WG4.2 - Ethernet Approaching the Terabit Era (Invited)**
 » [Matthew Traverso](#) (United States)¹ (1. Cisco)
- 9:15pm **WG4.3 - Additive manufacturing of reconfigurable two-wire plasmonic circuits for terahertz communications**
 » Yang Cao (Canada)¹, Hichem Guerboukha (Canada)¹, Kathirvel Nallappan (Canada)¹, [Guofu Xu](#) (Canada)¹, Maksim Skorobogatiy (Canada)¹ (1. Polytechnique Montreal)

Thursday, 21 October

- 10am **ThA1: Components, Subsystems and Integration Technologies**
 Chaired by: Molly Piels (United States)
- 10am **ThA1.1 - 3D printed microtoroid resonators and nested double spiral waveguides**
 » [Hongwei Gao](#) (Singapore)¹, George Chen (Singapore)¹, peng Xing (Singapore)¹, Juwon Choi (Singapore)¹, Dawn Tan (Singapore)¹ (1. Singapore university of technology and design)
- 10:15am **ThA1.2 - Multilayer Silicon Nitride Photonic Coupling System for Monolithic Integration of III/V Lasers**
 » [Yisu Yang](#) (China)¹, Xiaomin Ren (China)¹, Hao Zhao (China)¹ (1. Beijing University of Posts and Telecommunications)
- 10:30am **ThA1.3 - QWI based on group V inter-diffusion for SOA photonic integration**
 » Yi-jen Chiu (Taiwan)¹, [Jing Ya Chiu](#) (Taiwan)¹, Yang-Jeng Chen (Taiwan)¹, Bo-Hong Chen (Taiwan)¹, Yen-Hsiang Chang (Taiwan)¹, Rih-You Chen (Taiwan)¹, Cong-Long Chen (Taiwan)¹ (1. National Sun Yat-sen University)
- 10:45am **ThA1.4 - Sub-micron-accuracy automated position and rotation registration method for transferred devices (Best Student Paper Finalist)**
 » [Eleni Margariti](#) (United Kingdom)¹, Benoit Guilhabert (United Kingdom)², Dimitars Jevtics (United Kingdom)¹, Martin D. Dawson (United Kingdom)³, Michael J. Strain (United Kingdom)¹ (1. Institute of Photonics, Department of Physics, University of Strathclyde, 2. Institute of Photonics, Department of Physics, Univeristy of Strathclyde, 3. University of Strathclyde)



Continued from **Thursday, 21 October**

- 11am **ThA1.5 - Silicon and germanium photonic devices for sensing and communications (Invited)**
 » [Goran Mashanovich](#) (United Kingdom)¹, Chen Wei (United Kingdom)², Lauren Reid (United Kingdom)², Georgi Georgiev (United Kingdom)², Yanli Qi (United Kingdom)², Callum Stirling (United Kingdom)², Ahmed Osman (United Kingdom)², Yangbo Wu (United Kingdom)², Zhibo Qu (United Kingdom)², David Thomson (United Kingdom)³, Ke Li (United Kingdom)³, Jon Heffernan (United Kingdom)⁴, Kristian Groom (United Kingdom)⁴, Wei Cao (United Kingdom)³, Colin Mitchell (United Kingdom)², Milos Nedeljkovic (United Kingdom)² (1. Optoelectronics Research Centre, 2. Optoelectronics Research Centre, University of Southampton, UK, 3. Optoelectronics Research Centre, University of Southampton, 4. University of Sheffield)
- 10am **ThB1: Free Space Optics and Millimeter Wave Photonics**
 Chaired by: Atsushi Kanno (Japan) and John Mazurowski (United States)
- 10am **ThB1.1 - Analog optical generation and transport for 5G millimeter wave systems**
 » [Sreeraj S J](#) (India)¹, Deepa Venkitesh (India)¹, Ravinder David Koilpillai (India)¹, Ampalavanapillai Nirmalathas (Australia)² (1. Indian Institute of Technology Madras, 2. The University of Melbourne)
- 10:15am **ThB1.2 - Solid-State Lidar with Wide Steering Angle Using Counter-Propagating Beams**
 » [He Yuxuan](#) (China)¹, Qiang Wang (China)², Zhonghan Wang (China)¹, Xu Han (China)¹, Yuxi Fang (China)¹, Yang Yue (China)¹ (1. Institute of Modern Optics, Nankai University, 2. CTO Office, Angle AI (Tianjin) Technology Company Ltd)
- 10:30am **ThB1.3 - Experimental Demonstration of a 185 meters Vehicular Visible Light Communications Link**
 » [Alin Cailean](#) (Romania)¹, Catalin BEGUNI (Romania)¹, Sebastian Avatamanitei (Romania)¹, Mihai Dimian (Romania)¹ (1. Stefan cel Mare University of Suceava)

