

IEEE PHOTONICS SOCIETY

SUMMER TOPICALS MEETING SERIES 2024

*Co-located with the Photonics in Switching
and Computing Conference (PSC)*

15-17 July 2024
Bridgetown, Barbados
www.ieee-sum.org



IEEE SUM 2024 General Chair

Georg Rademacher
Institute of Electrical and Optical
Communications (INT), University
of Stuttgart, Germany

PSC 2024 General Chair

Nicolas K. Fontaine
Nokia Bells Labs, USA





Welcome to the 2024 IEEE Summer Topicals Meeting Series (SUM), co-located with Photonics in Switching and Computing (PSC 2024)!

Summer Topicals is a premier conference organized by the IEEE Photonics Society. Its primary objective is to explore emerging areas of research and technology in the broad field of Photonics. The conference format is special, as it gathers world-wide renown experts and technology leaders in an intimate resort environment for three days, where talks and engaging discussions are accompanied by unforgettable networking events. This year, Summer Topicals is for the first time, co-located with the photonics in switching and computing (PSC) conference. By combining these two boutique-style conferences, we hope to widen the technical program and to offer a chance to attend talks on novel topics to open up new research opportunities!

This year's Summer Topicals are located in the astonishing setting of Barbados, a country with rich history, culture, special cuisine and of course, amazing beach settings. We hope that you plan some extra time to spend in this exceptional island location to explore all of its beauties.

Historically, the conference includes four to seven topics, and each year the topics and organizers are brand new, which keeps the technical content fresh. The topics selected for this year are:

- Fiber Sensing Using Deployed Telecom Networks (FS)
- Free Space Optical Communications for Next Generation Satellite Networks and Beyond (FSOC)
- Future Optical Networks and Transmission Systems (FONTS)
- Optical Interconnects and Integrated Photonics for AI/ML/HPC Applications (OIIP)
- Reconfigurable Optics and Photonics (ROP)
- Visible to Mid-IR Integrated Photonics for Quantum Technologies and Applications (VMIP)

Additionally, three tracks of PSC run in parallel to the Summer Topicals program:

- Future Optical, Datacenter and Computing Networks and Their Enabling Devices (FODC)
- From Neuromorphic Photonics to Generative AI Era (FNPGA)
- Quantum Technologies for Computing and Networks (QTCN)

Further, two workshops on Monday and Tuesday afternoon will cover topics of network security and design strategies for photonic integrated circuits.

The organizers have done a great job in planning the individual topics, from submitting a proposal to securing high-quality invited speakers, and selecting excellent contributed papers.

Networking, socializing, and mentorship are highly valued at Summer Topicals. For this reason, we are glad to complement the technical program with a number of initiatives, including a Sunday night Happy Hour, Monday evening Welcome Reception, and a "Mentor Match Meet-Up" event. In addition, the IEEE Photonics Society has sponsored one travel grant per topic to encourage early-career participation at the Summer Topicals.

We are confident that attending the 2024 Summer Topicals will give you a great opportunity to build new relationships and consolidate existing ones in a charming location, and we thank you for joining us here in beautiful Barbados!

We look forward to seeing you again next year!



Georg Rademacher
University of Stuttgart, Germany
2024-2025 IEEE Summer Topicals
General Chair



Nicolas K. Fontaine
Nokia Bells Labs, USA
2024 Photonics in Switching and Computing
General Chair

