

2025 IEEE Photonics Society Summer Topicals Meeting Series (SUM 2025)

**Berlin, Germany
21-23 July 2025**



**IEEE Catalog Number: CFP25SUM-POD
ISBN: 979-8-3315-0904-0**

**Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

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

IEEE Catalog Number:	CFP25SUM-POD
ISBN (Print-On-Demand):	979-8-3315-0904-0
ISBN (Online):	979-8-3315-0903-3
ISSN:	1099-4742

Additional Copies of This Publication Are Available From:

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

CURRAN ASSOCIATES INC.
proceedings
.com



Monday, 21 July

- 8:15am **MA1 -
MA1: Welcome & Joint Plenary**
Concorde A & B
Chaired by: Georg Rademacher (Germany) and Mikael Mazur (United States)
- 8:15am **Welcome Remarks**
» * * (United States)¹ (1. no affiliation)
- 8:30am **MA1.1 (Plenary) - Quantum Communication with Single-photon Interference and its Applications...N/A**
» Masahiro Takeoka (Japan)¹ (1. Keio University)
- 9am **MA1.2 (Plenary) - Integrated TFLN Photonics and Applications...N/A**
» Marko Loncar (United States)¹ (1. Harvard University)
- 9:30am **MA1.3 (Plenary) - Integrated Nonlinear Nanophotonics for Quantum Sensing...N/A**
» Scott Papp (United States)¹ (1. NIST)
- 10am **Break & Exhibits**
Galerie
- 10:30am **MA2 -
MA2: SHINE 1 - AI-Assisted Signal Processing**
Concorde A
Chaired by: Mahtab Aghaeipour (Germany) and Colja Schubert (Germany)
- 10:30am **MA2.1 (Keynote) - High performance and power efficient neuromorphic computing...N/A**
» Bert Jan Offrein (Switzerland)¹ (1. no affiliation)

11:15am **MA2.2 (Invited) - Insect-Brain Inspired Neuromorphic Nanophotonics for Sensing and Interpreting Noisy Optical Signal...N/A**

» Anders Mikkelsen (Sweden)¹ (1. Lund University)

11:45am **MA2.3 - Intelligent Detection of Overlapping Fiber Anomalies in Optical Networks Using Machine Learning...1**

» Gulmina Malik (Italy)¹, Imran Chowdhury Dipto (Italy)¹, Muhammad Umar Masood (Italy)¹, Mashboob Cheruvakkadu Mohamed (Italy)¹, Stefano Straullu (Italy)², Sai Kishore Bhyri (India)³, Gabriele Maria Galimberti (Italy)³, João Pedro (Portugal)³, Antonio Napoli (Germany)³, Walid Wakim (United States)³, Vittorio Curri (Italy)¹ (1. Politecnico di Torino, Italy, 2. Links Foundation, Italy, 3. Nokia)

10:30am **MC2 -
MC2: LBL 1**

Vendome A

Chaired by: Massimiliano Guasoni (United Kingdom) and Nithyanandan Kanagaraj (India)

10:30am **MC2.1 (Keynote) - Extreme control of light in space-time metamaterials...N/A**

» Andrea Alu (United States)¹ (1. City University of New York)

11:15am **MC2.2 (Invited) - Synchronisation and Chaotic Dynamics in Breathing-Soliton Laser...3**

» Junsong Peng (China)¹, Xiuqi Wu (China)¹, Ying Zhang (China)¹, Heping Zeng (China)¹, Christophe Finot (France)², Sonia Boscolo (Italy)³ (1. State Key Laboratory of Precision Spectroscopy East China Normal University Shanghai, China, 2. Laboratoire Interdisciplinaire Carnot de Bourgogne Université de Bourgogne Europe Dijon, France, 3. Aston Institute of Photonic Technologies)

Aston University
Birmingham, United Kingdom

INFN-LNS
Catania, Italy)

Continued from **Monday, 21 July**

11:45am

MC2.3 (Invited) - Kerr-Brillouin frequency combs in fiber Fabry-Perot resonators...N/A

» [Matteo Conforti](#) (France)¹, Thomas Bunel (France)¹, Arnaud Mussot (France)¹, Julien Lumeau (France)², Antonin Moreau (France)², Arnaud Fernandez (France)³, Olivier Llopis (France)³, Germain Bourcier (France)³, Auro Perego (United Kingdom)⁴ (1. PhLAM, 2. Aix Marseille University, 3. LAAS-CNRS, 4. Aston University)

10:30am

MD2 -

MD2: IQPS 1 - Quantum Opto-Electronics I

Vendome B

Chaired by: Nicolas Fabre (France) and Paolo Pintus (Italy)

10:30am

MD2.1 (Keynote) - Single-quantum-dot devices for photonic quantum technologies: Design, deterministic nanofabrication, and application perspectives...5

» [Stephan Reitzenstein](#) (Germany)¹ (1. Institute of Solid State Physics, Technische Universität Berlin, Germany)

11:15am

MD2.2 (Invited) - Progress on Semiconductor Quantum Dots emitting in the Telecom Bands...N/A

» [Andreas Theo Pfenning](#) (Germany)¹ (1. Julius-Maximilians-Universität Würzburg)

11:45am

MD2.3 - Planar Join Detection Receivers...7

» [Gabriella Cincotti](#) (Italy)¹ (1. Department of Civil, Computer and Aeronautical Engineering University Roma Tre Rome, Italy)

12pm

MD2.4 - Design and Simulation of Superconducting Nanowire Single-Photon Detectors Integrated with Photonic Crystal Waveguides on GaAs Substrates...9

» Aadit Sharma (United States)¹, Arafat A. Kazi (United States)¹, Tzu-Ming Lu (United States)², Lan Hoang Mai (United States)³, Joshya S. Rajagopal (United States)³, Matthew F. Doty (United States)³, Erika M. Sommer (United States)¹, John Nogan (United States)², Marek Osinski (United States)¹ (1. Center for High Technology Materials

University of New Mexico
Albuquerque, NM, USA, 2. Center for Integrated Nanotechnologies

Sandia National Laboratories
Albuquerque, NM, USA, 3. Quantum Science and Engineering

University of Delaware
Newark, DE, USA)

10:30am

ME2 -

ME2: OA6G 1 - Beyond 50G PON

Odeon A

Chaired by: Chris Vagionas (Greece) and Argyrios Kokkinis (Greece)

10:30am

ME2.1 (Invited) - Challenges to overcome for coherent systems to enter the TDM-PON market...N/A

» Md Mosaddek Hossain Adib (Germany)¹, Christoph Fuellner (Germany)¹, Vincent Houtsma (United States)¹, Dora van Veen (United States)¹, Rene Bonk (Germany)², Jochen Maes (Belgium)¹ (1. Nokia Bell Labs, 2. Nokia NI-FN)

11am

ME2.2 (Invited) - Recent Challenges to the Chromatic Dispersion Limitation in beyond 50 Gb/s Optical Access...11

» Ryo Koma (Japan)¹, Kazutaka Hara (Japan)¹, Ryo Igarashi (Japan)¹, Jun-ichi Kani (Japan)¹, Yasunari Tanaka (Japan)¹, Tomoaki Yoshida (Japan)¹ (1. NTT Corporation)

Continued from **Monday, 21 July**

11:30am **ME2.3 (Invited) - 200G-PON: requirements and technical options...N/A**
» [Ivan N. Cano](#) (Germany)¹ (1. Munich Research Center, Huawei Technologies)

10:30am **MF2 - MF2: Schnitzel 1 - Stabilized Lasers for Light Matter Sciences I**
Opera A
Chaired by: Nicolas Fontaine (United States) and Daniel J. Blumenthal (United States)

10:30am **MF2.1 (Invited) - Visible to SWIR Integrated Photonics for Atomic and Quantum Sciences and Applications...13**
» [Daniel J. Blumenthal](#) (United States)¹ (1. Department of Electrical and Computer Engineering, University of California Santa Barbara)

11am **MF2.2 (Invited) - Integrated Optical References for Portable Optical Atomic Clocks...N/A**
» [William Loh](#) (United States)¹ (1. MIT Lincoln Laboratory)

11:30am **MF2.3 (Invited) - Trapped ion qubit gates with integrated photonic lasers...N/A**
» Robert Niffenegger (United States)¹, [Daniel J. Blumenthal](#) (United States)² (1. University of Massachusetts Amherst, 2. University of California Santa Barbara)

10:30am **MG2 - MG2: PECDP 1 - Optics for Co-Packaging**
Opera B
Chaired by: Anthony J. Rizzo (United States) and Naoki Suzuki (Japan)

10:30am **MG2.1 (Invited) - 3D Polymer Optical Waveguide for High-Density Co-Packaging...N/A**
» [Takaaki Ishigure](#) (Japan)¹ (1. Keio University)

11am **MG2.2 (Invited) - LC2PO: Linear Coherent Co-packaged Optics for Scaling AI Infrastructure...15**

» [Sajjad Moazeni](#) (United States)¹, Daniel Sturm (United States)¹, Marziyeh Rezaei (United States)¹, Pengyu Zeng (United States)¹, Asha Rashmi Nayak (United States)¹ (1. Department of Electrical and Computer Engineering (ECE) University of Washington, Seattle, USA)

11:30am **MG2.3 (Invited) - Evaluation method for 3D co-packaged optical waveguide devices using data assimilation of guided light changes...N/A**

» [Tsuyoshi KONISHI](#) (Japan)¹, Shizen Nakayama (Japan)², Koichiro Ohkushi (Japan)¹ (1. Waseda University, 2. Osaka University)

12pm **Lunch**
Galerie

1:30pm **MA3 -
MA3: SHINE 2 - Future Network Computing**

Concorde A

Chaired by: Francesco Da Ros (Denmark) and Mahtab Aghaeipour (Germany)

1:30pm **MA3.1 (Invited) - Towards Network Scale AI/ML based Network Management and Optimization...17**

» Sen Shen (United Kingdom)¹, Ruizhi Yang (United Kingdom)¹, [Shuangyi Yan](#) (United Kingdom)¹, Dimitra Simeonidou (United Kingdom)¹ (1. Smart Internet Lab, University of Bristol, Bristol, UK)

2pm **MA3.2 (Invited) - In-network AI capabilities through hardware switches and optical computing...19**

» [Lorenzo De Marinis](#) (Italy)¹, Francesco Paolucci (Italy)², Filippo Cugini (Italy)² (1. Scuola Superiore Sant'Anna, Pisa, Italy, 2. CNIT, Pisa, Italy)

2:30pm **MA3.3 (Invited) - Training strategies for neuromorphic systems...N/A**

» [Robert Legenstein](#) (Austria)¹ (1. Graz University of Technology)

Continued from **Monday, 21 July**

1:30pm

MB3 -

MB3: MATCHA 1 - Digital and Optical Signal Processing

Concorde B

Chaired by: Qian Hu (United States) and Markus Grözing (Germany)

1:30pm

MB3.1 (Invited) - Challenges of Terabit Rate Transmission Systems...N/A

» Fred Buchali (Germany)¹ (1. Nokia GmbH & Co. KG)

2pm

MB3.2 (Invited) - Digital Signal Processing and Nonlinearity Reduction Techniques for 3.2 Tb/s Intra Data Center Networks...21

» Stephan Pachnicke (Germany)¹, Silas Oettinghaus (Germany)¹, Annika Dochhan (Germany)¹ (1. Chair of Communications Kiel University Kiel, Germany)

2:30pm

MB3.3 - Optical Intensity Reshaping for Enhanced Vertical Resolution in Coherent Optical Receivers...23

» Fabio A. Barbosa (United Kingdom)¹, Filipe M. Ferreira (United Kingdom)¹ (1. Optical Networks Group

University College London
London, United Kingdom)

2:45pm

MB3.4 - FWM Nonlinearity Reduction Techniques for 3.2 Tb/s Intra Datacenter Networks...25

