GFP2021
GROUP IV PHOTONICS

7-10 December 2021
Virtual Conference
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General Co-Chair:
Robert Halir,
Universidad de Málaga

General Co-Chair:
José Capmany,
Universidad Politecnica de Valencia

IEEE

IEEE Photonics Society

Welcome to the 2021 IEEE Group IV Photonics Conference!

Dear Participants,

We warmly welcome you to the 17th edition of the IEEE International Conference on Group IV Photonics. Originally planned to take place in the beautiful Mediterranean city of Málaga in southern Spain, due to the ongoing COVID-19 pandemic this year's edition will be held online. While we regret not being able to share with you the freshly grilled fish or the views from the Moorish fortress overlooking the city, we definitely encourage you to personally visit the city when you have chance.

Of course, nothing can fully replace the person-to-person interaction the conference is known for, but we strive to provide an engaging experience. This year, GFP will span four days (instead of the traditional three), with a schedule that can be comfortably followed from the US and Europe, and at least in part from Asia. The program is packed with high quality contributed presentations, both in the conventional oral presentation format, and in a shorter pitch-talk format. There are selected invited talks covering outstanding advances in modulation, lasing, neuromorphic computing and more, as well as two plenary talks by Prof. Roel Baets and Prof. Alexander Gaeta. We are furthermore delighted to offer a best student papers award – the winners will be announced in the closing session.

We would like to thank all of you for your participation and look forward to meeting you during the conference!

With warm regards,
José and Robert

Tuesday, 7 December

7am **Welcome Remarks**
Chaired by: Robert Halir (Spain)

7:15am **TuA -**
TuA: Opening Session
Chaired by: Robert Halir (Spain)

7:15am **TuA1 (Plenary) - Silicon Photonics: A Retrospection and a Prospection**
» Roel Baets (Belgium)[1] (1. Ghent University - imec)

8am **TuA2 (Invited) - Phenomena and applications enabled by topological charge evolution**
» Chao Peng (China)[1] (1. State Key Laboratory of Advanced Optical Communication Systems and Networks, Department of Electronics, Peking University)

8:30am **TuA3 (Invited) - Neuromorphic computing on integrated photonic circuits**
» Bert Offrein (Switzerland)[1] (1. IBM Research Europe -Zurich)

9am **Break**

9:30am **TuB -**
TuB: Mid-Infrared Photonics
Chaired by: J. Gonzalo Wanguemert Pérez (Spain) and Frederic Gardes (United Kingdom)

9:30am **TuB1 - Photodetection at 3.8μm Using Intrinsic Monolithic Integrated Germanium Photodiodes**
» Lauren Reid (United Kingdom)[1], Milos Nedeljkovic (United Kingdom)[1], Wei Cao (United Kingdom)[1], Lorenzo Mastronardi (United Kingdom)[1], Radan Slavik (United Kingdom)[1], Goran Mashanovich (United Kingdom)[1] (1. Optoelectronics Research Centre, Zepler Institute for Photonics and Nanoelectronics, Faculty of Engineering and Physical Sciences University of Southampton)

9:45am **TuB2 - Mid-infrared second harmonic generation with Ge quantum wells**
» Jacopo Frigerio (Italy)[1], Chiara Ciano (Italy)[2], Andrea Ballabio (Italy)[1], Daniel Chrastina (Italy)[1], Jonas Allerbeck (Germany)[3], Joel Kuttruff (Germany)[3], Lunjie Zheng (Sweden)[4], Eva Olsson (Sweden)[4], Virginia Falcone (Italy)[1], Monica De Seta (Italy)[2], Daniele Brida (Luxembourg)[5], Michele Virgilio (Italy)[6], Michele Ortolani (Italy)[7] (1. Politecnico di Milano, 2. Università Roma Tre, 3. University of Konstanz, 4. Chalmers University, 5. University of Luxembourg, 6. Università di Pisa, 7. Università La Sapienza)

10am **TuB3 - Suspended germanium waveguides with metamaterial lateral cladding for mid-infrared integrated photonics**
» Alejandro Sánchez-Postigo (Spain)[1], Alejandro Ortega-Moñux (Spain)[1], Jordi Soler Penades (Spain)[2], Daniel Pereira-Martín (Spain)[1], Ahmed Osman (United Kingdom)[3], Milos Nedeljkovic (United Kingdom)[4], Zhibo Qu (United Kingdom)[3], Yangbo Wu (United Kingdom)[3], Robert Halir (Spain)[5], Iñigo Molina-Fernández (Spain)[1], Pavel Cheben (Canada)[6], Goran Mashanovich (United Kingdom)[4], J. Gonzalo Wanguemert Pérez (Spain)[1] (1. Telecommunication Research Institute (TELMA), Universidad de Málaga, CEI Andalucía TECH, 2. VLC Photonics S.L., Valencia, 3. Optoelectronics Research Centre, University of Southampton, 4. Optoelectronics Research Centre, Zepler Institute for Photonics and Nanoelectronics, Faculty of Engineering and Physical Sciences University of Southampton, 5. Uni Málaga, 6. National Research Council Canada)

Continued from **Tuesday, 7 December**

10:15am

TuB4 - Mid-infrared supercontinuum generation in suspended silicon rib waveguides

» Thi Thuy Duong Dinh (France)[1], Xavier Le Roux (France)[1], Miguel Montesinos-Ballester (France)[2], Christian Lafforgue (France)[1], Eric Cassan (France)[1], Delphine Marris-Morini (France)[2], Laurent Vivien (France)[3], CARLOS RAMOS (France)[1] (1. Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, 2. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay, CNRS, 3. C2N, Univ. Paris-Saclay, CNRS)

10:30am **Break**

10:45am **TuC -**

TuC: Optoacoustics

Chaired by: Frederic Gardes (United Kingdom) and Robert Halir (Spain)

10:45am

TuC1 - Generating X-band phonons in a nanostructured silicon optomechanical cavity

» Jianhao ZHANG (France)[1], Xavier Le Roux (France)[1], Paula Nuño Ruano (France)[1], Daniele Melati (France)[1], Miguel Montesinos-Ballester (France)[1], Eric Cassan (France)[1], Delphine Marris-Morini (France)[1], Laurent Vivien (France)[1], Norberto Daniel Lanzillotti-Kimura (France)[1], Carlos Alonso-Ramos (France)[1] (1. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay, CNRS)