Sunday, 14 July 5:00pm-7:00pm | HAPPY HOUR | *Beach Front*

MONDAY | 15 JULY

Peninsula 1		Peninsula 2	Garrison 1	Garrison 2	Garrison 3	Needham's Ballroom 1	Needham's Ballroom 2 & 3
8:00am - 10:15am							MG1 SUM/PSC Welcome & Joint Keynotes
10:15am - 10:30am	BREAK & EXHIBITS						
10:30am - 12:00pm	MA2 10:30am-11:30am FODC Emerging Devices for Optical Interconnect	MB2 10:30am-11:30am FSOC Satellite FSOC I	MC2 FS Advances in Fiber Sensing and its Prospects	MD2 10:30am-11:30am VMIP Quantum Sensing I	ME2 OIIP Technologies for Optical Interconnects for AI/ML Datacenter Applications I	MF2 10:30am-12:15pm FONTS Advanced Fiber Characterization and Production	MG2 FNPGA/ROP/OIIP Joint 1 In-Memory Optical Computing
12:00pm - 1:30pm	LUNCH						
1:30pm - 3:00pm	MA3 1:30pm-2:30pm FODC Optical Interconnect and AI/ML Technologies	MB3 FSOC Novel FSOC I	MC3 FS Earthquake Monitoring Through Fiber Sensing & Other Applications	MD3 VMIP Mid-IR I	ME3 OIIP Technology Trend of AI/ML and Cloud Datacenters Networks	MF3 FONTS Multicore SDM Transmission	MG3 1:30pm-3:15pm FNPGA/ROP/OIIP Joint 2 Scalable Technologies for Neuromorphic Photonics
3:00pm - 3:30pm	BREAK						
3:30pm - 5:00pm	MA4 3:30pm-4:45pm QTCN Quantum Devices For Computing			MD4 VMIP Metrology		MF4 3:30-5:45pm WS 1 PSC/FONTS Physical Layer Security in Photonic Networks	MG4 FNPGA/ROP/OIIP Joint 3 Petascale Photonic Architectures and Connections
6:00pm - 8:00pm	Welcome Reception Charles Fort						

TUESDAY | 16 JULY

	<i>Peninsula 1</i>	<i>Peninsula 2</i>	<i>Garrison 1</i>	<i>Garrison 2</i>	<i>Garrison 3</i>	<i>Needham's Ballroom 1</i>	<i>Needham's Ballroom 2</i>
8:30am - 10:00am	TuA1 8:30am-9:45am FODC Optical Devices for Future Secure Networks	TuB1 FSOC Optical Ground Stations I	TuC1 FS Fiber Sensing: The Operators' Perspective	TuH1 FNPGA/ROP Joint 4 Reconfigurable Integrated Photonic Circuits	TuE1 OHP High Speed VCSELs and Ultra-compact Photonic Devices...	TuF1 FONTS DSP and Propagation Modelling	TuG1 VMIP Quantum Sensing II
10:00am - 10:30am	BREAK & EXHIBITS						
10:30am - 12:00pm	TuA2 FODC Coherent Technologies for Datacenter Networks	TuB2 10:30am-11:30am FSOC Optical Ground Stations II	TuC2 FS Panel Discussion: Toward a Networks- scale Fiber Sensing	TuH2 FNPGA/ROP/OHP Joint 5 Programmable Photonic Processors		TuF2 FONTS SDM+MB Amplification	TuG2 VMIP Visible and MIR
12:00pm - 1:30pm	LUNCH						
1:30pm - 3:00pm	TuA3 FODC Integrated Photonics Device Technologies	TuB3 1:30pm-2:15pm FSOC Satellite FSOC II	TuC3 FS Novel Approaches and Methodologies for Fiber Sensing I	TuH3 FNPGA Hybrid Integrated Photonic Neural Networks	TuE3 OHP High Density Optical I/O and Photonic Technologies for AI Cluster	TuF3 FONTS SDM Transmission	TuG3 1:30pm-3:15pm VMIP Integration Platform I
3:00pm - 3:30pm	BREAK						
3:30pm - 5:00pm	TuD3 3:30pm-4:15pm ROP Reconfigurable Photonics	TuB4 3:30pm-4:15pm FSOC Novel FSOC II	TuC4 3:30pm-4:30pm FS Novel Approaches and Methodologies for Fiber Sensing II	TuH4 WS 2 FODC Revolutionize Your Chip Design with Python	TuE4 OHP Co-Packaged Optics	TuF4 3:30pm-5:30pm FONTS Comb Sources	TuG4 3:30pm-4:30pm VMIP Mid-IR II