- 10:45am **ThB1.4 - Soliton microcombs: from dissipative structures to coherent LIDAR**
 » [Tobias Kippenberg](#) (Switzerland)¹ (1. Swiss Federal Institute of Technology, Lausanne (EPFL))
- 10am **ThC1: Light Conversion and Management**
 Chaired by: Noel Christopher Giebink (United States) and Lan Yang (United States)
- 10am **ThC1.1 - Spectrally Selective Nanophotonic Windows for Aiding Photosynthesis in Greenhouses**
 » [Ashish Kumar Chowdhary](#) (India)¹, Veluri Anurag Reddy (India)¹, Tanmay Bhowmik (India)¹, Debabrata Sikdar (India)¹ (1. Indian Institute of Technology Guwahati)
- 10:15am **ThC1.2 - Laser-induced Emission from Tamm Plasmon-activated Three-dimensional Photonic Crystal**
 » [Govind Kumar](#) (India)¹, R Vijaya (India)² (1. Indian Institute of Technology Kanpur, 2. IIT Kanpur)
- 10:30am **ThC1.3 - Multi-element Metagrating Design With Densely-connected Neural Networks**
 » [Soumyashree S. Panda](#) (India)¹, Harshul Tandan (India)¹, Ravi S. Hegde (India)¹ (1. Indian Institute of Technology, Gandhinagar)
- 10:45am **ThC1.4 - Minimally birefringent dual-mode waveguides on thin film lithium niobate**
 » [Archana Kaushalram](#) (India)¹, Srinivas Talabattula (India)¹ (1. Indian Institute of Science Bangalore)
- 11am **ThC1.5 - Guided-Mode Resonance based All-dielectric Optical Intensity Modulator**
 » [Tanmay Bhowmik](#) (India)¹, Ashish Kumar Chowdhary (India)¹, Aakash Kumar (India)¹, Debabrata Sikdar (India)¹ (1. Indian Institute of Technology Guwahati)
- 10am **ThD1: Spatiotemporal Effects in Fibers**
 Chaired by: Cosmin Blaga (United States)