11am

TuC2 - Acousto-optic modulation in a Si-waveguide

» Irfan Ansari (Belgium)[1], Gilles F. Feutmba (Belgium)[1], John P. George (Belgium)[1], Jeroen Beeckman (Belgium)[2], Dries Van Thourhout (Belgium)[1] (1. Photonics Research Group, Ghent University - IMEC, 2. Liquid Crystal & Photonics Group, Ghent University)

11:15am

TuC3 - Thermo-mechanical Noise Measurement of Sealed Nanobeams on a Silicon Photonics-MEMS Platform

» Khannan Rajendran (Belgium)[1], Awanish Pandey (Belgium)[1], Pierre Edinger (Sweden)[2], Gaehun Jo (Sweden)[2], Alain Yuji Takabayashi (Switzerland)[3], Umar Khan (Belgium)[1], Peter Verheyen (Belgium)[4], Niels Quack (Switzerland)[3], Frank Niklaus (Sweden)[2], Wim Bogaerts (Belgium)[1], Kristinn B. Gylfason (Sweden)[2], Dries Van Thourhout (Belgium)[1] (1. Photonics Research Group, Ghent University - IMEC, 2. KTH - Royal Institute of Technology, 3. Ecole Polytechnique Fédérale de Lausanne (EPFL), 4. Interuniversity Microelectronics Centre, 3DSIP department)

11:30am **Break**

12pm **TuD1 -**

TuD1: Pitch Talks I

Chaired by: Daniel Benedikovic (France) and Robert Halir (Spain)

12pm

TuD1.1 - Novel Thermo-Optical Dynamics of Silicon µ-Cavities and Demonstration of On-Chip Thermo-Optically Induced Transparency

» Simone Iadanza (Ireland)[1], Marco Clementi (Italy)[2], Sebastian Schulz (United Kingdom)[3], Giulia Urbinati (Italy)[2], Changyu Hu (Ireland)[4], Dario Gerace (Italy)[5], Matteo Galli (Italy)[2], Liam O'Faolain (Ireland)[1] (1. Munster Technological University, 2. Universitá di Pava, 3. University of St. Andrews, 4. University College Cork, 5. Università di Pavia)

12:05pm

TuD1.2 - Dynamical Modeling of Silicon Ring Resonators in Thermo-optic Oscillation Regime

» Sourav Dev (Germany)[1], Mircea Catuneanu (Germany)[1], Kambiz Jamshidi (Germany)[1] (1. Technische Universität Dresden)

12:10pm

TuD1.3 - Modelling of thermal effects in InP-on-Si nanocavity lasers

» Pengyan Wen (Switzerland)[1], Preksha Tiwari (Switzerland)[1], Bernd Gotsmann (Switzerland)[1], Kirsten Moselund (Switzerland)[1] (1. IBM Research Europe -Zurich)

Continued from **Tuesday, 7 December**

12:15pm **TuD1.4 - Optimized hourglass-shaped resonators for efficient thermal tuning of CROW filters with reduced crosstalk**

» Juliana Müller (Germany)[1], Andrea Zazzi (Germany)[1], Gayatri Vasudevan Rajeswari (Germany)[1], Alvaro Moscoso Mártir (Germany)[1], Alireza Tabatabaei Mashayekh (Germany)[1], Arka Dipta Das (Germany)[1], Florian Merget (Germany)[1], Jeremy Witzens (Germany)[1] (1. RWTH Aachen University)

12:20pm **TuD1.5 - Simultaneous Measurements of the Fabricated Width and Thickness of Silicon Nitride Waveguides with Microring Resonators**

» MohammadReza Jalali Azizpour (Canada)[1], Duy-Thach Phan (Canada)[2], Abubaker Tareki (Canada)[2], Boris LeDrogoff (Canada)[2], Mohamed Chaker (Canada)[2], Michaël Ménard (Canada)[3] (1. Institut National de la Recherche Scientifique Centre—Énergie Matériaux Télécommunications, 2. Institut National de la Recherche Scientifique Centre—Énergie Matériaux Télécommunications, 3. Department of Computer Science, Université du Québec à Montréal)

12:25pm **TuD1.6 - Compact Silicon Nitride Circular Grating Reflectors**

» Fahimeh Armin (Canada)[1], Frederic Nabki (Canada)[2], Michaël Ménard (Canada)[1] (1. Department of Computer Science, Université du Québec à Montréal, 2. Department of Electrical Engineering, Ecole de Technologie Supérieure)

12:30pm **TuD1.7 - Sensitivity increase of silicon nitride ring resonator biosensor operated in the TM mode at 1310 nm**

» Lucía Castelló Pedrero (Spain)[1], Maria I. Gómez Gómez (Spain)[1], Jaime García Rupérez (Spain)[1], Amadeu Griol (Spain)[1], Alejandro Martínez (Spain)[1] (1. Nanophotonics Technology Center)

12:35pm **TuD1.8 - Basic building blocks development for a SiN platform in the visible range**

» Joaquín Faneca (Spain)[1], Jad Sabek (Spain)[1], Thalía Domínguez Bucio (United Kingdom)[2], Frederic Gardes (United Kingdom)[2], Carlos Domínguez Horna (Spain)[1] (1. CNM-IMB, 2. Optoelectronics Research Centre)

12:40pm **TuD1.9 - Compact amorphous-silicon visible-light monitor integrated in silicon nitride waveguides**

» Christian De Vita (Italy)[1], Charalambos Klitis (United Kingdom)[2], Nina Codreanu (Netherlands)[3], Giorgio Ferrari (Italy)[1], Marc Sorel (United Kingdom)[2], Andrea Melloni (Italy)[1], Francesco Morichetti (Italy)[1] (1. Politecnico di Milano, 2. University of Glasgow, 3. Delft University of Technology)

12pm **TuD2 -**

TuD2: Pitch Talks II

Chaired by: Alejandro Sánchez-Postigo (Spain) and Alejandro Ortega-Moñux (Spain)

12pm **TuD2.1 - ZnS antireflection coating for Silicon for MIR-LWIR applications**

» Christian De Vita (Italy)[1], Marco Asa (Italy)[1], Mikel Azpeitia (Italy)[2], Maria Eloisa Castagna (Italy)[2], Claudio Somaschini (Italy)[1], Francesco Morichetti (Italy)[1], Andrea Melloni (Italy)[1] (1. Politecnico di Milano, 2. STMicroelectronics)

12:05pm **TuD2.2 - Low-loss reactive sputter deposited titanium oxide waveguides**

» Alvaro Aguirre (Netherlands)[1], Ivo Hegeman (Netherlands)[2], Ward Hendriks (Netherlands)[2], Meindert Dijkstra (Netherlands)[2], Sonia Garcia Blanco (Netherlands)[2] (1. Integrated Optical Systems University of Twente Enschede, 2. Integrated Optical Systems University of Twente Enschede)