Program-at-a-Glance

WEDNESDAY | 17 JULY

	<i>Peninsula 1</i>	<i>Peninsula 2</i>	<i>Garrison 1</i>	<i>Garrison 2</i>	<i>Garrison 3</i>	<i>Needham's Ballroom 1</i>	<i>Needham's Ballroom 2</i>
8:30am - 10:00am	WH1 8:30am-9:30am FNPGA Reservoir, Parallel, and Bio-inspired Photonic Neural Networks		WC1 8:30am-9:30am FS Submarine Cable Sensing I	WD1 8:30am-9:30am FSOC DSOC	WE1 8:30am-9:30am OIIP High Speed Energy Efficient Devices and System Requirement	WF1 8:30am-10:15am FONTS Advances in Photonic Integration	WG1 8:30am-9:15am VMIP Atom Trap Integration
10:00am - 10:30am	BREAK						
10:30am - 12:00pm	WH2 FODC Optical Switch and Future Network Architecture		WC2 FS Submarine Cable Sensing II	WD2 10:30pm-12:15pm ROP Active Meta-optics and Microwave Photonics	WE2 10:30am-11:30am OIIP High Speed Integrated Photonics Devices	WF2 FONTS Band Conversion and MB Transmission	WG2 VMIP Photonic Ion Systems
12:00pm - 1:30pm	LUNCH						
1:30pm - 3:00pm	WH3 1:30pm-2:30pm QTCN More Quantum with Integrated Circuits		WC3 FS Panel Discussion: Challenges and Opportunities for Fiber Sensing Data Sharing		WE3 OIIP High Density Photonic Devices and Packaging for AI Cluster	WF3 1:30pm-2:30pm FONTS OAM Networks	WG3 1:30pm-3:15pm VMIP Integration Platform II
3:00pm - 3:30pm	BREAK						
3:30pm - 5:00pm	WH4 QTCN Quantum Computing Circuits				WE4 OIIP Technologies for Optical Interconnects for AI/ML Datacenters II	WF4 FONTS SDM and Multi- Band Networks	WG4 VMIP Mid-IR III



Monday, 15 July

8am MG1 - SUM/PSC Welcome & Joint Keynotes
Needham's Ballroom 2 & 3
 Chaired by: Georg Rademacher (Germany) and Nicolas Fontaine (United States)

8am Welcome & Introduction
 » [. .](#) (United States)¹ (1. .)

8:15am MG1.1 (Keynote) - The Power of Digital Signal Processing for Coherent Optical Communication and Sensing
 » [Roland Ryf](#) (United States)¹ (1. Nokia Bell Labs)

8:45am MG1.2 (Keynote) - Innovative Optical and Wireless Network (IOWN) for a Sustainable World by Photonic Technologies
 » [Yosuke Aragane](#) (Japan)¹ (1. NTT)

9:15am MG1.3 (Keynote) - Neuromorphic Photonics
 » [Paul Prucnal](#) (United States)¹ (1. Princeton University)

9:45am MG1.4 (Keynote) - The Future of Quantum Sensing
 » [Jonathan Hoffman](#) (United States)¹ (1. DARPA)

10:15am Break
Foyer

10:30am MA2 - Emerging Devices for Optical Interconnect
Peninsula 1
 Chaired by: Fatima Gunning (Ireland) and Ken Tanizawa (Japan)

10:30am MA2.1 (Invited) - Fine-Resolution, Four-Port Optical Interlacer for Subcarrier-Level Optical Front-Haul Networking
 » [Dan Marom](#) (Israel)¹, [Chris Roeloffzen](#) (Netherlands)², [Roel Botter](#) (Netherlands)², [Christos Christofidis](#) (Greece)³, [Ioannis Tomkos](#) (Greece)³ (1. Hebrew University of Jerusalem, 2. LioniX International, 3. University of Patras)