» Silas Oettinghaus (Germany)¹, Stefano Calabrò (Germany)², Annika Dochhan (Germany)¹, Nebojsa Stojanovic (Germany)², Tom Wettlin (Germany)², Stephan Pachnicke (Germany)¹ (1. Chair of Communications Kiel University Kiel, Germany, 2. German Research Center Huawei Technologies Munich, Germany)

1:30pm

MC3 -

MC3: LBL 2

Vendome A

Chaired by: Massimiliano Guasoni (United Kingdom) and Nithyanandan Kanagaraj (India)

1:30pm

MC3.1 (Invited) - Spatial Light Manipulation for Scalable Spatial Division Multiplexing...27

» [Filipe M. Ferreira](#) (United Kingdom)¹, Fabio A. Barbosa (United Kingdom)¹, Rekha Yadav (United Kingdom)¹, Zun Htay (United Kingdom)¹, Samuel Lennard (United Kingdom)¹, Jakub Kostial (United Kingdom)¹, Yinglong Liang (United Kingdom)¹ (1. Electronic&Electrical Eng. University College London)

2pm

MC3.2 (Invited) - Characterization and control of nonlinear dynamics in multimode fibers...N/A

» [Goery Genty](#) (Finland)¹, Jiaqi Li (Finland)¹, Huimin Liu (Finland)¹, Piotr Ryczkowski (Finland)¹, Ekaterina Krutova (Finland)¹, John M. Dudley (France)² (1. Laboratory of Photonics, Tampere University, Tampere, Finland, 2. Université Marie et Louis Pasteur, CNRS FEMTO-ST, Besançon, France)

2:30pm

MC3.3 (Invited) - Energy-managed soliton fiber lasers...N/A

» [Philippe Grelu](#) (France)¹, Mostafa I. Mohamed (France)¹, Aurélien Coillet (France)¹, Mincheng Tang (France)¹, Vincent Couderc (France)² (1. Université Bourgogne Europe, 2. Université de Limoges)

1:30pm

MD3 -

MD3: IQPS 2 - Quantum Information Processing I

Vendome B

Chaired by: Sébastien Tanzilli (France) and Frederic Grillot (France)

1:30pm

MD3.1 (Invited) - Quantum Communications with Qudits...N/A

» [Davide Bacco](#) (Italy)¹ (1. University of Florence)

2pm

MD3.2 (Invited) - Digital signal processing in continuous variable quantum key distribution...N/A

» [Hou-Man Chin](#) (Denmark)¹ (1. Technical University of Denmark)

Continued from **Monday, 21 July**

2:30pm **MD3.3 (Invited) - Exploring the Frontier of Mid-infrared Free-space Communication and Gas Sensing, around the Classical Limit and Beyond...N/A**
» [Tecla Gabbrielli](#) (Italy)¹, [Jacopo Pelini](#) (Italy)¹, [Irene La Penna](#) (Italy)², [Luigi Consolino](#) (Italy)¹, [Davide Mazzotti](#) (Italy)¹, [Francesco Cappelli](#) (Italy)¹, [Paolo De Natale](#) (Italy)¹, [Simone Borri](#) (Italy)¹ (1. The National Institute of Optics (Istituto Nazionale di Ottica, CNR-INO), 2. LENS)

1:30pm **ME3: OA6G 2 - Fiber Wireless / Optical Wireless Technologies**
Odeon A
Chaired by: [Chris Vagionas](#) (Greece) and [Despoina Petousi](#) (Germany)

1:30pm **ME3.1 (Invited) - Fiber Wireless Fronthaul Technologies for mmWave/THz 6G Communications...N/A**
» [Andreas Stöhr](#) (Germany)¹, [Yilmaz Ucar](#) (Germany)², [Jonas Tebart](#) (Germany)¹, [Vitaly Rymanov](#) (Germany)², [Ezgi Abacioglu](#) (Germany)¹ (1. University Duisburg-Essen, 2. Microwave Photonics GmbH)

2pm **ME3.2 (Invited) - Satellite Optical Communications for Beyond 5G/6G...29**
» [Morio Toyoshima](#) (Japan)¹ (1. National Institute of Information and Communications Technology)

2:30pm **ME3.3 (Invited) - Co-Packaged Photonic Transceivers for Satellite Payloads...N/A**
» [Alan Naughton](#) (Ireland)¹ (1. Mbryonics Ltd)

1:30pm **MF3 - MF3: Schnitzel 2 - Laser Stabilization - If you can measure your phase noise, it is too much!**
Opera A
Chaired by: [Daniel J. Blumenthal](#) (United States) and [Nicolas Fontaine](#) (United States)

1:30pm **MF3.1 (Invited) - The Role of Ultrastable Lasers in Insane Science...N/A**

» Lute Maleki (United States)¹ (1. OEwaves, Inc.)

2pm **MF3.2 (Invited) - Portable ultrastable Fabry-Perot optical reference cavities and their applications...N/A**

» Franklyn John Quinlan (United States)¹ (1. National Institute of Standards and Technology)

1:30pm **MG3 -
MG3: PECDP 2 - Hybrid Integration**

Opera B

Chaired by: Mitsuru Takenaka (Japan) and Yuqin Jiao (Netherlands)

1:30pm **MG3.1 (Invited) - Membrane InP-based Lasers and Modulators on Si Platform...N/A**

» Tatsuro Hiraki (Japan)¹, Takuma Aihara (Japan)¹, Yoshiho MAEDA (Japan)¹, Takuro Fujii (Japan)¹, Koji Takeda (Japan)¹, Tomonari Sato (Japan)¹, Shinji Matsuo (Japan)² (1. NTT Device innovation Center, NTT Corporation, 2. NTT Device Technology Labs, NTT Corporation)

2pm **MG3.2 (Invited) - High Speed Photonic Electronic Heterogeneous Integration based on Al-Al Wafer Bonding...N/A**

» Matthias Wietstruck (Germany)¹, Sebastian Schulze (Germany)¹, Anna Peczek (Germany)¹, Georg Winzer (Germany)¹, Christian Mai (Germany)¹, Stefan Lischke (Germany)¹, Thomas Voß (Germany)¹, Patrick Krüger (Germany)¹, Mohammad Mahdi Khafaji (Germany)², Lars Zimmerman (Germany)¹ (1. IHP - Leibniz Institute for High Performance Microelectronics, 2. Rohde & Schwarz GmbH & Co. KG)

2:30pm **MG3.3 (Invited) - Photonic Integrated Circuits with Heterogeneous Material Integration and Photonic-Electronic Co-design Technologies toward Multi-Terabit Transceiver...N/A**

» Nobuhiko Nishiyama (Japan)¹ (1. Institute of Science Tokyo / Photonics-Electronics Technology Research Association (PETRA))

3pm **Break & Exhibits**

Galerie

Continued from **Monday, 21 July**

3:30pm **MA4 -**
MA4: SHINE 3 - Optical and Neuromorphic Acceleration for Sustainable Telecommunications
Concorde A
Chaired by: Francesco Da Ros (Denmark) and Mahtab Aghaeipour (Germany)

3:30pm **MA4.1 (Invited) - Photonic computing with lithium niobate integrated photonics - from concepts to products...N/A**
» Victor Brasch (Germany)¹, Gwenaelle Vest (Germany)¹, Niklas Hoppe (Germany)¹, Thomas Brede (Germany)¹, Ole Post (Germany)¹, Andreas Abt (Germany)¹ (1. Q.ANT)

4pm **MA4.2 - Highly scalable photonic-assisted complex-valued dot product computation method...31**
» Hao Sun (Canada)¹, Xinyi Zhu (Canada)¹, José Azaña (Canada)¹ (1. Institut National de la Recherche Scientifique Centre Énergie Matériaux Telecommunications(INRS-EMT) Montréal, Canada)

4:15pm **MA4.3 - Knowledge Distillation for Transformer-Based Nonlinear Equalization in DWDM systems...33**
» Naveenta Gautam (United States)¹, C. Alex Kaylor (United States)¹, Prankush Agarwal (United States)¹, Stephen E. Ralph (United States)¹ (1. Georgia Institute of Technology, Atlanta, GA, 30332, USA)

3:30pm **MB4 -**
MB4: MATCHA 2 - Broadband Front-Ends and Subsystems I
Concorde B
Chaired by: Markus Grözing (Germany) and Nikolaos-Panteleimon Diamantopoulos (Japan)

3:30pm **MB4.1 (Invited) - Parallelism in electronics or optics: a subsystem-level debate...N/A**
» Di Che (United States)¹ (1. Nokia Bell Labs)

4pm **MB4.2 (Invited) - 200 GBaud and above Optical Transceiver...N/A**
» [Peter Schvan](#) (Canada)¹, Yuriy Greshishchev (Canada)¹, Shahab Oveis Gharan (Canada)¹ (1. Ciena)

4:30pm **MB4.3 (Invited) - Broadband ADC/DAC and RF/PIC tradeoffs for electrical-to-optical conversion beyond 200Gbaud...N/A**
» [Ian Dedic](#) (United Kingdom)¹ (1. Cisco)

3:30pm **MC4 -
MC4: LBL 3**
Vendome A
Chaired by: Nithyanandan Kanagaraj (India) and Massimiliano Guasoni (United Kingdom)

3:30pm **MC4.1 (Invited) - Programmable and Scalable Optical Computing with Complex Media...N/A**
» [Uğur Teğın](#) (Türkiye)¹ (1. Koc University)

4pm **MC4.2 (Invited) - Adaptive Beam Steering in Coherent Beam Combining Systems Using Adagrad Optimization for Precision Applications...35**
» Khushboo Soni (India)¹, [Nithyanandan Kanagaraj](#) (India)¹ (1. Ultrafast Fiber Optics & Smart Photonic Technologies Lab Indian Institute of Technology Hyderabad Hyderabad, India)

4:30pm **MC4.3 (Invited) - Ganaration of optical quasiparticles from lasers...38**
» [Takashige Omatsu](#) (Japan)¹ (1. Molecular Chirality Research Center, Chiba University Chiba, Japan)

3:30pm **ME4 -
MD4: IQPS 3 - Quantum Non-linear Photonics I**
Vendome B
Chaired by: Stephan Reitzenstein (Germany) and Chigo Okonkwo (Netherlands)

3:30pm **MD4.1 (Invited) - Ultrafast Quantum Nanophotonic Circuits...N/A**
» [Alireza Marandi](#) (United States)¹ (1. California Institute of Technology)

Continued from **Monday, 21 July**

- 4pm **MD4.2 (Invited) - Scalable generation of squeezed light: from device to application...N/A**
» [Linran Fan](#) (United States)¹ (1. The University of Texas at Austin)
- 4:30pm **MD4.3 - High-Frequency Diamond Optomechanical Crystal Cavities for Optical Frequency Comb Generation...40**
» [Elham Zohari](#) (Canada)¹, [Waleed El-Sayed](#) (Canada)², [Ahmas El-Hamamsy](#) (Canada)², [Peyman Parsa](#) (Canada)², [Joseph E. Losby](#) (Canada)², [Paul E. Barclay](#) (Canada)² (1. Department of Physics University of Alberta Edmonton, Canada, 2. Department of Physics and Astronomy University of Calgary Calgary, Canada)
- 4:45pm **MD4.4 (Invited) - An Adaptive Frequency Network: Parallel processing of frequency-bin entangled photons from a 21 GHz SOI micro-resonator enhanced through reconfigurability...N/A**
» [Nadia Belabas](#) (France)¹ (1. Centre national de la recherche scientifique (CNRS))
- 3:30pm **ME3 -**
ME4: OA6G 3 - Emerging Signal Transmission Evaluations
Odeon A
Chaired by: [Despoina Petousi](#) (Germany) and [Argyrios Kokkinis](#) (Greece)
- 3:30pm **ME4.1 (Invited) - Transmission Performance Degrading Effects in Joint Communication and Fiber Sensing Scenarios...42**
» [Lutz Rapp](#) (Germany)¹, [Dimitar Kroushkov](#) (Germany)² (1. Advanced Technology Adtran Networks SE 98617 Meiningen, Germany, 2. Advanced Technology Adtran Networks SE 12489 Berlin, Germany)
- 4pm **ME4.2 - EGN Method for NLI Estimation in Digital Subcarrier Allocation for Horseshoe Networks...44**
» [Tiago Silvério](#) (Germany)¹, [Giuseppe Parisi](#) (Germany)¹, [Pablo Torres Ferrera](#) (Germany)¹, [Antonio Napoli](#) (Germany)¹ (1. Nokia Munich, Germany)