12:10pm **TuD2.3 - Fabrication of Perovskite/Si periodic microwire arrays via micro-pump fluidic strategy for optelectronics applications**

» Bin Xin (Saudi Arabia)[1], Iman Roqan (Saudi Arabia)[1] (1. KAUST)

12:15pm **TuD2.4 - Ge-on-Si camera for NIR detection**

» Michael Oehme (Germany)[1], Mathias Kaschel (Germany)[2], Maurice Wanitzek (Germany)[1], Steffen Epple (Germany)[2], Xin Zhou (Germany)[1], Zili Yu (Germany)[2], Daniel Schwarz (Germany)[1], Joachim Burghartz (Germany)[2], Jörg Schulze (Germany)[1] (1. Institute of Semiconductor Engineering, University of Stuttgart, 2. Institut für Mikroelektronik Stuttgart (IMS CHIPS))

Continued from **Tuesday, 7 December**

12:20pm **TuD2.5 - Ge micro-crystals photedetectors with enhanced infrared responsivity**

» Virginia Falcone (Italy)[1], Giovanni Isella (Italy)[1], Andrea Ballabio (Italy)[1], Jacopo Frigerio (Italy)[1], Andrea Barzaghi (Italy)[1], Carlo Zucchetti (Italy)[1], Federico Bottegoni (Italy)[1], Paolo Biagioni (Italy)[1], Luca Anzi (Italy)[1] (1. Politecnico di Milano)

12:25pm **TuD2.6 - Deep-learning algorithms for imperfection-resilient Fourier-transform spectroscopy in silicon**

» Zindine Mokeddem (France)[1], Daniele Melati (France)[2], David González-Andrade (France)[3], Thi-Thuy-Duong Dinh (France)[1], Miguel Montesinos-Ballester (France)[2], Eric Cassan (France)[1], Delphine Marris-Morini (France)[2], Yuri Grinberg (Canada)[4], Pavel Cheben (Canada)[4], Dan-Xia Xu (Canada)[4], Jens H. Schmid (Canada)[5], Laurent Vivien (France)[6], Aitor V. Velasco (Spain)[7], CARLOS RAMOS (France)[1] (1. Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, 2. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay, CNRS, 3. C2N, 4. National Research Council Canada, 5. National Research Council Canada, Ottawa, K1A 0R6, Canada, 6. C2N, Univ. Paris-Saclay, CNRS, 7. CSIC)

12:30pm **TuD2.7 - Circuit modeling for neuromorphic photonics in Verilog-A as a scalable simulation platform**

» Jagmeet Singh (Canada)[1], Hugh Morison (Canada)[1], Zhimu Guo (Canada)[1], Bicky Marquez (Canada)[1], Omid Esmaeeli (Canada)[2], Paul Prucnal (United States)[3], Lukas Chrostowski (Canada)[2], Bhavin Shastri (Canada)[1] (1. Queen's University, 2. University of British Columbia, 3. Princeton University)

12:35pm **TuD2.8 - Measuring the complex Joint Spectral Amplitude of photon pairs with a compact silicon chip**

» Massimo Borghi (Italy)[1] (1. University of Trento)

12:40pm **TuD2.9 - Ultrafast all-optical phase switch based on a CdO/Si waveguide**

» Juan Navarro (Spain)[1], Miguel Ribera Vicent (Spain)[1], Jorge Parra (Spain)[1], Pablo Sanchís (Spain)[1] (1. Nanophotonics Technology Center - Universitat Politècnica de València)

12:45pm **TuD2.10 - A Compact, Low-Drive-Voltage Mach-Zehnder Modulator Using Serially-Coupled Rings**

» Aroutin Khachaturian (United States)[1], Parham Porsandeh Khial (United States)[1], Ali Hajimiri (United States)[1] (1. California Institute of Technology)

1pm **Break**

1:15pm **TuE -**
TuE: Self-configuring Devices
Chaired by: Haisheng Rong (United States) and Robert Halir (Spain)

1:15pm **TuE1 (Invited) - Self-configuring complex photonic circuits**

» David A.B. Miller (United States)[1] (1. Stanford University)

1:45pm **TuE2 - Self-Configuring Silicon-Photonic Receiver for Multimode Free Space Channels**

» SeyedMohammad SeyedinNavadeh (Italy)[1], Maziyar Milanizadeh (Italy)[1], Giorgia Benci (Italy)[1], Christian De Vita (Italy)[1], Charalambos Klitis (United Kingdom)[2], Marc Sorel (United Kingdom)[2], Francesco Zanetto (Italy)[1], Vittorio Grimaldi (Italy)[1], Giorgio Ferrari (Italy)[1], David A.B. Miller (United States)[3], Andrea Melloni (Italy)[1], Francesco Morichetti (Italy)[1] (1. Politecnico di Milano, 2. University of Glasgow, 3. Stanford University)

2pm **TuE3 - Self-Stabilized Silicon Mach-Zehnder Interferometers by Integrated CMOS Controller**

» Fabio Toso (Italy)[1], Maziyar Milanizadeh (Italy)[1], Francesco Zanetto (Italy)[1], Vittorio Grimaldi (Italy)[1], Andrea Melloni (Italy)[1], Marco Sampietro (Italy)[1], Francesco Morichetti (Italy)[1], Giorgio Ferrari (Italy)[1] (1. Politecnico di Milano)

Wednesday, 8 December

7am **WA -**
WA: Modulators I
Chaired by: David Thomson (United Kingdom) and Laurent Vivien (France)

Continued from **Wednesday, 8 December**

7am **WA1 - 60-GHz-bandwidth O-band Membrane InGaAlAs Electro-Absorption Modulator on Si Platform**
» Takuma Aihara (Japan)[1], Tatsurou Hiraki (Japan)[2], Yoshiho Maeda (Japan)[1], Takuro Fujii (Japan)[1], Tai Tsuchizawa (Japan)[1], Kiyoto Takahata (Japan)[3], Takaaki Kakitsuka (Japan)[3], Shinji Matsuo (Japan)[1] (1. NTT Device Technology Labs, NTT Corporation, 2. NTT Device Technology Labs, 3. Waseda University)

7:15am **WA2 (Invited) - Membrane InP-based Modulator and Laser on Si**
» Tatsurou Hiraki (Japan)[1], Takuma Aihara (Japan)[1], Takuro Fujii (Japan)[1], Koji Takeda (Japan)[1], Yoshiho Maeda (Japan)[1], Tai Tsuchizawa (Japan)[1], Takaaki Kakitsuka (Japan)[2], Kiyoto Takahata (Japan)[2], Shinji Matsuo (Japan)[1] (1. NTT Device Technology Labs, NTT Corporation, 2. Waseda University)