11am MA2.2 - Characterization of Dimerized Plasmonic Grating for Reflective Electro-Optic Modulator
 » [Koto Ariu](#) (Japan)¹, [Hiroki Miyano](#) (Japan)¹, [Go Soma](#) (Japan)¹, [Akira Otomo](#) (Japan)², [Takuo Tanemura](#) (Japan)¹, [Yoshiaki Nakano](#) (Japan)¹ (1. The University of Tokyo, 2. National Institute of Information and Communications Technology)

11:15am MA2.3 - Experimental Demonstration of Dielectric Metasurface for Surface-Normal Optical IQ Modulator
 » [Chun Ren](#) (Japan)¹, [Kento Komatsu](#) (Japan)¹, [Go Soma](#) (Japan)¹, [Yoshiaki Nakano](#) (Japan)¹, [Takuo Tanemura](#) (Japan)¹ (1. The University of Tokyo)

10:30am MB2 - Satellite FSOC I
Peninsula 2
 Chaired by: Suzuki Naoki (Japan) and Andrew Grimes (United States)

10:30am MB2.1 (Invited) - Connecting the Globe with Free Space Coherent Transceivers for Satellite Constellations
 » [David Mackey](#) (Ireland)¹ (1. Mbryonics Ltd)

11am MB2.2 (Invited) - Digital Coherent DSP techniques with Optical Transceiver Prototype for high capacity FSO network / optical space communication
 » [Hayato Sano](#) (Japan)¹, [Yuta Yokomura](#) (Japan)¹, [Keisuke Matsuda](#) (Japan)¹, [Masashi Binkai](#) (Japan)¹, [Hikari Mochizuki](#) (Japan)¹, [Tsuyoshi Yoshida](#) (Japan)¹, [Keita Mochizuki](#) (Japan)¹ (1. Mitsubishi Electric)

10:30am MC2 - Advances in Fiber Sensing and its Prospects
Garrison 1
 Chaired by: Mikael Mazur (United States) and Ettore Biondi

10:30am MC2.1 (Invited) - Unlocking Untapped Distributed Fiber-Optic Sensing (DFOS) Opportunities from Deployed Telecom Networks
 » [David Hill](#) (United Kingdom)¹ (1. Sintela)

11am MC2.2 (Invited) - DAS as a cost-effective tool for onshore and offshore monitoring
 » [Martin Karrenbach](#) (United States)¹ (1. Seismics Unusual, LLC)