4:15pm

ME4.3 - End-to-End Filter Training for Optimized Pulse Shaping in oDAC-based Transceivers...46

» Konstantinos Moschopoulos (Greece)¹, Stylianos Sygletos (United Kingdom)², Nelson Castro (United Kingdom)², Moshe Nazarathy (Israel)³, Ioannis Tomkos (Greece)¹ (1. Department of Electrical Engineering University of Patras Patras, Greece, 2. Aston Institute of Photonic Technologies (AIPT) Birmingham, UK, 3. Department of Electrical Engineering Technion Haifa, Israel)

4:30pm

ME4.4 - Free-Running Lasers Scheme for Millimeter-Wave Generation using Phase Modulation...48

» Jaime Romero Huedo (Spain)¹, Jose Mora (Spain)¹, Beatriz Ortega (Spain)¹, Luis Vallejo (United Kingdom)² (1. Instituto de Telecomunicaciones y aplicaciones multimedia

Universitat Politecnica de Valencia Valencia, Spain, 2. Digital Signal Processing Centre of Excellence

School of Electronic Engineering Bangor University Bangor, United Kingdom)

4:45pm

ME4.5 (Invited) - SMART photonics PDK solutions for Data centers and PON technologies...N/A

» Mohamad Dernaika (Netherlands)¹ (1. SMART Photonics)

3:30pm

MF4 -

MF4: Schnitzel 3 - Precision Applications

Opera A

Chaired by: Nicolas Fontaine (United States) and Daniel J. Blumenthal (United States)

Continued from **Monday, 21 July**

3:30pm **MF4.1 (Invited) - Optical frequency division with integrated photonics...N/A**
» Xu Yi (United States)¹, Shuman Sun (United States)¹, Beichen Wang (United States)¹, Mark Harrington (United States)², Kaikai Liu (United States)², Ruxuan Liu (United States)¹, Fatemeh Tabatabaei (United States)¹, Samin Hanifi (United States)¹, Zijiao Yang (United States)¹, Karl Nelson (United States)³, Paul Morton (United States)⁴, Steven Bowers (United States)¹, Andreas Beling (United States)¹, Daniel J. Blumenthal (United States)², Jiawei Wang (United States)² (1. university of Virginia, 2. University of California, Santa Barbara, 3. Honeywell International, 4. Infleqtion)

4pm **MF4.2 (Invited) - Stable Lasers for Precision Optical Fiber Sensing...50**
» Mohamad Hossein Idjadi (United States)¹, Stefano Grillanda (United States)¹, Farshid Ashtiani (United States)¹, Kaikai Liu (United States)², Nicolas Fontaine (United States)¹, Mikael Mazur (United States)¹, Kwangwoong Kim (United States)¹, Mark Cappuzzo (United States)¹, Daniel J. Blumenthal (United States)² (1. Nokia Bell Labs Murray Hill, NJ, USA, 2. University of California at Santa Barbara Santa Barbara, CA, USA)

4:30pm **MF4.3 (Invited) - Heterogeneous Integration of MEMS and Photonic Integrated Circuits for Chip-scale Atomic Spectrometers...52**
» J. Januszewicz (United Kingdom)¹, A. P. McWilliams (United Kingdom)², S. Dyer (United Kingdom)², J. P. McGilligan (United Kingdom)², P. F. Griffin (United Kingdom)², E. Riis (United States)², E. Di Gaetano (United Kingdom)¹, M. Sorel (United Kingdom)¹, K. Gallacher (United States)¹, D. J. Paul (United Kingdom)¹ (1. University of Glasgow,

James Watt School of Engineering, U.K., 2. University of Strathclyde, Department of Physics, SUPA, U.K.)

3:30pm **MG4 -
MG4: PECDP 3 - Wireless Communications
Opera B**
Chaired by: Yuqin Jiao (Netherlands) and Mitsuru Takenaka (Japan)

3:30pm **MG4.1 (Invited) - System co-integration of photonics and electronics for THz communications...N/A**
» Bruno Cimoli (Netherlands)¹, Gleb Nazarikov (Netherlands)¹, Simon Rommel (Netherlands)¹, Yuqin Jiao (Netherlands)¹, Idelfonso Tafur Monroy (Netherlands)¹ (1. Eindhoven University of Technology)

4pm **MG4.2 (Invited) - High-Speed Photonic Convolution with Direct 300 GHz Wireless Output...55**
» Takasumi Tanabe (Japan)¹, Ayaka Yomoda (Japan)¹, Ko Sato (Japan)¹, Mantaro Imamura (Japan)¹, Junnosuke Kokubu (Japan)¹, Shun Fujii (Japan)² (1. Department of Electronics and Electrical Engineering

Keio University
Yokohama, Japan, 2. Department of Physics

Keio University
Yokohama, Japan)

4:30pm **MG4.3 (Invited) - Integrated Photonics Technology for Realizing Large-scale AI Systems...N/A**
» Joyce Poon (Canada)¹ (1. Lightmatter / University of Tront)

6pm **Welcome Reception**
Galerie

Tuesday, 22 July

8am **TuB1 -
TuB1: MATCHA 3 - Multi-Channel Parallelization**
Concorde B
Chaired by: Nikolaos-Panteleimon Diamantopoulos (Japan) and Markus Grözing (Germany)

8am **TuB1.1 (Invited) - Scalable surface normal optical coherent receiver array for space-wavelength division multiplexing...N/A**
» Haoshuo Chen (United States)¹ (1. Nokia Bell Labs)

8:30am

TuB1.2 (Invited) - Versatile Multi-Channel Optical Transceivers for Efficient Wideband Satellite Communications...N/A

» [David O. Caplan](#) (United States)¹, Z. J. Darling (United States)¹, M. E. Grein (United States)¹, D. Goldfinger (United States)¹, M. Guyton (United States)¹, N. Paramar (United States)¹, D. Russo (United States)¹, Brian Tyrrell (United States)¹, A. Wagner (United States)¹, K. K. Berggren (United States)², D. J. Paul (United States)² (1. MIT Lincoln Laboratory, 2. Massachusetts Institute of Technology)

9am

TuB1.3 - Power-Efficient SOA/Comb-Based Architectures for Coherent Intra-Data Center Links Beyond 1 Tb/s...57

» [Arman Safarnejadian](#) (Canada)¹, Wei Shi (Canada)¹, Leslie A. Rusch (Canada)¹, Ming Zeng (Canada)¹ (1. Centre for Optics, Photonics and Lasers (COPL), ECE Department Laval University, Quebec, Canada)

9:15am

TuB1.4 - Design of a PANDA-type Highly Elliptical Core Few-Mode Fiber for Mode Multiplexing...59

» [Samuel Gougeon](#) (Canada)¹, Bora Ung (Canada)², Sophie LaRoche (Canada)¹ (1. Centre d'optique, photonique et lasers (COPL), 2. École de technologie supérieure, Montréal (QC), Canada)

9:30am

TuB1.5 (Invited) - Multi-Channel Parallelization...N/A

» [Roland Ryf](#) (United States)¹ (1. Nokia Bell Labs)

8am

**TuC1 -
TuC1: LBL 4
Vendome A**

Chaired by: Massimiliano Guasoni (United Kingdom) and Nithyanandan Kanagaraj (India)

8am

TuC1.1 (Keynote) - Machine learning for experiments and theory in nonlinear fiber optics...N/A

» [John M. Dudley](#) (France)¹, Andrei Ermolaev (France)¹, Mathilde Hary (Finland)², Piotr Ryczkowski (Finland)², Lev Leybov (Finland)², Anas Skalli (France)¹, Christophe Finot (France)³, Daniel Brunner (France)¹, Goery Genty (Finland)² (1. Université Marie et Louis Pasteur, CNRS FEMTO-ST, 2. Tampere University, 3. Université Bourgogne Europe, CNRS ICB)

8:45am

TuC1.2 (Invited) - Spatial beam cross-cleaning in multimode fibers...61

» [Mario Ferraro](#) (Italy)¹, Yago Arosa (Spain)², Tigran Mansuryan (France)³, Fabio Mangini (Italy)⁴, Katarzyna Krupa (Poland)⁵, Vincent Couderc (France)³, Jean Louis Auguste (France)³, Alessandro Tonello (France)³, Stefan Wabnitz (Italy)⁴ (1. Department of Physics University of Calabria Rende, 87036, Italy, 2. Universida de Santiago de Compostela 15782 Santiago de Compostela, Spain, 3. XLIM, UMR CNRS 7252 University of Limoges 87060 Limoges, France, 4. DIET Sapienza University of Rome Rome, 00184, Italy, 5. Institute of Physical Chemistry Polish Academy of Sciences 01-224 Warsaw, Poland)

9:15am

TuC1.3 (Invited) - Intermodal nonlinear effects in integrated waveguides...N/A

» [Cosimo Lacava](#) (Italy)¹ (1. University of Pavia)

9:45am

TuC1.4 - Sagnac Superresolution Gyroscope Using Polarization-basis Projection Measurements...63

» [Byoung S. Ham](#) (Korea, Republic of)¹ (1. Department of Electrical Engineering and Computer Science Gwangju Institute of Science and Technology Gwangju, South Korea)

8:30am

TuA1 -

TuA1: SHINE 4 - Brain-Inspired Neural Networks Applications

Concorde A

Chaired by: Mahtab Aghaeipour (Germany) and Colja Schubert (Germany)

Continued from **Tuesday, 22 July**

8:30am **TuA1.2 (Invited) - Photonic Reservoir Equalization in Coherent Transmission Systems...N/A**

» [Sarah Masaad](#) (Belgium)¹, [Stijn Sackesyn](#) (Belgium)¹, [Stylios Sygletos](#) (United Kingdom)², [Peter Bienstman](#) (Belgium)¹ (1. Ghent University, 2. Aston University)

9am **TuA1.3 (Invited) - Repurposing telecom devices for optical computing...N/A**

» [Egor Manuylovich](#) (United Kingdom)¹ (1. Aston University)

8:30am **TuE1 -**

TuE1: OA6G 4 - Fiber Sensing in PONs

Odeon A

Chaired by: [Chris Vagionas](#) (Greece) and [Argyrios Kokkinis](#) (Greece)

8:30am **TuE1.1 (Invited) - Perspectives for Realistic Fiber Sensing over Passive Optical Networks...65**

» [Sterenn Guerrier](#) (France)¹, [Sandip Das](#) (Germany)², [Michael Straub](#) (Germany)², [Christoph Fuellner](#) (Germany)², [Jochen Maes](#) (Belgium)³ (1. Fixed Networks department,

Nokia Bell Labs
Massy, France, 2. Fixed Networks department,

Nokia Bell Labs
Stuttgart, Germany, 3. Fixed Networks department,

Nokia Bell Labs
Antwerp, Belgium)

9am **TuE1.3 (Invited) - Microwave frequency fiber interferometry as a low-complexity fiber optics sensing technique in access networks...N/A**

» [A. Bogris](#) (Greece)¹, [George Aias Karydis](#) (Greece)¹, [Iraklis Simos](#) (Greece)¹, [Stavros Deligiannidis](#) (Greece)¹, [Christos Simos](#) (Greece)², [C. Mesaritakis](#) (Greece)¹ (1. University of West Attica, 2. University of Thessaly)