7:45am **WA3 (Invited) - High-performance hybrid silicon and lithium niobate modulators**
» Xinlun Cai (China)[1] (1. Sun Yat-sen Univerisity)

8:15am **Break**

8:30am **WB -**
WB: Modulators II
Chaired by: Laurent Vivien (France) and David Thomson (United Kingdom)

8:30am **WB1 - Configurable Phase/Amplitude Modulator Circuit based on Silicon Plasma Dispersion**
» Hong Deng (Belgium)[1], Wim Bogaerts (Belgium)[1] (1. Gent University)

8:45am **WB2 - Fast volatile response in GST/Si waveguides for all-optical modulation**
» Jorge Parra (Spain)[1], Alejandro Santomé (Spain)[1], Juan Navarro (Spain)[1], Pablo Sanchis (Spain)[1] (1. Nanophotonics Technology Center - Universitat Politècnica de València)

9am **WB3 - Silicon Photonic Modulators for Data Center Interconnects**
» David Plant (Canada)[1] (1. McGill University)

9:15am **WB4 (Invited) - Plamonics on Silicon Photonics – Terabit Modulation on the Micrometer Scale**
» Benedikt Baeuerle (Switzerland)[1] (1. Polariton Technologies Ltd.)

9:45am **Break**

10:15am **WC -**
WC: Lasing and Detection
Chaired by: Jurgen Michel (United States) and Robert Halir (Spain)

10:15am **WC1 - Steady state lasing in strained germanium microbridges as fundamental measure for the crossover to direct band gap**
» Hans Sigg (Switzerland)[1], Francesco Armand Pilon (Switzerland)[1], Yann-Michel Niquet (France)[2], Jeremie Chretien (France)[2], Nicolas Pauc (France)[2], Vincent Reboud (France)[3], Vincent Calvo (France)[2], Julie Widiez (France)[3], Jean-Michel Hartmann (France)[4], Alexei Tchelnokov (France)[5], Jérôme Faist (Switzerland)[6] (1. Paul Scherrer Institut, 2. Univ. Grenoble Alpes, CEA, 3. Univ. Grenoble Alpes, CEA, LETI, 4. University Grenoble Alpes and CEA, LETI, 5. Univ. Grenoble Alpes, CEA and LETI, 6. Institute for Quantum Electronics, ETH Zürich)

10:30am **WC2 (Invited) - Towards lasing in hexagonal SiGe**
» Jos Haverkort (Netherlands)[1] (1. Eindhoven University of Technology)

11am **WC3 - Ge/Si electrically tunable VIS/SWIR photodetector**
» Andrea Ballabio (Italy)[1], Andrea De Iacovo (Italy)[2], Jacopo Frigerio (Italy)[1], Andrea Fabbri (Italy)[2], Giovanni Isella (Italy)[1], Lorenzo Colace (Italy)[2] (1. Politecnico di Milano, 2. Università degli Studi Roma Tre)

Continued from **Wednesday, 8 December**

11:15am **WC4 (Invited) - Silicon-Germanium Heterojunction Photodetectors for On-Chip Optoelectronics and Communications**

» Daniel Benedikovic (France)[1], Leopold Virot (France)[2], Guy Aubin (France)[1], Jean-Michel Hartmann (France)[3], Farah Amar (France)[1], Xavier Le Roux (France)[1], Carlos Alonso-Ramos (France)[1], Eric Cassan (France)[1], Delphine Marris-Morini (France)[1], Frederic Boeuf (France)[4], Jean-Marc Fedeli (France)[3], Bertrand Szelag (France)[3], Laurent Vivien (France)[1] (1. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay, 2. University Grenoble Alpes and CEA, LETI, 38054 Grenoble, France, 3. University Grenoble Alpes and CEA, LETI, 4. STMicroelectronics)

11:45am **WC5 - A Precision in-situ Waveguide Loss Measurement Technique Using In-line Silicon Photodetectors**

» Chaoxuan Ma (United States)[1], Ranjeet Kumar (United States)[1], Meer Nazmus Sakib (United States)[1], Duanni Huang (United States)[1], Haisheng Rong (United States)[1] (1. Intel Corporation)

12pm **Break**

12:30pm **WD -**
WD: Industry Session
Chaired by: Robert Halir (Spain)

12:30pm **WD1 (Invited) - Photonic Developments Utilizing Group IV Materials**

» Tracey Vanik (United States)[1] (1. EPIC)

1pm **WD2 (Invited) - Si Photonics for Wearable Health Sensors**

» Aaron Zilkie (United States)[1] (1. Rockley Photonics)

1:30pm **WD3 (Invited) - Scaling transmission bandwidth with silicon photonics integrated circuits**

» Yuliya Akulova (United States)[1] (1. Intel Corp.)

2pm **WD4 (Invited) - The next two decades of Silicon Photonics: Predictions and Challenges**

» Michael Hochberg (United States)[1] (1. Nokia)

Thursday, 9 December

7am **ThA -**
ThA: Photonic Systems
Chaired by: Pablo Sanchís (Spain) and Xianshu Luo (Singapore)

7am **ThA1 - High-performance Silicon Photonic Filters based on High-order Adiabatic Elliptical-microrings**

» Dajian Liu (China)[1], Jianghao He (China)[1], Yuluan Xiang (China)[1], Yang Xu (China)[1], Daoxin Dai (China)[1] (1. Zhejiang University)

7:15am **ThA2 - Silicon photonics transceiver evaluation for immersion cooled data center and HPC environments**

» Kazuhiko Kurata (Japan)[1], Yasuhiko Hagihara (Japan)[1], Makoto Kuwata (Japan)[1], Takashi Muto (Japan)[1], Shigeru Kobayashi (Japan)[1], Richard Pitwon (United Kingdom)[2] (1. AIO Core Ltd, 2. Resolute Photonics Ltd)

7:30am **ThA3 - Capacitance Matching for a Non-volatile Hybrid SIS Optical Phase Shifter with a Ferroelectric Capacitor**

» Jae-Hoon Han (Korea, Republic of)[1], Seung-Min Han (Korea, Republic of)[2], Dae-Hwan Ahn (Korea, Republic of)[1], Woo-Young Choi (Korea, Republic of)[3], Jin-Dong Song (Korea, Republic of)[1] (1. Korea Institute of Science and Technology (KIST), 2. Korea Institute of Science and Technology (KIST), Yonsei University, 3. Yonsei University)

7:45am **ThA4 - Secure authentication of 56 physically unclonable silicon photonic integrated circuits**

» Farhan Bin Tarik (United States)[1], Azadeh Famili (United States)[1], Yingjie Lao (United States)[1], Judson Ryckman (United States)[1] (1. Clemson University)

8am **ThA5 (Invited) - Fault-tolerant photonic quantum computing**

» Zachary Vernon (Canada)[1] (1. Xanadu Quantum Technologies Inc.)