Continued from Monday, 15 July		
11:30am	MC2.3 (Invited) - Internet Sensor Network Testbeds » Herbert Wang (United States) ¹ , Paul Barford (United States) ¹ , Dante Fratta (United States) ¹ (1. University of Wisconsin-Madison)	11am ME2.2 (Invited) - SDM Network Element Demonstrations in Field Deployed Multi-Core/Mode fibers » Ruben Luis (Japan) ¹ (1. National Institute of Information and Communications Technology)
10:30am	MD2 - Quantum Sensing I <i>Garrison 2</i> Chaired by: Oussama Moutanabbir (Canada) and Goran Mashanovich (United Kingdom)	11:30am ME2.3 (Invited) - Interconnect Technology Considerations for AI/ML/HPC Networking » Andrew Oliviero (United States) ¹ (1. Belden)
10:30am	MD2.1 (Invited) - Miniaturization of Warm Vapor Atomic Devices » Alexander Yulaev (United States) ¹ , Chad Ropp (United States) ¹ , Peter Riley (United States) ¹ , Roy Zekzer (United States) ¹ , Daron Westly (United States) ¹ , Vladimir Aksyuk (United States) ¹ , Kartik Srinivasan (United States) ¹ , John Kitching (United States) ¹ , Matthew Hummon (United States) ² (1. National Institute of Standards and Technology, 2. NIST)	10:30am MF2 - Advanced Fiber Characterization and Production <i>Needham's Ballroom 1</i> Chaired by: Robert Emmerich (Germany) and Ruben Luis (Japan)
11am	MD2.3 - Quartz Circular Polarising Optical Window at 80°C for MEMS Vapour Cells » Zack McConkey (United Kingdom) ¹ , Ugne Hawley (United Kingdom) ¹ , Jeremi Januszewicz (United Kingdom) ¹ , Martin Sinclair (United Kingdom) ¹ , Kevin Gallacher (United Kingdom) ¹ , Douglas Paul (United Kingdom) ¹ (1. University of Glasgow)	10:30am MF2.1 (Invited) - Integrating Hollow Core fibers into SMF infrastructure » Radan Slavik (United Kingdom) ¹ , Matej Komanec (Czech Republic) ² , Francesco Poletti (United Kingdom) ¹ (1. University of Southampton, 2. Czech Technical University)
11:15am	MD2.4 - Projection measurement-based optical sensing satisfying superresolution of quantum sensing » Byoung Ham (Korea, Republic of) ¹ (1. Gwangju Institute of Science and Technology)	11am MF2.2 (Invited) - Multi-core fiber characterization with correlation aided reflectometry techniques » Florian Azendorf (Germany) ¹ (1. Adtran, Meiningen)
10:30am	ME2 - Technologies for Optical Interconnects for AI/ML Datacenter Applications I <i>Garrison 3</i> Chaired by: Yi Sun (United States) and Hideyuki Nasu (Japan)	11:30am MF2.3 (Invited) - Large Scale MCF production for future SDM networks » Martin Boettcher (Germany) ¹ , Tobias Tiess (Germany) ¹ , Michael Lorenz (Germany) ¹ , Jong-Won Lee (United States) ¹ , Qiulin Ma (United States) ¹ , Kay Schuster (Germany) ¹ (1. Heraeus Comvance)
10:30am	ME2.1 (Invited) - From the first micron to the last mile: Optical Interconnects and Integrated Photonics for AI/ML/HPC Applications » Bernard Lee (Hong Kong) ¹ (1. Senko Advanced Components)	12pm MF2.4 - Gas-stop design towards low-loss connection for reliable hollow-core fiber networks » Ailing Zhong (Czech Republic) ¹ , Radan Slavik (United Kingdom) ² , Stanislav Zvanovec (Czech Republic) ¹ , Francesco Poletti (United Kingdom) ² , Matej Komanec (Czech Republic) ³ (1. Czech Technical University in Prague, 2. University of Southampton, 3. Czech Technical University)
		10:30am MG2 - Joint 1: In-Memory Optical Computing <i>Needham's Ballroom 2 & 3</i> Chaired by: Tian Gu (United States) and Russell Schwartz (United States)



Continued from Monday, 15 July

- 10:30am **MG2.1 (Invited) - Silicon Non-Volatile Optical Memory and All-Silicon Photonics**
» Yuan Yuan (United States)¹, Yiwei Peng (United States)¹, Stanley Cheung (United States)¹, Wayne Sorin (United States)¹, Zhihong Huang (United States)¹, Di Liang (United States)², Marco Fiorentino (United States)¹, Raymond Beausoleil (United States)¹ (1. Hewlett Packard Labs, 2. University of Michigan)
- 11am **MG2.2 (Invited) - Novel On-chip Microheaters for Programmable Phase-Change Photonics**
» Hongyi Sun (United States)¹, Carlos A. Ríos Ocampo (United States)¹ (1. University of Maryland, College Park)
- 11:30am **MG2.3 - Subcarrier-based Microring Resonator Weighting**
» Yusuf Jimoh (United States)¹, Weipeng Zhang (United States)¹, Eli Doris (United States)¹, Joshua Lederman (United States)¹, Simon Bilodeau (United States)¹, Bhavin Shastri (Canada)², Paul Prucnal (United States)¹ (1. Princeton University, 2. Queen's University)
- 11:45am **MG2.4 - Hyperspectral Compute-In-Memory Architecture for 3D Opto-Electronic Computing**
» Myoung-Gyun Suh (United States)¹ (1. NTT Research)
- 12pm **Lunch (on own)**
- 1:30pm **MA3 - Optial Interconnect and AI/ML Technologies**
Peninsula 1
Chaired by: Yojiro Mori (Japan) and Takuo Tanemura (Japan)
- 1:30pm **MA3.1 (Invited) - Mixed-Domain O-band Coherent for Intra-datacenter Networks**
» Hector Andrade (United States)¹ (1. Lucidean, Inc.)
- 2pm **MA3.2 (Invited) - Emerging machine learning technologies for photonic networks**
» Ryuta Shiraki (Japan)¹ (1. Kyoto University)