9:30am

TuE1.4 (Invited) - Joint communication and sensing in access networks for anthropic activities monitoring and real-time safety surveillance...68

» Pierpaolo Boffi (Italy)¹, Marco Fasano (Italy)¹, Andrea Madaschi (Italy)¹, Paola Parolari (Italy)¹ (1. Dept. Electronics, Information and Bioengineering POLITECNICO di MILANO Milan, Italy)

8:30am

TuF1 -

TuF1: Schnitzel 4 - Stabilized Lasers for Light Matter Sciences II

Opera A

Chaired by: Daniel J. Blumenthal (United States) and Nicolas Fontaine (United States)

8:30am

TuF1.1 (Invited) - Advances in ultra-stable VECSELS...N/A

» Jennifer Hastie (United Kingdom)¹, Charlotte A. Hodges (United Kingdom)¹, Steven Anderson (United Kingdom)¹, Paulo H. Moriya (United Kingdom)¹ (1. Institute of Photonics, Department of Physics, University of Strathclyde)

9am

TuF1.2 (Invited) - Compact microfabricated optical frequency references...N/A

» Matthew Hummon (United States)¹, Yorick Andeweg (United States)², Yang Li (United States)², John Kitching (United States)³ (1. National Institute of Standards and Technology, 2. NIST Boulder Laboratories, and University of Colorado Boulder, Physics, 3. NIST Boulder Laboratories)

9:30am

TuF1.3 (Invited) - High power rare-earth doped integrated sources...N/A

» Franz X. Kärtner (Germany)¹, Neetesh Kumar Singh (Germany)¹ (1. Deutsches Elektronen Synchrotron)

8:45am

TuD1 -

TuD1: IQPS 4 - Quantum Communications and Signal Processing

Vendome B

Chaired by: Chigo Okonkwo (Netherlands) and Frederic Grillot (France)

Continued from **Tuesday, 22 July**

8:45am **TuD1.1 (Keynote) - Error Correction and Key Reconciliation for Quantum Key Distribution...N/A**
» [Laurent Schmalen](#) (Germany)¹, Erdem Eray Cil (Germany)¹, Jonas Berl (Germany)² (1. Karlsruhe Institute of Technology (KIT), 2. Adva Network Security)

9:30am **TuD1.2 (Invited) - Advanced CV-QKD systems leveraging probabilistic constellation shaping...N/A**
» [Amirhossein Ghazisaeidi](#) (France)¹ (1. Nokia Bell Labs)

9am **TuG1 -
TuG1: PECDP 4 - Photonic Computing**
Opera B
Chaired by: Naoki Suzuki (Japan) and Keita Mochizuki (Japan)

9am **TuG1.2 (Invited) - Universal Neuromorphic Computing with Linear Photonic Circuits...70**
» [Keisuke Kojima](#) (United States)¹, Toshiaki Koike-Akino (United States)², Mari Taguchi (Japan)³ (1. Boston Quantum Photonics Weston, MA 02493, USA, 2. Mitsubishi Electric Research Laboratories Cambridge, MA 02139, USA, 3. IT R&D Center Mitsubishi Electric Corporation Kamakura, Kanagawa 247-8501, Japan)

9:30am **TuG1.3 (Invited) - Si photonics for co-packaged optics...N/A**
» [Masaki Kato](#) (United States)¹ (1. Marvell)

10am **Break & Exhibits**
Galerie

10:30am **TuA2 -
TuA2: SHINE 5 - Photonic Accelerators**
Concorde A
Chaired by: Francesco Da Ros (Denmark) and Naveenta Gautam (United States)

10:30am **TuA2.1 (Invited) - Automated design of photonic accelerators for machine learning...N/A**

» [Wolfer Peelaers](#) (Belgium)¹ (1. Hewlett Packard Labs)

11am **TuA2.2 (Invited) - Integrated magneto-optics for in-memory optical computing...N/A**

» [Paolo Pintus](#) (Italy)¹ (1. Department of Physics, University of Cagliari)

11:30am **TuA2.3 (Invited) - Hybrid neural networks for functional devices...N/A**

» [Elena Goi](#) (China)¹ (1. University of Shanghai)

10:30am **TuB2 -
TuB2: MATCHA 4 - InP and Heterogeneous Integration**

Concorde B

Chaired by: Nikolaos-Panteleimon Diamantopoulos (Japan) and Markus Grözing (Germany)

10:30am **TuB2.1 (Invited) - Wide-Bandwidth Electro-Absorption Modulator Integrated Laser Diode toward 400-Gb/s/lane Optical Communication...N/A**

» [Asami Uchiyama](#) (Japan)¹, Shinya Okuda (Japan)¹, Kei Masuyama (Japan)¹, Takeshi Yamatoya (Japan)¹, Yasuhiro Yamauchi (Japan)¹ (1. Mitsubishi Electric Corporation)

11am **TuB2.2 (Invited) - Indium Phosphide Platform for High-Speed Optical Transceivers...72**

» [Patrick Runge](#) (Germany)¹, Michael Theurer (Germany)¹, Alexander Schindler (Germany)², Gerrit Fiol (Germany)¹, Jonas Gläsel (Germany)¹, Martin Schell (Germany)¹ (1. Fraunhofer HHI Berlin, Germany, 2. Technical University of Berlin Berlin, Germany)

11:30am **TuB2.3 (Invited) - Heterogeneously Integrated III-V-on-Si Membrane Transmitters...N/A**

» [Shinji Matsuo](#) (Japan)¹ (1. NTT Device Technology Laboratories)

Continued from **Tuesday, 22 July**

- 12pm **TuB2.4 (Invited) - Large-Scale Integrated Photonics for Heterogenous Computing Systems...74**
» [Bassem Tossoun](#) (United States)¹, Luca Ramini (United States)¹, Geza Kurczveil (United States)¹, Marco Fiorentino (United States)¹, Di Liang (United States)², Raymond G. Beausoleil (United States)¹ (1. Hewlett Packard Labs

Hewlett Packard Enterprise
Santa Barbara, CA, USA, 2. Electrical Engineering and Computer Science Department

University of Michigan
Ann Arbor, MI, USA)
- 10:30am **TuC2 -
TuC2: LBL 5**
Vendome A
Chaired by: Massimiliano Guasoni (United Kingdom) and Nithyanandan Kanagaraj (India)
- 10:30am **TuC2.2 (Invited) - Enhanced nonlinear generation in dielectric nanoantennas...N/A**
» [Davide Rocco](#) (Italy)¹ (1. University of Brescia)
- 10:30am **TuD2 -
TuD2: IQPS 5 - Quantum Opto-Electronics II**
Vendome B
Chaired by: Marek Osinski (United States) and Laurent Schmalen (Germany)
- 10:30am **TuD2.2 (Invited) - Integrated photonic Galton board and its application for photon number resolved detection...N/A**
» [Hong Tang](#) (United States)¹ (1. Department of Electrical and Computer Engineering, Yale University)
- 11am **TuD2.3 (Keynote) - Spins and Photons for Quantum Information...N/A**
» [Loic Lanco](#) (France)¹ (1. University of Paris)

10:30am **TuE2 -**
TuE2: NLD 1 - Semiconductor Lasers: Design and Modelling
Odeon A
Chaired by: Sylvain Barbay (France) and Neil G. R. Broderick (New Zealand)

10:30am **TuE2.1 (Invited) - Coherent pulse interactions in mode-locked semiconductor lasers...N/A**

» [Svetlana Gurevich](#) (Germany)¹ (1. University of Münster)

11am **TuE2.2 (Invited) - Hierarchical self-assembly of Brownian particle-like pulses in a modelocked laser...N/A**

» [Omer Ilday](#) (Germany)¹ (1. Ruhr University Bochum)

11:30am **TuE2.3 (Invited) - Fabrication of VerticalCavity Surface Emitting Lasers...76**

» [Anna Szerling](#) (Poland)¹, [Karolina Olucha](#) (Poland)¹, [Wioleta Słaba](#) (Poland)¹, [Karolina Bogdanowicz](#) (Poland)¹, [Weronika Głowadzka](#) (Poland)¹, [Marcin Gebski](#) (Poland)², [Magdalena Zadura](#) (Poland)¹, [Marek Ekielski](#) (Poland)¹, [Tomasz Czyszanowski](#) (Poland)² (1. Łukasiewicz– Institute of Microelectronics and Photonics Warsaw, Poland, 2. Institute of Physics, Lodz University of Technology Łódź, Poland)

10:30am **TuF2 -**
TuF2: Schnitzel 5 - Laser Integration Technologies and Platforms

Opera A

Chaired by: Nicolas Fontaine (United States) and Daniel J. Blumenthal (United States)

10:30am **TuF2.1 (Invited) - Hybrid and Heterogeneous Integration Technologies for Laser Applications...N/A**

» [Michael J. Strain](#) (United Kingdom)¹ (1. University of Strathclyde)

11am **TuF2.2 (Invited) - Challenges and perspectives of narrow-linewidth tunable lasers for coherent transmission links...N/A**

» [Theo Veroleet](#) (United States)¹ (1. Nokia)

Continued from **Tuesday, 22 July**

10:30am **TuG2 -
TuG2: PECDP 5 - Compound Semiconductor Devices**
Opera B
Chaired by: Keita Mochizuki (Japan) and Naoki Suzuki (Japan)

10:30am **TuG2.1 (Invited) - InP photonics and InP-DHBT electronics co-integration for high capacity and scalable datacenter interconnect applications...N/A**
» Maria Spyropoulou (Greece)¹, George Brestas (Greece)¹, Giannis Kanakis (Greece)¹, Yuqin Jiao (Netherlands)², Salim Abdi (Netherlands)², Zhaowei Chen (Netherlands)², Desalegn Feyisa (Netherlands)², Ripalta Stabile (Netherlands)², Nicola Calabretta (Netherlands)², Kevin Williams (Netherlands)², Virginie Nodjiadjim (France)³, Romain Hersent (France)³, Agnieszka Konczykowska (France)³, Muriel Riet (France)³, Richard Schatz (Sweden)⁴, Oskars Ozolins (Sweden)⁵, Xiaodan Pang (Sweden)⁵, Mahdieh Joharifar (Sweden)⁴, Jakub Zvěřina (Czechia)⁶, Martin Žoldák (Czechia)⁶, Boaz Atias (Israel)⁷, Paraskevas Bakopoulos (Greece)⁸, Elad Mentovich (Israel)⁷, Hercules Avramopoulos (Greece)¹ (1. Photonics Research Communications Laboratory, School of Electrical and Computer Engineering, National Technical University of Athens, 2. Eindhoven Hendrik Casimir Institute (EHCI), Eindhoven University of Technology, 3. III-V Lab, Palaiseau Cedex, 4. School of SCI, KTH Royal Institute of Technology, Kista, 5. RISE Research Institutes of Sweden AB, Kista, 6. Argotech A.S., Trutnov, 7. NVIDIA, Yokneam, 8. NVIDIA, Athens)

11am **TuG2.2 (Invited) - 400Gbps PAM4 EA-DFB Lasers for Cloud/AI Network...N/A**
» Kazuhiko Naoe (Japan)¹, Hideaki Asakura (Japan)¹, Syunya Yamauchi (Japan)¹, Takanori Suzuki (Japan)¹, Yoshihiro Nakai (Japan)¹, Yoriyoshi Yamaguchi (Japan)¹, Shuhei Ohno (Japan)¹, Ryosuke Hatai (Japan)¹, Noriko Sasada (Japan)¹ (1. Lumentum Japan)

11:30am **TuG2.3 (Invited) - EML assemblies for high bandwidth applications...N/A**
» Mizuki Shirao (Japan)¹, Takuma Fujita (Japan)¹, Shinya Okuda (Japan)¹, Asami Uchiyama (Japan)¹, Takumi Nagamine (Japan)¹, Kenichi Abe (Japan)¹, Nobuo Ohata (Japan)¹ (1. Mitsubishi Electric Corp.)