8:30am **Break**

Continued from **Thursday, 9 December**

8:45am **ThB1 -**
ThB1: Pitch Talks III
Chaired by: Daniel Benedikovic (France) and Robert Halir (Spain)

8:45am **ThB1.1 - Compact low-loss strip to double-slot waveguide coupler for sensing application**
» Sushma Gali (India)[1], Varun Raghunathan (India)[1], Shankar Kumar Selvaraja (India)[1] (1. Indian Institute of Science)

8:50am **ThB1.2 - Al2O3 referenced microring resonators for the detection of interleukin-6**
» Ward Hendriks (Netherlands)[1], Meindert Dijkstra (Netherlands)[2], Jeroen Korterik (Netherlands)[2], Sonia Garcia Blanco (Netherlands)[2] (1. Integrated Optical Systems University of Twente Enschede, 2. Integrated Optical Systems University of Twente Enschede)

8:55am **ThB1.3 - Multimode mechanical confinement in 1D silicon optomechanical crystal cavities**
» Laura Mercadé Morales (Spain)[1], Amadeu Griol (Spain)[1], Alejandro Martínez (Spain)[1] (1. Nanophotonics Technology Center)

9am **ThB1.4 - Bandgap closure in 1D photonic crystals from interplay between Mie resonances**
» Evelyn Díaz Escobar (Spain)[1], Angela Barreda (Germany)[2], Laura Mercadé (Spain)[1], Amadeu Griol (Spain)[1], Alejandro Martínez (Spain)[1] (1. Nanophotonics Technology Center - Universitat Politècnica de València, 2. University of Jena)

9:05am **ThB1.5 - External Cavity Laser with Alignment Tolerant III-V Gain Chip to PIC Edge Coupler in Silicon Nitride**
» Ibrahim Ghannam (Germany)[1], Bin Shen (Germany)[1], Florian Merget (Germany)[1], Jeremy Witzens (Germany)[1] (1. RWTH Aachen University)

9:10am **ThB1.6 - The above-threshold linewidth enhancement factor of silicon-based quantum dot lasers**
» Shihao Ding (France)[1], Bozhang Dong (France)[1], Heming Huang (France)[1], John Bowers (United States)[2], Frédéric Grillot (France)[1] (1. LTCI, Télécom Paris, Institut Polytechnique de Paris, 2. Institute for Energy Efficiency, University of California, Santa Barbara)

9:15am **ThB1.7 - Narrow linewidth hybrid wavelength-tunable laser with optical negative feedback circuit**
» Tatsuki Komatsubara (Japan)[1], Toshiaki Okachi (Japan)[1], Nobuhide Yokota (Japan)[2], Hiroshi Yasaka (Japan)[2], Tomohiro Kita (Japan)[1] (1. School of Advanced Science and Engineering, Waseda University, 2. Research Institute of Electrical Communication Tohoku University)

9:20am **ThB1.8 - Laser sintering of polycrystalline Ge-Sn films**
» Md Toriqul Islam (United States)[1], Mool C. Gupta (United States)[1] (1. University of Virginia)

9:25am **ThB1.9 - Crosstalk Suppression in Adiabatic 2x2 Couplers via Device Perturbative Reshaping**
» Dominic Siriani (United States)[1], Jean-Luc Tambasco (United States)[1] (1. Cisco Systems, Inc.)

9:30am **ThB1.10 - Suitability of BPM Simulation for Silicon Photonics**
» Chenglin Xu (United States)[1], Evan Heller (United States)[1], Mayank Bahl (United States)[1], Rob Scarmozzino (United States)[1], Kai-Ning Ku (Taiwan)[2], Ying Zhou (United States)[1], Tungyu Su (Taiwan)[1], Po-Chih Chang (Taiwan)[2], Chen-Yu Lin (Taiwan)[2], Shang-Chun Chen (Taiwan)[2], Chih-Lin Wang (Taiwan)[2], Chien-Chung Li (Taiwan)[2] (1. Synopsys, 2. ITRI)

8:45am **ThB2 -**
ThB2 - Pitch Talks IV
Chaired by: Alejandro Sánchez-Postigo (Spain) and Alejandro Ortega-Moñux (Spain)

Continued from **Thursday, 9 December**

8:45am

ThB2.1 - Beyond 60-Gbit/s Modulation of Impedance Mismatched Silicon MZI Modulator

» Zih-Yuan Ciou (Taiwan)[1], Kuo-Fang Chung (Taiwan)[1], Shih-Chun Kao (Taiwan)[1], Chih-Hsien Cheng (Japan)[2], Ding-Wei Huang (Taiwan)[3], Gong-Ru Lin (Taiwan)[3] (1. Graduate Institute of Photonics and Optoelectronics, National Taiwan University, 2. Research Center for Advanced Science and Technology, University of Tokyo, 3. Graduate Institute of Photonics and Optoelectronics, and Department of Electrical Engineering, National Taiwan University)

8:50am

ThB2.2 - Design of an Ultra-compact Star-coupler Based 1×10 Power Splitter with Nano-pixel Structures

» Rui Huang (China)[1], Chao Qiu (China)[1], Haiyang Huang (China)[1], Yingxuan Zhao (China)[1], Xiaojuan She (China)[1], Han Liao (China)[1], Yang Li (China)[1], Junbo Zhu (China)[1], Zijian Zhu (China)[1], Xiang Liu (China)[1], Zhen Sheng (China)[1], Fuwan Gan (China)[1] (1. Shanghai Institute of Microsystem and Information Technology)

8:55am

ThB2.3 - Design of Resonant-Characteristics-Monitorable Si Wavelength Filter Using Face-To-Face Loop Mirrors For Heterogeneous Integrated Tunable Lasers

» Takanori Sato (Japan)[1], Takeshi Fujisawa (Japan)[1], Takuya Mitarai (Japan)[2], Takuo Hiratani (Japan)[2], Takuya Okimoto (Japan)[2], Tsutomu Ishikawa (Japan)[2], Naoya Kono (Japan)[2], Naoki Fujiwara (Japan)[2], Hideki Yagi (Japan)[2], Kunimasa Saitoh (Japan)[1] (1. Hokkaido University, 2. Sumitomo Electric Industries)