- 1:30pm **MB3 - FSOC I**
Peninsula 2
Chaired by: Malcolm Wright (United States) and Suzuki Naoki (Japan)
- 1:30pm **MB3.1 (Tutorial) - Toward practical optical wireless communication links**
» Abderrahmen Trichili (United Kingdom)¹ (1. University of Oxford)
- 2:15pm **MB3.2 (Invited) - Free Scape Optical Communication in the Mid - Infrared Spectrum: Recent Developments and Future Potential**
» Rainer Martini (United States)¹ (1. Stevens Institute of Technology)
- 2:45pm **MB3.3 - Optical Fi-Wi-Fi Bridge with 32-Port Focal Plane Fiber Array for Robust Waveguide Coupling**
» Bernhard Schrenk (Austria)¹ (1. AIT Austrian Institute of Technology)
- 1:30pm **MC3 - Earthquake Monitoring Through Fiber Sensing and Other Applications**
Garrison 1
Chaired by: Ettore Biondi and Giuseppe Marra (United Kingdom)
- 1:30pm **MC3.1 (Invited) - Telecommunications Fiber for Sensing Earthquake Aftershocks: Progress and Hurdles**
» Andrew Barbour (United States)¹ (1. United States Geological Survey)
- 2pm **MC3.2 (Invited) - Optical fiber as a sensor: environmental observatory on the telecom fiber network using coherent laser interferometry**
» Simone Donadello (Italy)¹ (1. Istituto Nazionale di Ricerca Metrologica)
- 2:30pm **MC3.3 - Coherent and Incoherent Noise Cancellation using Distributed Optical Fiber Sensor**
» Reinhardt Rading (Germany)¹, Katharina Sophie Isleif (Germany)¹ (1. Helmut Schmidt Universität - Universität der Bundeswehr Hamburg)



Continued from Monday, 15 July

2:45pm **MC3.4 - The Silent Threat: Acoustic Sensitivity of Indoor Optical Cables and Its Security Implications**
» [Petr Munster](#) (Czech Republic)¹, Petr Dejdar (Czech Republic)¹, Ondrej Mokry (Czech Republic)¹, Tomas Horvath (Czech Republic)¹ (1. Brno University of Technology)

1:30pm **MD3 - Mid-IR I**
Garrison 2
Chaired by: Milos Nedeljkovich (United Kingdom) and Oussama Moutanabbir (Canada)

1:30pm **MD3.1 - Modeling Many-body Effects in Ge Using Pump-Probe Femtosecond Ellipsometry**
» [Carlos Armenta](#) (United States)¹, Martin Zahradnik (Czech Republic)², Carola Emminger (Germany)³, Shirly Espinoza (Czech Republic)², Mateusz Rebarz (Czech Republic)², Saul Vazquez-Miranda (Czech Republic)², Jakob Andreasson (Czech Republic)², Stefan Zollner (United States)¹ (1. New Mexico State University, 2. ELI ERIC, 3. Leipzig University)