12pm

Lunch
Galerie

1:30pm

TuA3 -
TuA3: SHINE 6 - Unconventional Computing
Concorde A
Chaired by: Francesco Da Ros (Denmark) and Naveenta Gautam (United States)

1:30pm

TuA3.1 (Invited) - Photonic spiking neurons and neural networks for fast and efficient neuromorphic technologies...N/A
» Antonio Hurtado (United Kingdom)¹, [Joshua Robertson](#) (United Kingdom)¹ (1. University of Strathclyde)

2pm

TuA3.2 (Invited) - Computing with light and sound...N/A
» [Birgit Stiller](#) (Germany)¹ (1. Max Planck Institute for the science of light)

2:30pm

TuA3.3 (Invited) - Unidirectional spiking neuron via Non-Hermitian microring...N/A
» [Stefano Biasi](#) (Italy)¹, Alessio Lugnan (Italy)¹, Alessandro Foradori (Italy)², Lorenzo Pavesi (Italy)¹ (1. Nanoscience Laboratory, Department of Physics, University of Trento, 38123 Trento, Italy, 2. Photonics Research Group, INTEC-department, Ghent University-imec, Belgium)

1:30pm

TuC3 -
TuC3: LBL 6
Vendome A
Chaired by: Nithyanandan Kanagaraj (India) and Massimiliano Guasoni (United Kingdom)

1:30pm

TuC3.1 (Invited) - Intermodal nonlinear interaction of waves in integrated silicon-rich silicon nitride devices...N/A

» Periklis Petropoulos (United Kingdom)¹, Valerio Vitali (Italy)², Thalia Dominguez-Bucio (United Kingdom)¹, Hao Liu (United Kingdom)¹, Kyle Bottrill (United Kingdom)¹, Jose Manuel Luque Gonzalez (Spain)³, Alejandro Ortega-Monux (Spain)³, Glenn Churchill (United Kingdom)¹, James C. Gates (United Kingdom)¹, James Hillier (United Kingdom)⁴, Nikolaos Kalfagiannis (United Kingdom)⁴, Daniele Melati (France)⁵, Jens H. Schmid (Canada)⁶, Ilaria Cristiani (Italy)², Pavel Cheben (Canada)⁶, J. Gonzalo Wanguemert-Perez (Spain)³, Inigo Molina-Fernandez (Spain)³, Cosimo Lacava (Italy)², Frederic Gardes (United Kingdom)¹ (1. University of Southampton, 2. University of Pavia, 3. University of Malaga, 4. Nottingham Trent University, 5. Universite Paris-Saclay, 6. National Research Council)

2pm

TuC3.2 (Invited) - Multimode Nonlinear Fiber optics for High Dimensional Quantum Entanglement...N/A

» Siddharth Ramachandran (United States)¹ (1. Boston University)

2:30pm

TuC3.3 (Invited) - Broadband UV-to-visible frequency comb generation in MgO:PPLN waveguides for astrophotonic applications...N/A

» Yuk Shan Cheng (United Kingdom)¹, Kamalesh Dadi (United Kingdom)¹, Toby Mitchell (United Kingdom)¹, Samantha Thompson (United Kingdom)², Nikolai Piskunov (Sweden)³, Lewis D. Wright (United Kingdom)⁴, Corin B. E. Gawith (United Kingdom)⁵, Richard A. McCracken (United Kingdom)¹, Derryck T. Reid (United Kingdom)¹ (1. Institute of Photonics and Quantum Sciences, Heriot-Watt University, Edinburgh EH14 4AS, United Kingdom, 2. Astrophysics Group, Cavendish Laboratory, J.J. Thomson Avenue, Cambridge, CB3 0HE, United Kingdom, 3. Department of Physics and Astronomy, Uppsala University, Box 516, 751 20 Uppsala, Sweden, 4. Covesion Ltd, Unit F3, Adanac North, Adanac Drive, Nursling, Southampton, SO16 0BT, United Kingdom, 5. Optoelectronics Research Centre, University of Southampton, Southampton, Hampshire SO17 1BJ, United Kingdom)

1:30pm

TuD3 -

TuD3: IQPS 6 - Hybrid Quantum Sensing and Systems

Vendome B

Chaired by: Paolo Pintus (Italy) and Kadir Gumus (Netherlands)

1:30pm

TuD3.1 (Invited) - Magnetic sensing with group-IV defects in diamond...N/A

» Erika Janitz (Canada)¹, Benjamin Graham (Canada)¹, Pooja Woosaree (Canada)¹ (1. University of Calgary)

1:30pm

TuE3 -

TuE3: OA6G 5 - FSO/Mmwave Fronthaul Infrastructure I

Odeon A

Chaired by: Chris Vagionas (Greece) and A. Bogris (Greece)

1:30pm

TuE3.1 (Invited) - Cellular Mobile Communications Using FSO Technologies...77

» Gihong Park (Korea, Republic of)¹, Hoon Kim (Korea, Republic of)¹ (1. School of Electrical Engineering

KAIST
Daejeon, South Korea)

2pm

TuE3.2 (Invited) - Flexible End-to-End Orchestrated Allocation of Computing and Fiber-Wireless FSO/mmWave Networking Resources for 6G Networks...79

» Argyris Kokkinis (Greece)¹, Chris Vagionas (Greece)², Maria Vargemidou (Greece)², Marios Gatzianas (Greece)², Pietro Piscione (Italy)³, Ahmed Khalil Abdulwahed (Italy)³, George Kalfas (Greece)², Agapi Mesodiakaki (Greece)², Kostas Siozios (Greece)¹, Nikos Pleros (Greece)², Amalia Miliou (Greece)² (1. Department of Physics, Aristotle University of Thessaloniki, Greece, 2. Department of Informatics, Aristotle University of Thessaloniki, Greece, 3. Nextworks, Pisa, Italy)

2:30pm

TuE3.3 (Invited) - Confluent Edge Networks: Challenges and Opportunities...N/A

» Paolo Monti (Sweden)¹ (1. Chalmers University of Technology)

Continued from **Tuesday, 22 July**

1:30pm **TuF3 -
TuF3: Schnitzel 6 - Stability of Solid and Hollow Core Fibers**
Opera A
Chaired by: Daniel J. Blumenthal (United States) and Nicolas Fontaine (United States)

1:30pm **TuF3.1 (Invited) - Ultra-stable laser with hollow-core fibres...N/A**
» Zitong Feng (United Kingdom)¹ (1. National Physical Laboratory)

2pm **TuF3.2 (Invited) - Compact Fiber Delay Line Systems for Ultrastable Laser and Frequency Comb Stabilization...N/A**
» Jungwon Kim (Korea, Republic of)¹ (1. Korea Advanced Institute of Science and Technology (KAIST) Daejeon, Korea)

2:30pm **TuF3.3 - Self-injection of fiber frequency combs with reference cavities...83**
» Kevin F. Lee (United States)¹, Jacob Lampen (United States)¹, Peng Li (United States)¹, Jie Jiang (United States)¹, Martin E. Fermann (United States)¹ (1. IMRA America Inc. Ann Arbor, USA)

2:45pm **Open Discussion**
» * * (United States)¹ (1. no affiliation)

1:30pm **TuG3 -
TuG3: PECDP 6 - Platform Technologies for Photonics-Electronics Convergence**
Opera B
Chaired by: Anthony J. Rizzo (United States) and Mitsuru Takenaka (Japan)

1:30pm **TuG3.1 (Invited) - Photonics-Electronics Convergence in Design and Simulation...N/A**
» Xu Wang (Canada)¹ (1. Cadence Design Systems)

2pm

TuG3.2 (Invited) - Electronic-photonic platforms for the control of programmable Silicon Photonic chips...85

» Francesco Zanetto (Italy)¹, Alessandro di Tria (Italy)¹, Francesco Morichetti (Italy)¹, Emanuele Sacchi (Italy)¹, Giorgio Ferrari (Italy)¹, Andrea Melloni (Italy)¹, Monica Crico (Italy)¹, Marco Sampietro (Italy)¹ (1. Politecnico di Milano - DEIB Milano, Italy)

2:30pm

TuG3.3 (Invited) - Carrier Photogeneration Impact on Ring Dynamics...87

» Nikola Nedovic (United States)¹, Nandish Mehta (United States)¹, Angad Rekhi (United States)¹, Liron Gantz (Israel)¹ (1. NVIDIA Corp. Santa Clara, CA, USA)

3pm

Break & Exhibits

Galerie

3:30pm

TuA4 -

TuA4 Shine 7: Panel Discussion: AI-assisted Optical Communications from the Current Status to Future Outlooks, Challenges, and Developments

Concorde A

Chaired by: Mahtab Aghaeipour (Germany) and Francesco Da Ros (Denmark)

3:30pm

TuB4 -

TuB4: MATCHA 5 - High-Speed Modulators and Photodiodes

Concorde B

Chaired by: Hidetaka Nishi (Japan) and Qian Hu (United States)

3:30pm

TuB4.1 (Invited) - Plasmonics for highest-speed communications...N/A

» Juerg Leuthold (Switzerland)¹ (1. ETH Zurich)

Continued from **Tuesday, 22 July**

4pm

TuB4.2 (Invited) - Ultra-Fast Germanium Modulators and Photodiodes...N/A

» Stefan Lischke (Germany)¹, Daniel Steckler (Germany)¹, Lars Zimmerman (Germany)¹ (1. IHP - Leibniz-Institut für innovative Mikroelektronik)

4:30pm

TuB4.3 (Invited) - Thin-film lithium niobate photonic transmitter integrated with InP membrane devices...N/A

» Hidetaka Nishi (Japan)¹, Yoshiho MAEDA (Japan)¹, Shinji Matsuo (Japan)¹ (1. NTT Corporation)

3:30pm

**TuC4 -
TuC4: NLD 2 - Fibre Lasers**

Vendome A

Chaired by: Neil G. R. Broderick (New Zealand) and Sylvain Barbay (France)

3:30pm

TuC4.1 (Invited) - Emerging Mid-IR Fiber Lasers Based on Hollow-core Fiber...N/A

» Darren D. Hudson (United States)¹ (1. CREOL, The College of Optics & Photonics, University of Central Florida
4304 Scorpius Street, Orlando FL 32816)

4pm

TuC4.2 (Invited) - Soliton zoo in a fibre laser - an infinite family of novel nonlinear pulses...N/A

» Antoine Runge (Australia)¹ (1. The University of Sydney)

4:30pm

TuC4.3 (Invited) - Short cavity Raman-Brillouin laser dynamics using phase-shift Fiber Bragg Gratings...N/A

» Peter G.R. Smith (United Kingdom)¹, Rex Bannerman H (United Kingdom)¹, Devin Smith H (United Kingdom)¹, James Gates C (United Kingdom)¹, Alan C. Gray (United Kingdom)¹, Corin Gawith BE (United Kingdom)¹, Neil G. R. Broderick (New Zealand)² (1. University of Southampton, 2. University of Auckland)

5pm

TuC4.4 (Invited) - Regenerative vectorial breathers in a delay-coupled excitable microlaser with integrated saturable absorber...N/A

» Stefan Ruschel (United Kingdom)¹, Venkata A. Pammi (France)², Rémy Braive (France)², Isabelle Sagnes (France)², Grégoire Beaudoin (France)², Neil G. R. Broderick (New Zealand)³, Bernd Krauskopf (New Zealand)³, Sylvain Barbay (France)² (1. University of Leeds, 2. Université Paris-Saclay, 3. The University of Auckland)

3:30pm

TuD4 -

TuD4: IQPS 7 - Quantum Information Processing II

Vendome B

Chaired by: Kadir Gumus (Netherlands) and Paolo Pintus (Italy)

3:30pm

TuD4.1 (Invited) - Reconstructing the Amplitude and Phase of Quantum Fields via Direct Detection Using the Kramers-Kronig Relation...N/A