9am

ThB2.4 - Compact 8-channel Loop-Back AWG based Integrated Comb Processor

» Louw Roel van der Zon (Spain)[1], Pascual Muñoz (Spain)[1], Daniel Pastor (Spain)[1], Marcello Girardi (Sweden)[2], Victor Torres Company (Sweden)[2] (1. Universitat Politècnica de València, 2. Chalmers University)

9:05am

ThB2.5 - Low-Cost Solid-State Lidar with Wide Angle of View Using Wavelength Division Multiplexed Laser Array

» He Yuxuan (China)[1], Qiang Wang (China)[2], Zhonghan Wang (China)[1], Xu Han (China)[1], Yuxi Fang (China)[1], Wenpu Geng (China)[1], Zhongqi Pan (United States)[3], Yang Yue (China)[1] (1. Nankai University, 2. Angle AI (Tianjin) Technology Company Ltd, 3. University of Louisiana at Lafayette)

9:10am

ThB2.6 - Fabrication-tolerant Y-junction for high-performance power division using subwavelength silicon metamaterials

» Raquel Fernández de Cabo (Spain)[1], David González-Andrade (France)[2], Pavel Cheben (Canada)[3], Aitor V. Velasco (Spain)[4] (1. Consejo Superior de Investigaciones Científicas, 2. C2N, 3. National Research Council Canada, 4. CSIC)

9:15am

ThB2.7 - Broadband and Compact Polarization Splitter-Rotator Based on Subwavelength-Grating-Slot-Assisted Adiabatic Coupler for the Silicon-on-Insulator Platform

» Luhua Xu (Canada)[1] (1. CMC Microsystems)

9:20am

ThB2.8 - Parametric Monte-Carlo Characterization of Si Ring Modulators

» Youngkwan Jo (Korea, Republic of)[1], Yongjin Ji (Korea, Republic of)[1], Minkyu Kim (Korea, Republic of)[2], Stefan Lischke (Germany)[3], Christian Mai (Germany)[3], Lars Zimmermann (Germany)[4], Woo-Young Choi (Korea, Republic of)[1] (1. Yonsei University, 2. Formerly at Yonsei University, now at imec, Belgium, 3. IHP – Leibniz-Institut für innovative Mikroelektronik, 4. IHP – Leibniz-Institut für innovative Mikroelektronik, Technische Universität Berlin)

9:25am

ThB2.9 - High Q, Compact Photonic Crystal Nanobeam Cavity for an Active Device Platform in a CMOS Silicon Photonics Process

» Kenaish AlQubaisi (United States)[1], Miloš Popović (United States)[1] (1. Boston University)

9:30am

ThB2.10 - Multi-level Encoding and Decoding in a Wavelength-Multiplexed Photonic Tensor Processor

» Zhimu Guo (Canada)[1], Bicky Marquez (Canada)[1], Matthew Filipovich (Canada)[1], Hugh Morison (Canada)[1], Paul Prucnal (United States)[2], Lukas Chrostowski (Canada)[3], Sudip Shekhar (Canada)[3], Bhavin Shastri (Canada)[1] (1. Queen's University, 2. Princeton University, 3. University of British Columbia)

Continued from **Thursday, 9 December**

9:45am **Break**

10:15am **ThC -**
ThC: Non-linear Photonics and Comb Generation
Chaired by: Íñigo Molina-Fernández (Spain) and Pavel Cheben (Canada)

10:15am **ThC1 - Dynamic Compensation of Nonlinear Phenomena in Silicon Photonic Microring Resonator Filter**
» Matteo Petrini (Italy)[1], Maziyar Milanizadeh (Italy)[1], Francesco Morichetti (Italy)[1], Andrea Melloni (Italy)[1] (1. Politecnico di Milano)

10:30am **ThC2 - Low-loss, low-temperature PVD SiN waveguides**
» Negin Golshani (Belgium)[1] (1. Imec)

10:45am **ThC3 - Silicon ring modulator for broadband electro-optical frequency comb generation**
» Lucas Deniel (France)[1], Erwan Weckenmann (France)[2], Diego Perez Galacho (Spain)[3], Stephane Monfray (France)[4], Carlos Alonso-Ramos (France)[5], Laurent Bramerie (France)[2], Frederic Boeuf (France)[4], Laurent Vivien (France)[1], Delphine Marris-Morini (France)[5] (1. C2N, Univ. Paris-Saclay, CNRS, 2. Institut FOTON, Univ. Rennes, CNRS, 3. ITEAMITEAM research institute, Universitat Politècnica de València, 4. STMicroelectronics, 5. C2N)

11am **ThC4 - Dynamics of a silicon ring modulator and demonstration of a frequency comb**
» Awanish Pandey (Belgium)[1], Jing Zhang (Belgium)[1], Dries Van Thourhout (Belgium)[1] (1. Ghent University-imec)

11:15am **ThC5 (Plenary) - Quantum and Nonlinear Photonics with Silicon-based Chips**
» Alexander Gaeta (United States)[1] (1. Columbia University)

12pm **Break**

12:30pm **ThD -**
ThD: 2D and Metamaterials
Chaired by: Pavel Cheben (Canada) and Íñigo Molina-Fernández (Spain)

12:30pm **ThD1 (Invited) - 2D materials for optoelectronic integrated devices**
» Juejun Hu (United States)[1] (1. MIT)

1pm **ThD2 - Genetic optimisation of Brillouin gain in subwavelength-structured silicon membranes**
» Paula Nuno Ruano (France)[1], Jianhao Zhang (France)[2], Daniele Melati (France)[1], Xavier Le Roux (France)[1], Eric Cassan (France)[1], Delphine Marris-Morini (France)[1], Laurent Vivien (France)[1], Norberto Daniel Lanzillotti-Kimura (France)[1], Carlos Ramos (France)[1] (1. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay, CNRS, 2. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Sud, CNRS)

1:15pm **ThD3 (Invited) - Photonic Wire Bonding for Silicon Photonics III-V Laser Integration**
» Matthew J. Mitchell (Canada)[1], Becky Lin (Canada)[1], Iman Taghavi (Canada)[1], Shangxuan Matthew Yu (Canada)[1], Donald Witt (Canada)[1], Kashif Masud Awan (Canada)[1], Steven Gou (Canada)[1], Jeff Young (Canada)[1], Lukas Chrostowski (Canada)[1] (1. University of British Columbia)