Continued from **Thursday, 21 October**

- 10am **ThD1.1 - Spatiotemporal Modelocking in Multimode Fiber Lasers (Invited)**
 » [Frank Wise](#) (United States)¹ (1. Cornell University)
- 10:30am **ThD1.2 - Energetic Blue-shifted DW Emission in Multi-mode Gas-filled Hollow-core Fibers**
 » [Md Selim Habib](#) (United States)¹ (1. Florida Polytechnic University)
- 10:45am **ThD1.3 - High Harmonic Generation Driven by Raman Multidimensional Solitary States**
 » [Katherine Légaré](#) (Canada)¹, [Reza Safaei](#) (Canada)¹, [Guillaume Barrette](#) (Canada)¹, [Loïc Arias](#) (Canada)¹, [Philippe Lassonde](#) (Canada)¹, [Heide Ibrahim](#) (Canada)¹, [Boris Vodungbo](#) (France)², [Emmanuelle Jal](#) (France)², [Jan Lüning](#) (Germany)³, [Andrius Baltuška](#) (Austria)⁴, [Nicolas Jaouen](#) (France)⁵, [Francois Legare](#) (Canada)¹, [Guangyu Fan](#) (Canada)¹ (1. Institut National de la Recherche Scientifique, 2. Sorbonne Université, 3. Helmholtz-Zentrum Berlin, 4. Vienna University of Technology, 5. Synchrotron SOLEIL)
- 11am **ThD1.4 - Spatiotemporal nonlinear dynamic in gas filled hollow core fiber (Invited)**
 » [Reza Safaei](#) (Canada)¹, [Francois Legare](#) (Canada)² (1. University of Ottawa, 2. Institut national de la recherche scientifique Centre Énergie Matériaux Télécommunications (INRS-EMT))
- 10am **ThE1: Coherent Communications**
 Chaired by: [Fotini Karinou](#) (United Kingdom) and [Deepa Venkitesh](#) (India)
- 10am **ThE1.1 - Fiber device characterisation techniques for SDM transmission (Invited)**
 » [Chigo Okonkwo](#) (Netherlands)¹ (1. TuE)
- 10:30am **ThE1.2 - Modulator-based sinc-sequence sampled time and frequency multiplexed QAM signal transmission (Best Student Paper Finalist)**
 » [Arijit Misra](#) (Germany)¹, [Janosch Meier](#) (Germany)¹, [Stefan Preussler](#) (Germany)¹, [Karanveer Singh](#) (Germany)¹, [Thomas Schneider](#) (Germany)¹ (1. Technische Universität Braunschweig)

- 10:45am **ThE1.3 - Dynamic Constellation Adaptive Equalizer for Coherent Optical Transmission Systems**
 » [Marcos Troncoso Costas](#) (Ireland)¹, [Colm Browning](#) (Ireland)², [Andrew Ellis](#) (United Kingdom)³, [Francisco Diaz-Otero](#) (Spain)⁴, [Liam Barry](#) (Ireland)² (1. Dublin City University and University of Vigo, 2. Dublin City University, 3. Aston University, 4. University of Vigo)
- 11am **ThE1.4 - Joint Estimation and Compensation of Transmitter IQ Imbalance and Laser Phase Noise in Coherent Optical Systems**
 » [Alexandru Frunza](#) (France)¹, [Jacqueline E. Sime](#) (France)², [Vincent Choqueuse](#) (France)², [Pascal Morel](#) (France)², [Stéphane Azou](#) (France)² (1. École Nationale d'Ingénieurs de Brest / Military Technical Academy, 2. Ecole Nationale d'Ingénieurs de Brest, Lab-STICC, CNRS, UMR 6285)
- 11:15am **ThE1.5 - Experimental Investigation of the Linearization of an SOA based CO-OFDM System**
 » [Jacqueline E. Sime](#) (France)¹, [Pascal Morel](#) (France)¹, [Mihai Telescu](#) (France)², [Noël Tanguy](#) (France)², [Stéphane Azou](#) (France)¹ (1. Ecole Nationale d'Ingénieurs de Brest, Lab-STICC, CNRS, UMR 6285, 2. Univ Brest, Lab-STICC, CNRS, UMR 6285)
- 10am **ThF1: Avalanche Photodetectors I**
 Chaired by: [Andreas Beling](#) (United States)
- 10am **ThF1.1 - Waveguide-Coupled Ge Photodiodes with 3-dB Bandwidth ≥110 GHz (Invited)**
 » [Stefan Lischke](#) (Germany)¹, [Anna Peczek](#) (Germany)², [Daniel Steckler](#) (Germany)³, [Falk Korndörfer](#) (Germany)¹, [Lars Zimmermann](#) (Germany)⁴ (1. IHP - Leibniz-Institut für innovative Mikroelektronik, 2. IHP Solutions GmbH, 3. IHP - Leibniz-Institut für innovative Mikroelektronik, 4. Technische Universität Berlin, Institut für HF- und HL-Systemtechnologien)
- 10:30am **ThF1.2 - Non-invasive light monitoring for heterogeneous photonic integrated circuits**
 » [SUDHARSANAN SRINIVASAN](#) (United States)¹, [Di Liang](#) (United States)¹, [Raymond G. Beausoleil](#) (United States)¹ (1. Hewlett Packard Enterprise)