» Nicolas Fabre (France)¹, Thomas Pousset (France)¹, Maxime Federico (France)¹, Romain Alléaume (France)¹ (1. Telecom Paris, Institut Polytechnique de Paris)

4pm

TuD4.2 (Invited) - The promise and challenges of the highly modular approach for quantum information processing...N/A

» David Elkouss (Japan)¹ (1. Okinawa Institute of Science and Technology)

4:30pm

TuD4.3 (Invited) - Quantum position verification with continuous variables...N/A

» Boris Skoric (Netherlands)¹ (1. TU Eindhoven)

3:30pm

TuE4 -

TuE4: OA6G 6 - Metro-Access Networks

Odeon A

Chaired by: Chris Vagionas (Greece) and Argyrios Kokkinis (Greece)

3:30pm

TuE4.1 (Invited) - Modulator Technologies for Next-Generation Coherent Pluggable Modules...89

» Despoina Petousi (Germany)¹, Benjamin Wohlfeil (Germany)¹ (1. Adtran Networks SE
Hermann-Dorner-Allee 91, 12489 Berlin)

Continued from **Tuesday, 22 July**

4pm **TuE4.2 (Invited) - Enabling Reliable Spectrum Sharing in OSaaS Networks using Machine Learning-Based Interference Detection...N/A**
» Agastya Raj (Ireland)¹, Marco Ruffini (Ireland)¹ (1. Trinity College Dublin)

4:30pm **TuE4.3 - Statistical Evaluation of Lightpath Feasibility in Converged Optical Metro-Access Networks...91**
» Ahtisham Ali (Italy)¹, Michela Pollone (Italy)², Andrea Rosso (Italy)¹, Alessandro Galardini (Italy)², Muhammad Umar Masood (Italy)², Vittorio Curri (Italy)¹ (1. Dept. of Electronics and Telecommunications Politecnico di Torino Torino, Italy, 2. Consorzio Top-IX Torino, Italy)

3:30pm **TuF4 -
TuF4: Schnitzel 7 - Environmental Phase Noise on Fibers: Friend or Foe?**
Opera A
Chaired by: Nicolas Fontaine (United States) and Daniel J. Blumenthal (United States)

3:30pm **TuF4.1 (Invited) - A look at current and future low-noise distributed fiberoptic sensing applications...N/A**
» Martin Karrenbach (United States)¹ (1. Seismics Unusual, LLC)

4pm **TuF4.2 (Invited) - Optical frequency dissemination in fiber networks...N/A**
» Jochen Kronjäger (Germany)¹ (1. Physikalisch-Technische Bundesanstalt (PTB))

4:30pm **Open Discussion**
» * * (United States)¹ (1. no affiliation)

3:30pm **TuG4 -
TuG4: PECDP 7 - Optical Link and Interconnect**
Opera B
Chaired by: Anthony J. Rizzo (United States) and Mitsuru Takenaka (Japan)

3:30pm

TuG4.1 (Invited) - A Roadmap Toward Sub 1pJ/b Optical Interconnect...93

» [Shai Cohen](#) (Israel)¹, Benjamin G. Lee (United States)², Sanquan Song (United States)³, Angad Rekhi (United States)³, Peng Sun (United States)³, Nandish Mehta (United States)³, Nikola Nedovic (United States)³, Georgios Kalogerakis (United States)³, Li Xu (United States)³, Thomas H. Greer (United States)⁴, C. Thomas Gray (United States)⁴ (1. NVIDIA Yokneam, Israel, 2. NVIDIA Ridgefield, USA, 3. NVIDIA Santa Clara, USA, 4. NVIDIA Durham, USA)

4pm

TuG4.2 (Invited) - Petascale photonic connectivity for energy efficient computing...N/A

» [Anthony J. Rizzo](#) (United States)¹, Keren Bergman (United States)² (1. Dartmouth College, 2. Columbia University)

4:30pm

TuG4.3 - Exploring Optical Pass-Through Links for Ultra Accelerator Link Topologies...95

» Russ Herrell (United States)¹, [Luca Ramini](#) (Italy)², Marco Fiorentino (United States)², Sri Priya Sundararajan (United States)², Yuan Yuan (United States)², Raymond G. Beausoleil (United States)² (1. Hewlett Packard Labs

Hewlett Packard Enterprise
Fort Collins, USA, 2. Hewlett Packard Labs

Hewlett Packard Enterprise
Milpitas, USA)

Wednesday, 23 July

8:30am

WA1 -

WA1: SHINE 8 - Reservoir and Recurrent Computing

Concorde A

Chaired by: Francesco Da Ros (Denmark) and C. Mesaritakis (Greece)

8:30am

WA1.1 (Invited) - Analyzing Datacom Streams via Photonic Reservoir Computing...N/A

» Stephan Suckow (Germany)¹, Rijil Thomas (India)¹, Enes Seker (Türkiye)¹, Max C. Lemme (Germany)¹, Guillermo von Hünefeld (Germany)², Mahdi Kaveh (Iran, Islamic Republic of)², Colja Schubert (Germany)², David Stahl (Germany)³, Joseph Hopfmüller (Germany)³ (1. AMO GmbH, 2. Fraunhofer HHI and TU Berlin, 3. ID Photonics GmbH)

9am

WA1.2 (Invited) - High-Performance Channel Equalization Schemes Using Photonic Time-Delay Reservoir Computing and Optical Spectrum Slicing...N/A

» Menelaos Skontranis (Greece)¹, Panagiotis Rizomyliotis (Greece)², Francesco Da Ros (Denmark)³, George Sarantoglou (Greece)⁴, Kostas Sozos (Greece)⁴, A. Bogris (Greece)⁵, C. Mesaritakis (Greece)⁶ (1. Department of Informatics & Telematics, Harokopio University of Athens / Department of Information and Communication Systems Engineering, University of the Aegean, 2. Department of Informatics & Telematics, Harokopio University of Athens, 3. Department of Electrical and Photonics Engineering, Technical University of Denmark, 4. Department of Biomedical Engineering, University of West Attica, 5. Department of Informatics & Computer Engineering, University of West Attica, 6. Department of Information and Communication Systems Engineering, University of the Aegean / Department of Biomedical Engineering, University of West Attica)

9:30am

WA1.3 - Automated Coherent Optical Communication System for Experimental ML Dataset Generation...97

» Prankush Agarwal (United States)¹, C. Alex Kaylor (United States)¹, Naveenta Gautam (United States)¹, Stephen E. Ralph (United States)¹ (1. School of ECE, Georgia Institute of Technology, Atlanta, GA, 30332, USA)

9:45am

WA1.4 - In-network Optical Reservoir Computing for Spatial Channel Recovery of Multimode Fibers...99

» Dennis Pohle (Germany)¹, Dominic Fröming (Germany)¹, Jürgen Czarske (Germany)¹, Eduard Jorswieck (Germany)² (1. Chair of Measurement and Sensor Systems Technische Universität Dresden, Germany, 2. Institute for Communications Technology Technische Universität Braunschweig, Germany)

8:30am

WB1 -

WB1: MATCHA 6 - Broadband Front-Ends and Subsystems II

Concorde B

Chaired by: Markus Grözing (Germany) and Nikolaos-Panteleimon Diamantopoulos (Japan)

8:30am

WB1.1 (Invited) - Single-Chip Arbitrary Waveform Generator for Baud Rates up to 108 GS/s in 28 nm FDSOI CMOS...N/A

» Daniel Widmann (Germany)¹, Thomas Veigel (Germany)¹, Tobias Tannert (Germany)¹, Xuan-Quang Du (Germany)¹, Manfred Berroth (Germany)¹, Markus Grözing (Germany)¹ (1. Universität Stuttgart Institut für Elektrische und Optische Nachrichtentechnik)

9am

WB1.2 (Invited) - 448 Gbps Transmissions based on PAM4/6/8...101

» Fabio Pittala (Germany)¹, Hadrien Louchet (Germany)¹, Armands Ostrovskis (Germany)¹ (1. Keysight Technologies Boeblingen, Germany)

9:30am

WB1.3 (Invited) - High-speed integrated optical transceivers...N/A

» Matt Traverso (United States)¹ (1. Marvell)

8:30am

WC1 -

WC1: LBL 7

Vendome A

Chaired by: Massimiliano Guasoni (United Kingdom) and Nithyanandan Kanagaraj (India)

Continued from **Wednesday, 23 July**

8:30am

WC1.2 (Invited) - Quantum signal processing via stimulated Brillouin scattering...N/A

» Birgit Stiller (Germany)¹ (1. Max Planck Institute for the science of light)

9am

WC1.3 (Invited) - Integrated high-dimensional time-bin entanglement analyzers for scalable quantum photonics...N/A

» Nicola Montaut (Canada)¹, Monika Monika (Canada)¹, Farzam Nosrati (Italy)², Hao Yu (Canada)¹, Stefania Sciara (Canada)¹, Ulf Peschel (Germany)³, Zhiming Wang (China)⁴, Rosario lo Franco (Italy)², Mario Chemnitz (Germany)³, David Moss (Australia)⁵, José Azaña (Canada)¹, Roberto Morandotti (Canada)¹ (1. Institut national de la recherche scientifique, INRS-EMT Varennes (QC), Canada, 2. Dipartimento di Ingegneria, Università degli Studi di Palermo Palermo, Italy, 3. Institute of Condensed Matter Theory and Solid State Optics, FSU Jena, Germany, 4. Shimmer Center, Tianfu Jiangxi Laboratory Chengdu, P. R. China, 5. Optical Sciences Centre, Swinburne University of Technology Hawthorn, Australia)

8:30am

WD1 -

WD1: IQPS 8 - Quantum Non-linear Photonics II

Vendome B

Chaired by: Erika Janitz (Canada) and Marek Osinski (United States)

8:30am

WD1.1 (Invited) - Modulation transfer protocol for Rydberg RF receivers: theory and experiments...N/A

» Fabien Bretenaker (France)¹, Duc-Anh Trinh (France)¹, Mickael Branco (France)¹, Adwaith K.-V. (France)¹, Aliénor Rouxel (France)¹, Sacha Welinski (France)², Perrine Berger (France)², Fabienne Goldfarb (France)¹ (1. LuMIn, CNRS-Université Paris-Saclay, 2. Thales Research & Technology)

9am

WD1.2 (Invited) - A QKD-oriented tuning toolbox for semiconductor quantum-dot single-photon sources...N/A

» Dario Fioretto (France)¹, Yann Portella (France)¹, Juan Rafael Alvarez (France)¹, Tim Hebenstreit (Germany)², Thi Huong Au (France)³, Sebastien Boissier (France)³, Anton Pishchagin (France)³, Aristide Lemaitre (France)¹, Martina Morassi (France)¹, Niccolo Somaschi (France)³, Filip Rozpedek (United States)⁴, Pascale Senellart (France)¹ (1. Centre de Nanosciences et de Nanotechnologies, 2. Max Planck Institute for the science of light, 3. Quandela, 4. College of Information and Computer Sciences, University of Massachusetts Amherst)

9:30am

WD1.3 (Invited) - Decoherence-assisted quantum key distribution...105

» Juan Rafael Alvarez (Colombia)¹, Daniel R. Sabogal (Colombia)¹, Daniel F. Urrego (Spain)², Andrés F. Herrera (Colombia)¹, Juan P. Torres (Spain)², Alejandra Valencia (Colombia)¹ (1. Laboratorio de Optica Cuantica Universidad de los Andes Bogota, Colombia, 2. ICFO - Institut de Ciencies Fotoniques The Barcelona Institute of Science and Technology Castelldefels, Spain)

8:30am

WE1 -

WE1: OA6G 7 - FSO/Mmwave Fronthaul Infrasture II

Odeon A

Chaired by: Chris Vagionas (Greece) and Argyrios Kokkinis (Greece)

8:30am

WE1.1 (Invited) - Hybrid Fiber/FSO/mmWave Transport for 6G X-haul Backhauling...107