1:45pm **MD3.3 (Invited) - GeSn nanowires for SWIR light detection and emission**
» [Simone Assali](#) (France)¹, Lu Luo (Canada)², Mahmoud Atalla (Canada)², Youngmin Kim (Singapore)³, Gérard Daligou (Canada)², Sebastian Koelling (Canada)², Hyo-Jun Joo (Singapore)³, Melvina Chen (Singapore)³, Xuncheng Shi (Singapore)³, Donguk Nam (Singapore)³, Oussama Moutanabbir (Canada)² (1. CEA-IRIG Grenoble, 2. Polytechnique Montréal, 3. Nanyang Technological University Singapore)

2:15pm **MD3.2 - Conduction band nonparabolicity, chemical potential, and carrier concentration of intrinsic InSb as a function of temperature**
» [Stefan Zollner](#) (United States)¹, Carlos Armenta (United States)¹, Sonam Yadav (United States)¹ (1. New Mexico State University)

2:30pm **MD3.4 (Invited) - Electrically pumped SiGeSn/GeSn multiple quantum well lasers**
» [Dan Buca](#) (Germany)¹, Teren Liu (Germany)¹, Lukas Seidel (Germany)², Omar Concepcion (Germany)¹, Alexei Chelnokov (France)³, Giovanni Capellini (Germany)⁴, Michael Oehme (Germany)², Detlev Grützmacher (Germany)¹ (1. Forschungszentrum Juelich, 2. University of Stuttgart, 3. CEA, LETI, Grenoble, France, 4. IHP-Leibniz Institut für innovative Mikroelektronik)

1:30pm **ME3 - Technology Trend of AI/ML and Cloud Datacenters Networks**
Garrison 3
Chaired by: Hideyuki Nasu (Japan) and Bernard Lee (Hong Kong)

1:30pm **ME3.1 (Plenary) - Empowering AI Workloads in Ultra Ethernet Consortium**
» [J Metz](#) (United States)¹ (1. AMD)

2:15pm **ME3.2 (Tutorial) - Interconnect Technology Advancements needed to meet future AI/ML growth**
» [Rich Baca](#) (United States)¹ (1. Ciena)

1:30pm **MF3 - Multicore SDM Transmission**
Needham's Ballroom 1
Chaired by: Ruben Luis (Japan) and Aleksandr Donodin (United Kingdom)

1:30pm **MF3.1 (Invited) - Multiband transmission trials over deployed multicore fiber cables**
» [Yuta Wakayama](#) (Japan)¹, Daiki Soma (Japan)¹, Shohei Beppu (Japan)¹, Daniel Elson (Japan)¹, Seiya Sumita (Japan)¹, Noboru Yoshikane (Japan)¹, Takehiro Tsuritani (Japan)¹ (1. KDDI Research)

2pm **MF3.2 (Invited) - High aggregate bandwidth transmission over multicore fibre enabled by O-band**
» [Daniel Elson](#) (Japan)¹, Shohei Beppu (Japan)¹, Daiki Soma (Japan)¹, Noboru Yoshikane (Japan)¹, Takehiro Tsuritani (Japan)¹, Yuta Wakayama (Japan)¹ (1. KDDI Research)