Continued from **Thursday, 21 October**

10:45am **ThF1.3 - Bias effects on the electro-optic response of Ge-on-Si waveguide photodetectors**
 » [Matteo Giovanni Carmelo Alasio](#) (Italy)¹, Michele Goano (Italy)¹, Alberto Tibaldi (Italy)¹, Francesco Bertazzi (Italy)¹, Soha Namnabat (United States)², Donald Adams (United States)², Prakash Gothoskar (United States)², Fabrizio Forghieri (United States)², Giovanni Ghione (Italy)¹, Marco Vallone (Italy)¹ (1. Politecnico di Torino, 2. Cisco Systems)

11am **ThF1.4 - III-V/Si Photonic Integrated Circuits for Sensing Applications (Invited)**
 » [Gunther Roelkens](#) (Belgium)¹ (1. Ghent University - imec)

10am **ThG1: Next Generation Silicon Photonics**
 Chaired by: Chi Xiong (United States) and Weimin Zhou (United States)

10am **ThG1.1 - New Frontiers for Silicon Photonics (Invited)**
 » [Graham Reed](#) (United Kingdom)¹, Ke Li (United Kingdom)¹, Fanfan Meng (United Kingdom)¹, Weiwei Zhang (United Kingdom)¹, Shenghao Liu (United Kingdom)¹, Wei Cao (United Kingdom)¹, Martin Ebert (United Kingdom)¹, Periklis Petropoulos (United Kingdom)¹, Xia Chen (United Kingdom)¹, Milan Milosevic (United Kingdom)¹, Xingshi Yu (United Kingdom)¹, Ion E Opris (United States)², Steven Fortune (United States)³, Drew Compston (United States)³, Remus Nicolaescu (United States)³, David Thomson (United Kingdom)¹ (1. Optoelectronics Research Centre, University of Southampton, 2. 3 Opris Consulting, 3. Pointcloud Inc)

10:30am **ThG1.2 - Silicon Photonics beyond the singlemode regime (Invited)**
 » [Daoxin Dai](#) (China)¹, Long Zhang (China)², Dajian Liu (China)², Lijia Song (China)² (1. Zhejiang, 2. Zhejiang University)

11am **ThG1.4 - Polarization Rotator on Silicon Strip Waveguide using Tilted Bragg Grating**
 » [Eman Elzahaby](#) (Egypt)¹, Ahmed Fath Elbab (Egypt)¹, Hossam Shalaby (Egypt)² (1. Egypt-Japan University of Science and Technology (E-JUST), 2. Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt. Faculty of Engineering, Alexandria University, Alexandria 21544, Egypt)

10am **ThH1: Photonics Awards II**
 Chaired by: Weidong Zhou (United States) and Dominique Dagenais (United States)

10am **ThH1.1 - Field Programmable Photonic Gate Arrays for Analog Computing (Engineering Achievement Award)**
 » [Jose Capmany](#) (Spain)¹ (1. Universitat Politècnica de València)

10:30am **ThH1.2 - 3D Imaging Through a Single Optical Fibre (Quantum Electronics Award)**
 » [Miles Padgett](#) (United Kingdom)¹ (1. University of Glasgow)

12pm **ThA2: Machine Learning and Optical Design**
 Chaired by: Rajesh Menon (United States) and Aydogan Ozcan (United States)

12pm **ThA2.1 - Applicability of Convolutional Neural Network to Classification of Laser Polishing Process Conditions**
 » [Srdjan J. Cvijanovic](#) (Canada)¹, Evgueni Bordatchev (Canada)², O. Remus Tutunea-Fatan (Canada)¹ (1. Western University, 2. National Research Council of Canada)

12:15pm **ThA2.2 - Feasibility Study of the Recurrent Neural Network for Modeling and Predicting Laser Polished Surface Quality**
 » [Honghe Wu](#) (Canada)¹, Evgueni Bordatchev (Canada)² (1. Western University, 2. National Research Council of Canada)

12:30pm **ThA2.3 - Genetic Deep Learning for Photonic Device Inverse Design**
 » Yangming Ren (China)¹, Lingxuan Zhang (China)¹, Wenfu Zhang (China)¹, [Xiaochen Sun](#) (China)¹ (1. Xi'an Institute of Optics and Precision Mechanics)