» Dimitrios Apostolopoulos (Greece)¹, Evrydiki Kyriazi (Greece)¹, Panagiotis Toumasis (Greece)¹, Argyris Ntanos (Greece)¹, Aristeidis Stathis (Greece)¹, Ioanna Mesogiti (Greece)², Janez Sterle (Greece)³, Giannis Giannoulis (Greece)¹, Hercules Avramopoulos (Greece)¹ (1. School of Electrical & Computer Engineering National Technical University Athens, Greece, 2. OTE Hellenic Telecommunications Organization S.A. Athens, Greece, 3. Internet Institute LTD Ljubljana, Slovenia)

Continued from **Wednesday, 23 July**

9am **WE1.2 (Invited) - Digital Coherent Optical Communication Techniques for FSO and Optical Space Communications...N/A**
» [Hikari Mochizuki](#) (Japan)¹, Hayato Sano (Japan)¹, Yuta Yokomura (Japan)¹, Hitomi Ono (Japan)¹, Keisuke Matsuda (Japan)¹, Takahiro Suzuki. (Japan)¹, Keita Mochizuki (Japan)¹ (1. Mitsubishi Electric Corporation)

9:30am **WE1.3 (Invited) - Design Challenges and Implementation Solutions for Modular Free-Space Optical (FSO) Systems...N/A**
» [Abdelmoula Bekkali](#) (Spain)¹ (1. Centre Tecnològic de Telecomunicacions de Catalunya (CTTC))

8:30am **WF1 -**
WF1: NLD 3 - Optical Computing
Opera A
Chaired by: Kathy Ludge (Germany) and Julien Javaloyes (Spain)

8:30am **WF1.1 (Invited) - Semi-supervised training of neural networks for sensing through non-linear laser dynamics...109**
» Pierre-Emmanuel Novac (France)¹, Laurent Rodriguez (France)¹, Robin Matha (France)¹, Aymane Hajjaoui (France)¹, Leo Barbry (France)¹, [Stephane Barland](#) (France)² (1. Université Côte d'Azur, LEAT Nice, France, 2. INPHYNI, CNRS, Université Côte d'Azur Nice, France)

9am **WF1.2 (Invited) - Model-free front to end training of a semiconductor laser-based optical neural network...N/A**
» [Anas Skalli](#) (France)¹, Satoshi Sunada (Japan)², Mirko Goldmann (France)¹, Marcin GebSKI (Poland)³, Stephan Reitzenstein (Germany)⁴, James A. Lott (Germany)⁴, Tomasz Czystanowski (Poland)³, Daniel Brunner (France)¹ (1. Institut FEMTO-ST, Université Marie et Louis Pasteur, CNRS UMR, 6174, Besancon, France., 2. Faculty of Mechanical Engineering, Institute of Science and Engineering, Kanazawa University, Kakuma-machi Kanazawa, Ishikawa 920-1192, Japan., 3. Institute of Physics, Lodz University of Technology, ul. Wolczanska 219, 90-924 Lodz, Poland., 4. Technical University of Berlin, Hardenbergstraße 36, D-10623 Berlin, Germany.)

9:30am **WF1.3 (Invited) - Time Crystals in Active Mode-locked lasers...N/A**
» [J. Yelo-Sarrión](#) (Spain)¹, R. Weng (Spain)¹, E. R. Koch (Germany)², J. Batle (Spain)¹, Julien Javaloyes (Spain)¹, Svetlana Gurevich (Germany)² (1. Departament de Física and IAC3, Universitat de les Illes Balears, Campus UIB 07122 Mallorca, Spain, 2. Institute for Theoretical Physics, University of Münster, Wilhelm-Klemm-Str.9 48149 Münster, Germany)

8:30am **WG1 -**
WG1: PECDP 8 - Sensing
Opera B
Chaired by: Lars Zimmerman (Germany) and Naoki Suzuki (Japan)

8:30am **WG1.1 (Invited) - Optical Phased Array Miniaturization through Electro-Photonic Monolithic Integration...N/A**
» Saeed Arsanjani (Austria)¹, Ion Vornicu (Austria)¹, Jochen Bardong (Austria)¹, Muhammad S. Kahn (Austria)¹, Muhammad Hassan Malik (Austria)¹, Georg Winzer (Germany)², Lars Zimmerman (Germany)², [Tommaso Cassese](#) (Austria)¹ (1. Silicon Austria Labs GmbH, 2. IHP GmbH)

9am **WG1.3 (Invited) - Electronic-photonic co-integration for fiberoptic communication and mm-wave radar...N/A**
» [Johann Christoph Scheytt](#) (Germany)¹ (1. Heinz Nixdorf Institute, University of Paderborn)

10am **Break & Exhibits**
Galerie

10:30am **WA2 -**
WA2: SHINE 9 - "Charis" Bio-Inspired Unconventional Computing
Concorde A
Chaired by: C. Mesaritakis (Greece) and Francesco Da Ros (Denmark)

10:30am **WA2.1 (Invited) - Analog Computing with Spiking Neural Networks...N/A**
» [Johannes Schemmel](#) (Germany)¹ (1. Heidelberg University)

Continued from **Wednesday, 23 July**

11am

WA2.2 (Invited) - Universal Linear Optics for Tensor and Matrix Multiplications...N/A

» [Stefanos Kovaïos](#) (Greece)¹, Theodoros Moschos (Greece)¹, Antonios Prapas (Greece)¹, Odysseas Asimopoulos (Greece)¹, Apostolos Tsakyridis (Greece)¹, Miltiadis Moralis-Pegios (Greece)¹, Nikos Pleros (Greece)¹ (1. Aristotle University of Thessaloniki)

11:30am

WA2.3 (Invited) - Self-Configuring Programmable Integrated Photonic Filter...111

» [Cristina Catalá-Lahoz](#) (Spain)¹, Daniel Pérez-López (Spain)², Alejandro Santomé (Spain)², Tan Huy-Ho (Canada)³, José Capmany (Spain)¹ (1. Photonics Research Labs, iTEAM Universitat Politècnica de València Valencia, Spain, 2. iPronics Programmable Photonics S.L. Valencia, Spain, 3. Huawei Technologies Canada Co., Ltd. Ottawa, Canada)

10:30am

WB2 -

WB2: MATCHA 7 - AMUX and ADeMUX I

Concorde B

Chaired by: Markus Grözing (Germany) and Philipp Thomas (United States)

10:30am

WB2.1 (Invited) - InP DHBT AMUX Integrated Circuits for Beyond-200-Gbaud Optical Communications...113

» [Romain Hersent](#) (France)¹, Qian Hu (United States)², Agnieszka Konczykowska (France)¹, Mohand Achouche (France)¹, Bertrand Ardouin (France)¹ (1. III-V Lab, joint lab between Nokia Bell Labs, Thales and CEA LETI, Palaiseau, France, 2. Nokia Bell Labs, Murray Hill, New-Jersey, USA)

11am **WB2.2 (Invited) - Analog Bandwidth Extension Techniques for Multi-Tbps-Class Optical Transmitters...115**
» [Hiroshi Yamazaki](#) (Japan)¹, Munehiko Nagatani (Japan)¹, Masanori Nakamura (Japan)², Fukutaro Hamaoka (Japan)², Takayuki Kobayashi (Japan)², Toshikazu Hashimoto (Japan)², Yutaka Miyamoto (Japan)² (1. NTT Network Innovation Labs. NTT Device Technology Labs. NTT Corporation Kanagawa, Japan, 2. NTT Network Innovation Labs. NTT Corporation Kanagawa, Japan)

11:30am **WB2.3 (Invited) - Signal Processing for Broadband Analog Multiplexing...N/A**
» [Jonathan Andree](#) (Germany)¹ (1. Fraunhofer Heinrich-Hertz-Institute)

10:30am **WC2 - WC2: LBL 8**
Vendome A
Chaired by: Nithyanandan Kanagaraj (India) and Massimiliano Guasoni (United Kingdom)

10:30am **WC2.1 (Invited) - Fully programmable linear and nonlinear multimode wave propagation on chip...N/A**
» Logan Wright (United States)¹, [Martin Stein](#) (United States)¹ (1. Yale University)

11am **WC2.2 (Invited) - Tentacle solitons and soliton molecules...117**
» [Patrice TCHOFO-DINDA](#) (France)¹, Philippe GRELU (France)¹, Guy MILLOT (France)¹ (1. Laboratoire ICB, UMR 6303 CNRS
Université de Bourgogne Europe
Dijon, France)

11:30am **WC2.3 (Invited) - All-optical signal processing with nonlinear metasurfaces: nonreciprocity, power limiting, and wavefront shaping...N/A**
» [Michele Cotrufo](#) (United States)¹ (1. University of Rochester)

Continued from **Wednesday, 23 July**

10:30am **WD2 -**
WD2: IQPS 9 - Quantum Communications
Vendome B
Chaired by: Frederic Grillot (France) and Nadia Belabas (France)

10:30am **WD2.1 (Keynote) - Quantum-safe network across the French Riviera: operation, performance, and future...119**
» Olivier Alibart (France)¹, Grégory Sauder (France)¹, Yoann Pelet (France)¹, Anthony Martin (France)¹, Tess Troisi (France)¹, Sébastien Tanzilli (France)¹ (1. Institut de Physique de Nice Université Côte d'Azur, CNRS Nice, France)

11:15am **WD2.2 (Invited) - Pushing the limit of quantum communications...N/A**
» Paolo Villorosi (Italy)¹ (1. University of Padua)

10:30am **WE2 -**
WE2: OA6G 8 - Optical Satellite Communications
Odeon A
Chaired by: Chris Vagionas (Greece) and Dimitrios Apostolopoulos (Greece)

10:30am **WE2.1 (Invited) - Ground to Space FSO links: from system design to photonics challenges (a satellite provider perspective)...N/A**
» Anaëlle Maho (France)¹, Michel Sotom (France)¹ (1. Thales Alenia Space)

11am **WE2.2 (Invited) - Next-Generation High-speed Ground-to-Satellite Optical Links: Technology Review and Design Strategies...N/A**
» Rajiv Boddada (France)¹, eric dutisseuil (France)¹, Sébastien Bigo (France)¹, Ollie Farley (United Kingdom)², Perrine Lognone (United Kingdom)², Jérémie Renaudier (France)¹ (1. Nokia Bell Labs, 2. Durham University)

11:30am **WE2.3 (Invited) - HydRON, ESA's high throughput optical network...N/A**
» Ramon Mata Calvo (Netherlands)¹ (1. European Space Agency (ESA))

12pm **WE2.4 (Invited) - Membrane DMLs for Ultra-Power Efficient Communication Links...121**
» Nikolaos-Panteleimon Diamantopoulos (Japan)¹, Shinji Matsuo (Japan)¹ (1. NTT Device Technology Labs
NTT Corporation
Atsugi, Kanagawa, Japan)

10:30am **WF2 -
WF2: NLD 4 - New Directions**
Opera A
Chaired by: Julien Javaloyes (Spain) and Bernd Krauskopf (New Zealand)

10:30am **WF2.1 (Invited) - Self-consistent thermal-opto-electronic model for the dynamics in high-power semiconductor lasers...123**
» Uwe Bandelow (Germany)¹, Mindaugas Radziunas (Germany)¹, Hans Wenzel (Germany)² (1. Weierstrass Institute (WIAS) Berlin, Germany, 2. Ferdinand-Braun-Institut (FBH) Berlin, Germany)

11am **WF2.2 (Invited) - High average power ultrafast moves into the THz...N/A**
» Clara Saraceno (Germany)¹ (1. Ruhr University Bochum)

11:30am **WF2.3 (Invited) - Dissipative solitons in parity-time symmetric laser cavities...125**
» Simon-Pierre Gorza (Belgium)¹ (1. OPERA-Photonics, Université libre de Bruxelles, Brussels, Belgium)