1:45pm **ThD4 - Bricked patterning: a new concept to enhance the capabilities of subwavelength grating waveguides**
» J. Gonzalo Wanguemert Pérez (Spain)[1], José Manuel Luque-González (Spain)[1], Carlos Pérez-Armenta (Spain)[1], Robert Halir (Spain)[1], Jens H. Schmid (Canada)[2], Milan Dado (Slovakia)[3], Jan Litvik (Slovakia)[3], Pavel Cheben (Canada)[4], Íñigo Molina-Fernández (Spain)[1], Alejandro Ortega-Moñux (Spain)[1] (1. Telecommunication Research Institute (TELMA), Universidad de Málaga, CEI Andalucía TECH, 2. National Research Council Canada, Ottawa, K1A 0R6, Canada, 3. University of Žilina, Faculty of Electrical Engineering and Information Technology, 4. National Research Council Canada, Ottawa, Ontario K1A 0R6, Canada)

2pm **ThD5 - Twistoptics in 1D: Silicon moiré photonic crystals**
» Tahmid Talukdar (United States)[1], Anna Hardison (United States)[1], Judson Ryckman (United States)[1] (1. Clemson University)

Friday, 10 December

7am **FA -**
FA: Integrated Solutions for LIDAR
Chaired by: Daoxin Dai (China) and Pablo Sanchís (Spain)

7am **FA1 (Invited) - Silicon photonics integration for coherent LiDAR application**
» Linjie Zhou (China)[1], Weihan Xu (China)[1], Yuyao Guo (China)[1], Chuxin Liu (China)[1], Liangjun Lu (China)[1], Jianping Chen (China)[1] (1. Shanghai Jiao Tong University)

7:30am **FA2 - Silicon nitride CMOS platform for integrated optical phased arrays applications**
» Stefan Ilie (United Kingdom)[1], Pablo Ginel-Moreno (Spain)[2], Jaya Sagar (United Kingdom)[3], Thalía Domínguez Bucio (United Kingdom)[1], Alejandro Ortega-Moñux (Spain)[4], Konstantinos Lekkas (United Kingdom)[3], Teerapat Rutirawut (United Kingdom)[1], Lorenzo Mastronardi (United Kingdom)[1], Ilias Skandalos (United Kingdom)[1], Katarzyna Grabska (United Kingdom)[1], Íñigo Molina-Fernández (Spain)[4], George Kanellos (United Kingdom)[3], Pavel Cheben (Canada)[5], Frederic Gardes (United Kingdom)[1] (1. Optoelectronics Research Centre, Zepler Institute for Photonics and Nanoelectronics, Faculty of Engineering and Physical Sciences University of Southampton, 2. Instituto de Telecomunicación (TELMA), Universidad de Málaga, CEI Andalucía TECH, E.T.S.I de Telecomunicación, 3. University of Bristol, 4. Telecommunication Research Institute (TELMA), Universidad de Málaga, CEI Andalucía TECH, 5. National Research Council Canada)

7:45am **FA3 - Backside emitting silicon photonic beam steering module for LIDAR application**
» Xia Chen (United Kingdom)[1], Fan Meng (United Kingdom)[1], Steven Fortune (United States)[2], Andrew Compston (United States)[2], Martin Ebert (United Kingdom)[1], Xingzhao Yan (United Kingdom)[1], Han Du (United Kingdom)[1], Mehdi Banakar (United Kingdom)[1], Ying Tran (United Kingdom)[1], Callum Littlejohns (United Kingdom)[1], David Thomson (United Kingdom)[1], Remus Nicolaescu (United States)[2], Graham Reed (United Kingdom)[1] (1. Univeristy of Southampton, 2. Pointcloud)

8am **FA4 - Wafer level characterization of high channel count Optical Phased Array**
» Sylvain Guerber (France)[1], Daivid Fowler (France)[1], Jonathan Faugier-Tovar (France)[1], Philippe Grosse (France)[1], Jerome Meilhan (France)[1], Kim Abdoul-Carime (France)[1], Jean Hue (France)[1], Baptiste Delplanque (France)[1], François Simoens (France)[1], Bertrand Szelag (France)[1] (1. CEA LETI)

8:15am **FA5 - Integrated metamaterial surface-emitting antenna for beam steering applications**
» Pablo Ginel-Moreno (Spain)[1], Alejandro Sánchez-Postigo (Spain)[1], José de Oliva-Rubio (Spain)[1], Abdelfettah Hadij-ElHouati (Spain)[1], Winnie N. Ye (Canada)[2], J. Gonzalo Wanguemert Pérez (Spain)[1], Íñigo Molina-Fernández (Spain)[1], Jens H. Schmid (Canada)[3], Pavel Cheben (Canada)[3], Alejandro Ortega-Moñux (Spain)[1] (1. Instituto de Telecomunicación (TELMA), Universidad de Málaga, CEI Andalucía TECH, E.T.S.I de Telecomunicación, 29010 Malaga, Spain, 2. Department of Electronics, Carleton University, 1125 Colonel by Drive, Ottawa, Canada, 3. National Research Council Canada, Ottawa, K1A 0R6, Canada)

8:30am **FA6 - Silicon-based broadband metalens for wide-angle optical beam steering**
» Yang LIU (France)[1], Xavier Le Roux (France)[2], Eric Cassan (France)[1], Delphine Marris-Morini (France)[1], Laurent Vivien (France)[1], Carlos Alonso-Ramos (France)[1], Daniele Melati (France)[1] (1. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay, CNRS, 2. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay)

8:45am **Break**

9:15am **FB -**
FB: Advanced Devices
Chaired by: Gunther Roelkens (Belgium) and Alejandro Ortega-Moñux (Spain)

Continued from **Friday, 10 December**

9:15am **FB1 - Buried 3D silicon photonics spot-size convertors**

» Weiwei Zhang (United Kingdom)[1], Martin Ebert (United Kingdom)[1], Jamie Dean Reynolds (United Kingdom)[1], Bigeng Chen (United Kingdom)[2], Xingzhao Yan (United Kingdom)[3], Han Du (United Kingdom)[1], Mehdi Banakar (United Kingdom)[1], Ying Tran (United Kingdom)[1], Callum Littlejohns (United Kingdom)[1], Graham Reed (United Kingdom)[1], David Thomson (United Kingdom)[1] (1. Optoelectronics Research Centre, Zepler Institute for Photonics and Nanoelectronics, Faculty of Engineering and Physical Sciences, University of Southampton, 2. Optoelectronics Research Centre, Zepler Institute for Photonics and Nanoelectronics, Faculty of Engineering and Physical Sciences University of Southampton, 3. Optoelectronics Research Centre, Zepler Institute for Photonics and Nanoelectronics, Faculty of Engineering and Physical Sciences University of Southampton Southampton SO17 1BJ, UK)