12:45pm **ThA2.4 - Machine-Learning Based Quantum Cascade Laser Design**
 » [SURA SURI](#) (United States)¹, Yulu Mao (United States)¹, Jeremy Kirch (United States)¹, Benjamin Knipfer (United States)¹, Zongfu Yu (United States)¹, Dan Botez (United States)¹, Luke Mawst (United States)¹ (1. University of Wisconsin - Madison)



Continued from **Thursday, 21 October**

1pm
ThA2.5 - Analysis of the optical properties of a fiber Bragg grating using machine learning approach
 » [Koustav Dey](#) (India)¹, [Nikhil V](#) (India)¹, [Sourabh Roy](#) (India)¹, [Sukanya Choudhary](#) (India)¹ (1. NIT WARANGAL, INDIA)

12pm
ThB2: Ansys Photonic Inverse Design Workshop
 Chaired by: [Jens Niegemann](#) (Canada) and [Taylor Robertson](#) (Canada)

12pm
ThC2: Metamaterials
 Chaired by: [Paul Barclay](#) (Canada)

12pm
ThC2.1 - Electromagnetically induced transparency in square slotted dielectric metasurfaces supporting bound states in the continuum
 » [Jose Francisco Algorri](#) (Spain)¹, [Francesco Dell'Olio](#) (Italy)², [Pablo Roldan Varona](#) (Spain)¹, [Luis Rodriguez Cobo](#) (Spain)³, [José Miguel López-Higuera](#) (Spain)¹, [José Manuel Sánchez Pena](#) (Spain)⁴, [Dimitrios Zografopoulos](#) (Italy)⁵ (1. Photonics Engineering Group, University of Cantabria, 39005, Santander, Spain, 2. Polytechnic University of Bari, 3. CIBER-bbn, Instituto de Salud Carlos III, 28029, Madrid, Spain, 4. Department of Electronic Technology, Carlos III University, Madrid 28911, Spain, 5. Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi (CNR-IMM), Roma 00133, Italy)

12:15pm
ThC2.2 - Wavelength Selectivity in a Polarization-Insensitive Metamaterial-Based Absorber Consistent With Atmospheric Absorption Windows
 » [Ataollah Kalantari Osgouei](#) (Turkey)¹, [Ebru Buhara](#) (Turkey)¹, [Bahram Khalichi](#) (Turkey)¹, [Amir Ghobadi](#) (Turkey)¹, [Ekmel Ozbay](#) (Turkey)² (1. Bilkent University, 2. Nanotechnology Research Center, Department of Electrical and Electronics Engineering, Department of Physics, Bilkent University)

12:30pm
ThC2.3 - Thermally Tunable from Narrowband to Broadband Metamaterial-Based Nanoantenna Emitter
 » [Ebru Buhara](#) (Turkey)¹, [Ataollah Kalantari Osgouei](#) (Turkey)¹, [Bahram Khalichi](#) (Turkey)¹, [Hasan Kocer](#) (Turkey)¹, [Amir Ghobadi](#) (Turkey)¹, [Ekmel Ozbay](#) (Turkey)² (1. Bilkent University, 2. Nanotechnology Research Center, Department of Electrical and Electronics Engineering, Department of Physics, Bilkent University)

12:45pm
ThC2.4 - Dual-Band Polarization Insensitive Metamaterial-Based Absorber Suitable for Sensing Applications
 » [Ataollah Kalantari Osgouei](#) (Turkey)¹, [Bahram Khalichi](#) (Turkey)¹, [Ebru Buhara](#) (Turkey)¹, [Amir Ghobadi](#) (Turkey)¹, [Ekmel Ozbay](#) (Turkey)² (1. Bilkent University, 2. Nanotechnology Research Center, Department of Electrical and Electronics Engineering, Department of Physics, Bilkent University)

1pm
ThC2.5 - Edge Emitting 1st Order DFB Lasers from Metal-Halide Perovskite by Nanoimprint Lithography
 » [Supratim Basak](#) (Israel)¹ (1. Tel-Aviv University)