10:30am **WG2 -
WG2: PECDP 9 - Advanced Materials**
Opera B
Chaired by: Lars Zimmerman (Germany) and Naoki Suzuki (Japan)

Continued from **Wednesday, 23 July**

10:30am **WG2.1 (Invited) - Nonlinear photonics based on nano-carbon and 2D materials...N/A**
» [Shinji Yamashita](#) (Japan)¹ (1. The University of Tokyo)

12pm **Lunch**
Galerie

1:30pm **WA3 -**
WA3: SHINE 10 - Data Sharing for Network Automation
Concorde A
Chaired by: Behnam Shariati (Germany) and Francesco Da Ros (Denmark)

1:30pm **WA3.1 (Invited) - Cloud-native, open and disaggregated optical network architecture with optical digital twin technologies for data center exchange service...N/A**
» [Hideki Nishizawa](#) (Japan)¹ (1. NTT)

2pm **WA3.2 (Invited) - From measurements to insights: Tackling data challenges in distributed acoustic sensing...N/A**
» [Jasper Müller](#) (Germany)¹ (1. Adtran)

2:30pm **WA3.3 (Invited) - Resilience Enhancement of Optical Network-Cloud Ecosystems with Dataspace Framework and Multi-entity Cooperation (Invited)...127**
» [Sugang Xu](#) (Japan)¹, Angela Mitrovska (Germany)², Subhadeep Sahoo (United States)³, Yusuke Hirota (Japan)¹, Behnam Shariati (Germany)², Yuki Yoshida (Japan)¹, Pooyan Safari (Germany)², Johannes K. Fischer (Germany)², Ronald Freund (Germany)², Hideaki Furukawa (Japan)¹, Kouichi Akahane (Japan)¹, Sifat Ferdousi (United States)³, Massimo Tornatore (Italy)⁴, Yoshinari Awaji (Japan)¹, Biswanath Mukherjee (United States)³ (1. National Institute of Information and Communications Technology, 2. Fraunhofer Institute for Telecommunications Heinrich Hertz Institute, 3. University of California, Davis, 4. Politecnico di Milano)

1:30pm

WB3 -

WB3: MATCHA 8 - AMUX and ADeMUX II

Concorde B

Chaired by: Romain Hersent (France) and Jonathan Andree (Germany)

1:30pm

WB3.1 (Invited) - Design Considerations of High-speed Analog De-multiplexer...129

» Shengpu Niu (Belgium)¹, Xin Yin (Belgium)¹ (1. IDLab, Department of Information Technology, imec-Ghent University)

2pm

WB3.2 (Invited) - Unlocking Highest Symbol Rates with Electronic Analog Demultiplexing...N/A

» Philipp Thomas (United States)¹ (1. Nokia Bell Labs)

2:15pm

WB3.3 - Design of 200 GBd 22-nm CMOS-based and 300 GBd SiGe-HBT-based Analog Multiplexers...131

» Markus Grözing (Germany)¹, Sefa Özbek (Germany)¹, Jakob Großholtfurth (Germany)¹, Samuel Wazynski (Germany)¹, Tim Vollmer (Germany)¹, Sascha Michel (Germany)¹, Georg Rademacher (Germany)¹ (1. Institute of Electrical and Optical Communications, University of Stuttgart, Germany)

2:30pm

WB3.4 - Photonic Sampler for Millimeter-Wave Signals up to 70 GHz Using a 1-GHz Mode-Locked Laser and a Silicon Photonic Integrated Circuit...133

» Lucía Amaro-Losada (Belgium)¹, Cédric Bruynsteen (Belgium)¹, Shengpu Niu (Belgium)¹, Joris Van Kerrebrouck (Belgium)¹, Kasper Van Gasse (Belgium)², Benjamin Rudin (Switzerland)³, Florian Emaury (Switzerland)³, Colm Browning (Ireland)⁴, Nishant Singh (Belgium)¹, Xin Yin (Belgium)¹ (1. IDLab Ghent University-imec Ghent, Belgium, 2. Photonics Research Group Ghent University-imec Ghent, Belgium, 3. Menhir Photonics Glattbrugg, Switzerland, 4. MBRYONICS Galway, Ireland)

Continued from **Wednesday, 23 July**

1:30pm

WC3 -

WC3: LBL 9

Vendome A

Chaired by: Nithyanandan Kanagaraj (India) and Massimiliano Guasoni (United Kingdom)

1:30pm

WC3.1 (Invited) - Tuneable multi-wavelength optical parametric amplification and oscillation in multicore fibres...N/A

» Kunhao Ji (United Kingdom)¹, Lin Xu (United Kingdom)¹, Massimiliano Guasoni (United Kingdom)¹ (1. University of Southampton)

2pm

WC3.2 (Invited) - Numerical and experimental analysis of selected nonlinear beam dynamics in multimode fibres...135

» Arnaud Poisson (France)¹, Marc Fabert (France)¹, Tigran Mansuryan (France)¹, Katarzyna Krupa (Poland)², Yago Arosa (Spain)³, Christine Restoin (France)¹, Stefan Wabnitz (Italy)⁴, Vincent Couderc (France)¹, Alessandro Tonello (France)¹ (1. Université de Limoges, XLIM UMR CNRS 7252
123 Avenue Albert Thomas, 87060
Limoges, FRANCE, 2. Institute of Physical Chemistry Polish Academy of Sciences
ul. Kasprzaka 44/52, 01-224
Warsaw, POLAND, 3. iMATUS, University of Santiago de Compostela
Praza do Obradoiro S/N, Santiago de Compostela 15782
Coruña, SPAIN, 4. DIET, Sapienza University of Rome
Via Eudossiana 18, 00184
Rome, ITALY)

2:30pm

WC3.3 (Invited) - Hollow-core fibres for bright sources of ultrashort and broadband radiation...N/A

» Francesco Tani (France)¹ (1. no affiliation)

1:30pm

WF3 -

WF3: NLD 5 - Laser Modelling

Opera A

Chaired by: Bernd Krauskopf (New Zealand) and Kathy Ludge (Germany)

1:30pm

WF3.1 (Invited) - Novel Master Equation Frameworks for Laser Modelocking: The Role of Material Dynamics...138

» Franco Prati (Italy)¹, Auro Perego (United Kingdom)², Javier Redondo (Spain)³, Stephane Barland (France)⁴, Germán J. de Valcárcel (Spain)⁵ (1. Dipartimento di Scienza e Alta Tecnologia Università dell'Insubria Como, Italy, 2. Aston Institute of Photonic Technologies Aston University Birmingham, United Kingdom, 3. IGIC Universitat Politècnica de València Gandia (Valencia), Spain, 4. Institute de Physique de Nice Université Côte d'Azur Nice, France, 5. Departament d'Òptica, Universitat de València Burjassot (Valencia), Spain)

2pm

WF3.2 (Invited) - Noise excited feedback delay modes and timing jitter in passively mode-locked lasers...140

» Lina Laurigue (Germany)¹, Kathy Ludge (Germany)¹ (1. Institut für Physik Technische Universität Ilmenau Ilmenau, Germany)

2:30pm

WF3.3 (Invited) - Emergence of complex pulsing patterns in an excitable microlaser with delayed optical feedback : the role of resonance tongues...142

» Soizic Terrien (France)¹, Bernd Krauskopf (New Zealand)², Neil G. R. Broderick (New Zealand)², Sylvain Barbay (France)³ (1. LAUM UMR 6613, Institut d'Acoustique - Graduate School CNRS, Le Mans Université Le Mans, France, 2. Mathematics Department The University of Auckland Auckland, New Zealand, 3. Centre de Nanosciences et de Nanotechnologies Université Paris-Saclay, CNRS Palaiseau, France)

3pm

Break & Exhibits

Galerie

Continued from **Wednesday, 23 July**

3:30pm **WA4 -**
WA4: SHINE 11 - Optical Networks and AI: A Two-Way Evolution
Concorde A
Chaired by: Behnam Shariati (Germany) and Mahtab Aghaeipour (Germany)

3:30pm
WA4.1 (Invited) - The role of optical networks in AI evolution...N/A
» Juan Pedro Fernández-Palacios Jimenez (Spain)¹, Pablo Armingol Robles (Spain)¹ (1. Telefonica)

4pm
WA4.2 (Invited) - Scaling Optical Fiber Networks for Environmental Sensing...N/A
» Patricia Layec (France)¹, Qiaolun Zhang (Italy)², Khoulood Abdelli (Germany)³, Massimo Tornatore (Italy)², Fabien Boitier (France)¹ (1. Nokia Bell Labs Massy, France, 2. Politecnico di Milano Milano, Italy, 3. Nokia Bell Labs Stuttgart, Germany)

4:30pm
WA4.3 (Invited) - AI-enabled Network Automation in TeraFlowSDN Orchestrated Networks...146
» Ricard Vilalta (Spain)¹, Lluís Gifre (Spain)¹, Pol Alemany (Spain)¹, Daniel Adanza (Spain)¹, Ricardo Martínez (Spain)¹, Ramon Casellas (Spain)¹, Raul Muñoz (Spain)¹ (1. Centre Tecnològic de Telecomunicacions de Catalunya (CTTC-CERCA), Castelldefels (Barcelona), Spain)

3:30pm **WB4 -**
WB4: MATCHA 9 - Silicon Photonics
Concorde B
Chaired by: Nikolaos-Panteleimon Diamantopoulos (Japan) and Hidetaka Nishi (Japan)

3:30pm

WB4.2 - Monolithically Integrated 2 × 64-Gb/s Silicon Photonic WDM Transmitter...148

» Yongjin Ji (Korea, Republic of)¹, Dae-Won Rho (Korea, Republic of)¹, Minkyu Kim (Belgium)², Lars Zimmerman (Germany)³, Woo-Young Choi (Korea, Republic of)¹ (1. Department of Electrical and Electronic Engineering

Yonsei University
Seoul, South Korea, 2. IMEC
Leuven, Belgium, 3. IHP – Leibniz-Institut für

innovative Mikroelektronik
Frankfurt, Germany)

3:45pm

WB4.3 - Silicon Photonic WDM Receiver Architectures for Low-Power Optical I/O...150

» Xingguo Xiao (Canada)¹, Alireza Geravand (Canada)¹, Leslie A. Rusch (Canada)¹, Wei Shi (Canada)¹ (1. ECE Dept. and Center for Optics, Photonics, and Lasers (COPL), Université Laval, Québec, Canada)

4pm

WB4.4 (Invited) - 2D scaling for high density optical interconnects...N/A

» Lukas Elsinger (United States)¹, Guilhem de Valicourt (United States)¹, Pete Pupalakis (United States)¹, Randy Giles (United States)¹, Marco Lamponi (United States)¹, Shawn Liu (United States)¹, Brett Sawyer (United States)¹, Jon Proesel (United States)¹, Son Thai Le (United States)¹, Zhiqui Zhu (United States)¹, Steve Corteselli (United States)¹, Laurent Alloine (United States)¹, Chris Daunt (United States)¹, Mark Ferris (United States)¹, Behzad Rahmani (United States)¹, Fred Warning (United States)¹, Ashok Bruno (United States)¹, Siamak Abbaslou (United States)¹, Mehdi Zaman (United States)¹, Zeyu Pan (United States)¹, George Fischer (United States)¹, Gannon Reichert (United States)¹, John George (United States)¹, Utku Alakusu (United States)¹, Karel van Acoleyen (United States)¹, Faezeh Fesharaki (United States)¹, Suzanne Paul (United States)¹, Vaishnavi Karra (United States)¹, Tu Nguyen (United States)¹, Nikitha Machineni (United States)¹, Andrew Sullivan (United States)¹, Daniel Assumpcao (United States)¹, Mathias Berciano (United States)¹, Sebastien Lardenois (United States)¹, Nghia Hoang (United States)¹, Graham Joe (United States)¹, Md Shofiqul Islam Khan (United States)¹, Sara Kacmoli (United States)¹, Peter Winzer (United States)¹ (1. Nubis Communications)