9:30am **FB2 - Experimental demonstration of reservoir computing with a silicon resonator and time multiplexing**

» Massimo Borghi (Italy)[1], Stefano Biasi (Italy)[1], Lorenzo Pavesi (Italy)[1] (1. University of Trento)

9:45am **FB3 - Bimodal interferometry in photonic crystal structures for the development of ultra-compact optical devices**

» Luis Torrijos-Morán (Spain)[1], Jaime García-Rupérez (Spain)[1] (1. Nanophotonics Technology Center, Universitat Politècnica de València)

10am **FB4 - Silicon nitride on-chip spatial heterodyne Fourier-transform spectrometer with high étendue and broadband operation**

» David González-Andrade (France)[1], Thi Thuy Duong Dinh (France)[1], Sylvain Guerber (France)[2], Nathalie Vulliet (France)[3], Sébastien Cremer (France)[3], Stephane Monfray (France)[3], Eric Cassan (France)[1], Delphine Marris-Morini (France)[1], Frederic Boeuf (France)[3], Pavel Cheben (Canada)[4], Laurent Vivien (France)[1], Aitor V. Velasco (Spain)[5], Carlos Alonso-Ramos (France)[1] (1. C2N, 2. C2N, STMicroelectronics, 3. STMicroelectronics, 4. National Research Council Canada, 5. CSIC)

10:15am **FB5 - Optimization of Tapers and Interlayer Transitions via Adiabatic Loss Limitting**

» Jean-Luc Tambasco (United States)[1], Dominic Siriani (United States)[1] (1. Cisco Systems, Inc.)

10:30am **FB6 (Invited) - How silicon photonics can continue the cost-per-bit reduction trend for 1.6T fiber-optic transceivers and beyond**

» Christopher Doerr (United States)[1] (1. Doerr Consulting, LLC)

11am **Break**

11:30am **FC -**

FC: Wavelength Filtering Devices

Chaired by: Alejandro Ortega-Moñux (Spain) and Gunther Roelkens (Belgium)

11:30am **FC1 - Configuration and Optimization of a Programmable Coupled-Ring Loaded Mach-Zehnder Filter**

» Mi Wang (Belgium)[1], Xiangfeng Chen (Belgium)[1], Umar Khan (Belgium)[1], Wim Bogaerts (Belgium)[1] (1. Gent University)

11:45am **FC2 - Control of SiP Waveguide-Embedded Electronic Devices by Substrate/Gate Potential Tuning**

» Alessandro Perino (Italy)[1], Francesco Zanetto (Italy)[2], Matteo Petrini (Italy)[3], Fabio Toso (Italy)[2], Francesco Morichetti (Italy)[2], Andrea Melloni (Italy)[2], Giorgio Ferrari (Italy)[2], Marco Sampietro (Italy)[2] (1. Politercnico di Milano, 2. Politecnico di Milano, 3. Politecnico)

12pm **FC3 - High-Q-factor tellurium oxide clad silicon microring resonators**

» Khadijeh Miarabbas Kiani (Canada)[1], Dawson Bonneville (Canada)[1], Andrew Knights (Canada)[1], Jonathan D. B. Bradley (Canada)[1] (1. McMaster university)

12:15pm **FC4 - Thermal-Free Tunable Silicon Microring Resonator Driven by High-Mobility Conducting Oxide**

» Wei-Che Hsu (United States)[1], Alan X. Wang (United States)[1] (1. Oregon State University)

Continued from **Friday, 10 December**

12:30pm **FC5 - Ultra-Power Efficient Heterogeneous III-V/Si De-Interleavers for DWDM Optical Links**

» Stanley Cheung (United States)[1], Geza Kurczveil (United States)[1], Yingtao Hu (United States)[1], Mingye Fu (United States)[1], Mohammad Jobayer Hossain (United States)[1], Di Liang (United States)[1], Raymond Beausoleil (United States)[1] (1. Hewlett Packard Enterprise)

12:45pm **FC6 - Fabrication-Robust Silicon Photonics Platform in Standard 220 nm Silicon Processes**

» Anthony Rizzo (United States)[1], Utsav Dave (United States)[1], Alexandre Freitas (United States)[1], Samantha Roberts (United States)[1], Asher Novick (United States)[1], Michal Lipson (United States)[1], Keren Bergman (United States)[1] (1. Columbia University)

1pm **Break**

1:15pm **FD -**

FD: Post-Deadline Papers

Chaired by: Haisheng Rong (United States)

1:15pm **FD1 - Broadband mid-infrared integrated electro-optic modulator based on a Schottky diode embedded in a graded SiGe waveguide**

» Miguel Montesinos-Ballester (France)[1], Lucas Deniel (France)[2], Natnicha Koompai (France)[2], Thi Hao Nhi Nguyen (France)[2], Jacopo Frigerio (Italy)[3], Andrea Ballabio (Italy)[3], Virginia Falcone (Italy)[3], Xavier Le Roux (France)[2], Carlos Alonso-Ramos (France)[4], Laurent Vivien (France)[5], Adel Bousseksou (France)[2], Giovanni Isella (Italy)[3], Delphine Marris-Morini (France)[2] (1. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Saclay, CNRS, 2. Centre de Nanosciences et de Nanotechnologies, Universite Paris-Sud, 3. Politecnico di Milano, 4. C2N, 5. C2N, Univ. Paris-Saclay, CNRS)

1:30pm **FD2 - A multi-wavelength III-V/Si hybrid DFB laser with even wavelength spacing and uniform output power**

» Ranjeet Kumar (United States)[1], Duanni Huang (United States)[1], Meer Nazmus Sakib (United States)[1], Guan-Lin Su (United States)[1], Chaoxuan Ma (United States)[1], Xinru Wu (United States)[1], Haisheng Rong (United States)[1] (1. Intel Corporation)

1:45pm **FD3 - Engineering Low Dark Current Density for Ge-on-Si Photodiodes**

» Eveline Postelnicu (United States)[1], Stephanie Marzen (United States)[1], Ruitao Wen (China)[2], Danhao Ma (United States)[1], Baoming Wang (United States)[1], Kazumi Wada (United States)[1], Jurgen Michel (United States)[1], Lionel Kimerling (United States)[1] (1. Massachusetts Institute of Technology, 2. Southern University of Science and Technology)

2pm **Closing Remarks**

Chaired by: Haisheng Rong (United States)