12pm
ThD2: Dissipative Waves in Fiber Lasers
 Chaired by: [Hanieh Fattahi](#) (Germany)

12pm
ThD2.1 - Femtosecond pulses from all-fibre Mamyshev oscillators (Invited)
 » [Michel Piché](#) (Canada)¹, [Vincent Boulanger](#) (Canada)¹, [Michel Olivier](#) (Canada)², [François Trépanier](#) (Canada)³, [Martin Bernier](#) (Canada)⁴ (1. Université Laval, 2. Université Laval / Cegep Garneau, 3. TeraXion, 4. Université Laval)

12:30pm
ThD2.2 - Generation of dissipative and conventional solitons in a single 2 μm fiber laser
 » [shutao xu](#) (United States)¹, [Ahmet Turnali](#) (United States)¹, [Michelle Sander](#) (United States)¹ (1. Boston University)

Continued from **Thursday, 21 October**

12:45pm **ThD2.3 - Optical synchronization between a dissipative Kerr soliton and a chip-scale mode-locked laser (Best Student Paper Finalist)**

» [Ricardo Bustos-Ramirez](#) (United States)¹, Chinmay Shirpurkar (United States)¹, Lawrence Robert Trask (United States)¹, Srinivas Varma Pericherla (United States)¹, Travis Crain Briles (United States)², Jordan Ronald Stone (United States)², Su-Peng Yu (United States)², Ashish Bhardwaj (United States)³, Gloria Hoefler (United States)³, Scott Papp (United States)², Peter John Delfyett (United States)¹ (1. University of Central Florida, 2. National Institute for Standards and Technology, Boulder, Colorado, 3. Infinera Corporation)

12pm **ThE2: Optical Processing Functions**

Chaired by: Youichi Akasaka (United States) and Dora Van Veen (United States)

12pm **ThE2.1 - Emerging applications of wavelength conversion (Invited)**

» Afshin Shamshooli (United States)¹, Cheng Guo (United States)¹, Francesca Parmigiani (United Kingdom)², Xiaoying Li (China)³, Youichi Akasaka (United States)⁴, Paparao Palacharla (United States)⁴, [Michael Vasilyev](#) (United States)¹ (1. University of Texas at Arlington, 2. Microsoft Research, 3. Tianjin University, 4. Fujitsu Network Communications)

12:30pm **ThE2.2 - Noise figure measurement for a 3-stage hybrid amplifier using parametric wavelength converters and EDFA**

» [Cheng Guo](#) (United States)¹, Afshin Shamshooli (United States)¹, Michael Vasilyev (United States)¹, Youichi Akasaka (United States)², Paparao Palacharla (United States)² (1. University of Texas at Arlington, 2. Fujitsu Network Communications)

12:45pm **ThE2.3 - Demonstration of a Tunable Optical Correlation of a 10-15 Gbaud QPSK Data Signal using Nonlinear Wave Mixing at a Remotely Controlled Node**

» [Fatemeh Alishahi](#) (United States)¹, Kaiheng Zou (United States)¹, Amir Minoofar (United States)¹, Huibin Zhou (United States)¹, Moshe Tur (Israel)², Jonathan Habib (United States)¹, Alan Willner (United States)¹ (1. University of Southern California, 2. Tel Aviv University)

1pm **ThE2.4 - Parallel Dot Products Using Silicon Photonics**

» Andy Wolff (United States)¹, [Kyle Shiflett](#) (United States)¹, Avinash Karanth (United States)¹ (1. Ohio University)

1:15pm **ThE2.5 - Weight Adjustable Photonic Synapse by Non-Linear Gain in a Vertical Cavity Semiconductor Optical Amplifier**

» [Juan Alanis](#) (United Kingdom)¹, Joshua Robertson (United Kingdom)², Matej Hejda (United Kingdom)¹, Antonio Hurtado (United Kingdom)¹ (1. University of Strathclyde, 2. University of Str)

12pm **ThF2: Avalanche Photodetectors II**

Chaired by: Nicola D'Ascenzo (China)

12pm **ThF2.1 - High-Performances Dual M-Layers Avalanche Photodiodes from Single-Photon Detection to High Saturation Output Power (Invited)**

» [Jin-Wei Shi](#) (Taiwan)¹ (1. Dept. of EE, National Central University)

12:30pm **ThF2.2 - Cryogenic Noise of Staircase Avalanche Photodiodes (Best Student Paper Finalist)**

» [Adam Dadey](#) (United States)¹, Stephen March (United States)², Xingjun Xue (United States)¹, Seth Bank (United States)², Joe Campbell (United States)¹ (1. University of Virginia, 2. University of Texas at Austin)

12:45pm **ThF2.3 - Low noise InGaAs/InP SPAD for fiber-based quantum applications**

» [Fabio Signorelli](#) (Italy)¹, Fabio Telesca (Italy)¹, Adriano Della Frera (Italy)², Alessandro Ruggeri (Italy)², Andrea Giudice (Italy)², Alberto Tosi (Italy)¹ (1. Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB), Politecnico di Milano, 2. Micro Photon Devices Srl)

1pm **ThF2.4 - Temperature-dependent Photon Detection Efficiency model for InGaAs/InP SPAD**

» [Fabio Telesca](#) (Italy)¹, Fabio Signorelli (Italy)¹, Alberto Tosi (Italy)¹ (1. Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB), Politecnico di Milano)

Continued from **Thursday, 21 October**

- 1:15pm **ThF2.5 - Fast-gated 16 × 16 SPAD array with on-chip 6 ps TDCs for non-line-of-sight imaging**
 » [Simone Riccardo](#) (Italy)¹, Enrico Conca (Italy)¹, Vincenzo Sesta (Italy)¹, Alberto Tosi (Italy)¹ (1. Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB), Politecnico di Milano)
- 12pm **ThG2: Hollow Core Optical Fibers**
 Chaired by: Oleg Sinkin (United States) and Fatih Yaman (United States)
- 12pm **ThG2.1 - Impact of Gas-induced Differential Refractive Index on the Optical Properties of Hollow Core Fibres (Invited)**
 » [Natalie Wheeler](#) (United Kingdom)¹, Thomas Kelly (United Kingdom)¹, Ian Davidson (United Kingdom)¹, Shuichiro Rikimi (United Kingdom)¹, Greg Jasion (United Kingdom)¹, Austin Taranta (United Kingdom)¹, Matthew Partridge (United Kingdom)¹, David Richardson (United Kingdom)¹, Francesco Poletti (United Kingdom)², Peter Horak (United Kingdom)¹ (1. Optoelectronics Research Centre, University of Southampton, UK, 2. Optoelectronics Research Centre)
- 12:30pm **ThG2.2 - Non-Invasive Measurement of Hollow-Core Antiresonant Fiber Structure**
 » [Leonard Budd](#) (United Kingdom)¹, Austin Taranta (United Kingdom)¹, Eric Numkam Fokoua (United Kingdom)¹, Francesco Poletti (United Kingdom)¹ (1. Optoelectronics Research Centre)
- 12:45pm **ThG2.3 - An Antiresonant Hollow-Core Fiber In-Line Bandpass Optical Filter**
 » [Daiqi Xiong](#) (Singapore)¹, Xu Wu (Singapore)¹, Muhammad Rosdi Abu Hassan (Singapore)¹, Wonkeun Chang (Singapore)¹ (1. School of Electrical and Electronic Engineering, Nanyang Technological University)
- 1pm **ThG2.4 - Anisotropic Nested Hollow-core Fiber Designs**
 » [Michael Petry](#) (United States)¹, Md Selim Habib (United States)¹ (1. Florida Polytechnic University)

- 1:15pm **ThG2.5 - Modeling gas flow in hollow-core optical fibers**
 » [Wei Zhang](#) (United States)¹, Curtis R. Menyuk (United States)², Jonathan Hu (United States)¹ (1. Baylor University, 2. University of Maryland Baltimore County)
- 12pm **ThH2: Nonlinear Devices and Novel Phenomena**
 Chaired by: Francesco Dell'Olio (Italy) and William Loh (United States)
- 12pm **ThH2.1 - Lossless optical isolation and nonreciprocity in integrated photonics (Invited)**
 » [Ogulcan Orsel](#) (United States)¹, Donggyu Benjamin Sohn (United States)¹, Josephine Melia (United States)¹, Soonwook Kim (United States)¹, Seunghwi Kim (United States)¹, Christopher Peterson (United States)¹, [Gaurav Bahi](#) (United States)¹ (1. University of Illinois at Urbana-Champaign)
- 12:30pm **ThH2.2 - Microdisk cavities based on transmission at Brewster's angle**
 » [Julius Kullig](#) (Germany)¹, Jan Wiersig (Germany)¹ (1. Institut für Physik, Otto-von-Guericke-Universität Magdeburg)
- 12:45pm **ThH2.3 - Permanent Bi-directional Wavelength Shifting of Photonic Microresonators via Laser Trimming**
 » [Timo Lipka](#) (Germany)¹, Kilian Makswit (Germany)¹, Lukas Rennpferdt (Germany)¹, Matthias L. Vermeer (Germany)¹, Hoc Khiem Trieu (Germany)¹ (1. Institute of Microsystems Technology, Hamburg University of Technology)
- 1pm **ThH2.4 - Attojoule-per-bit electrical energy consumption optical modulators at 4K and 300K through energy harvesting (Invited)**
 » [Marc de Cea Falco](#) (United States)¹, Rajeev Ram (United States)¹ (1. Massachusetts Institute of Technology)
- 1:30pm **ThH2.5 - In-resonator Electro-absorption Modulator for Photonic Computing**
 » [Enxiao Luan](#) (Canada)¹, Armaghan Eshaghi (Canada)¹ (1. Huawei)
- 2pm **ThA3: Post-Deadline Session and Closing Ceremony**
 Chaired by: Weidong Zhou (United States) and Christina Lim (Australia)



Continued from **Thursday, 21 October**

- 2pm **ThA3.1 - Broadband blind source separation by Integrated photonics**
» [Weipeng Zhang](#) (United States)¹, Chaoran Huang (United States)¹, Bhavin Shastri (Canada)², Paul Prucnal (United States)¹ (1. Princeton University, 2. Queen's University)
- 2:15pm **ThA3.2 - Fully self-contained turn-key soliton microcomb source**
» [Nikolay Pavlov](#) (Switzerland)¹, Johann Riemensberger (Switzerland)², Junqiu Liu (Switzerland)², Jijun He (Switzerland)², Rui Wang (Switzerland)², Arslan S. Raja (Switzerland)², Grigorii Likhachev (Switzerland)², Tobias J. Kippenberg (Switzerland)², John Jost (Switzerland)¹ (1. MicroSystems SARL, Lausanne, Switzerland, 2. Swiss Federal Institute of Technology in Lausanne (EPFL), CH-1015 Lausanne, Switzerland)
- 2:30pm **ThA3.3 - All-inorganic halide-perovskite-polymer luminescent fibers for high-bitrate ultraviolet free-space optical communication**
» [Chun Hong Kang](#) (Saudi Arabia)¹, Omar Alkhazragi (Saudi Arabia)¹, Lutfan Sinatra (United Kingdom)², Sultan Alshaibani (Saudi Arabia)¹, Kuang-Hui Li (Saudi Arabia)¹, Meiwei Kong (Saudi Arabia)¹, Marat Lutfullin (United Kingdom)², Osman M. Bakr (Saudi Arabia)¹, Tien Khee Ng (Saudi Arabia)¹, Boon S. Ooi (Saudi Arabia)¹ (1. King Abdullah University of Science and Technology (KAUST), 2. Quantum Solutions LLC)
- 2:45pm **ThA3.4 - Optical Properties of Rare Earth Ion Arrays Embedded into Lithium Niobate Micro-ring Resonators**
» [Dongmin Pak](#) (United States)¹, Arindam Nandi (United States)¹, Michael Titze (United States)², Edward Bielejec (United States)², Mahdi Hosseini (United States)¹ (1. Purdue University, 2. Sandia National Laboratories)