Continued from Monday, 15 July			
2:30pm	MF3.3 (Invited) - Mode-dependent Gain Estimation Techniques for Coupled Multi-core Fiber Transmission » Ruby Stella Bravo Ospina (France) ¹ , Jeremie Renaudier (France) ¹ (1. Nokia Bell Labs)	3pm	MG3.4 - Non-Uniform Programmable Integrated Photonic Waveguide Hexagonal Mesh » Cristina Catalá-Lahoz (Spain) ¹ , Jose Capmany Franco (Spain) ¹ (1. Universitat Politècnica de Valencia)
1:30pm	MG3 - Joint 2: Scalable Technologies for Neuromorphic Photonics <i>Needham's Ballroom 2 & 3</i> Chaired by: Wim Bogaerts (Belgium) and Russell Schwartz (United States)	3pm	Break <i>Foyer</i>
1:30pm	MG3.1 (Invited) - Large-Scale Integrated Photonics for Energy-Efficient AI Hardware » Bassem Tossoun (United States) ¹ , Di Liang (United States) ² , Xian Xiao (United States) ¹ , Stanley Cheung (United States) ¹ , Prerana Singaraju (United States) ¹ , Sudharsanan Srinivasan (United States) ¹ , Antoine Descos (United States) ¹ , Yingtao Hu (United States) ¹ , Jongseo Baek (United States) ¹ , Yanir London (United States) ¹ , Yuan Yuan (United States) ¹ , Yiwei Peng (United States) ¹ , Thomas Van Vaerenbergh (United States) ¹ , Geza Kurczveil (United States) ¹ , Marco Fiorentino (United States) ¹ , Raymond Beausoleil (United States) ¹ (1. Hewlett Packard Labs, 2. University of Michigan)	3:30pm	MA4 - Quantum Devices For Computing <i>Peninsula 1</i> Chaired by: Pepijn Pinkse (Netherlands) and Robert Emmerich (Germany)
2pm	MG3.2 (Invited) - Free-form Direct Write and Rewritable Photonic Integrated Circuits in Phase-Change Materials » Mo Li (United States) ¹ , Changming Wu (United States) ² , Haoqin Deng (United States) ¹ , Yi-Siou Huang (United States) ³ , Heshan Yu (United States) ³ , Carlos A. Ríos Ocampo (United States) ³ , Ichiro Takeuchi (United States) ³ (1. University of Washington, 2. University of Washington, Seattle, 3. University of Maryland, College Park)	3:30pm	MA4.1 - Detection of broadband squeezed light with a low-noise die-level balanced receiver » Emily Zaiser (Austria) ¹ , Alessandro Trenti (Austria) ¹ , Dinka Milovančev (Austria) ¹ , Nemanja Vokić (Austria) ¹ , Bernhard Schrenk (Austria) ¹ , Hannes Hübel (Austria) ¹ (1. AIT Austrian Institute of Technology)
2:30pm	MG3.3 (Invited) - Photonic Technologies for Analog Neuromorphic Computing » Lorenzo De Marinis (Italy) ¹ , Peter Seigo Kincaid (Italy) ² , Giampiero Contestabile (Italy) ¹ , Sumanta Gupta (India) ³ , Nicola Andriolli (Italy) ⁴ (1. Scuola Superiore Sant'Anna, Pisa, Italy, 2. Scuola Superiore Sant'Anna, 3. Indian institute of technology patna, 4. University of pisa)	3:45pm	MA4.2 (Invited) - Superconducting photonic circuits for quantum frequency conversion and cryogenic data links » Hong Tang (United States) ¹ (1. Yale University)
		4:15pm	MA4.3 (Invited) - Nanophotonic functionalities and single photon detection for integrated quantum photonics » Carsten Schuck (Germany) ¹ (1. University of Münster)
		3:30pm	MD4 - Metrology <i>Garrison 2</i> Chaired by: Radan Slavik (United Kingdom) and Daniel Blumenthal (United States)
		3:30pm	MD4.1 (Invited) - Ultra-stable metrology with optical fibres » Giuseppe Marra (United Kingdom) ¹ (1. NPL)
		4pm	MD4.2 (Invited) - Kerr-Induced Synchronized Integrated Frequency Combs for Optical Atomic Clocks » Gregory Moille (United States) ¹ (1. National Institute of Standards and Technology)



Continued from **Monday, 15 July**

- 4:30pm **MD4.3 (Invited) - A scalable infrastructure for strontium lattice clocks with integrated photonics**
» [Scott Papp](#) (United States)¹ (1. NIST)
- 3:30pm **MF4 - WS1: Physical Layer Security in Photonic Networks**
Needham's Ballroom 1
Chaired by: Luca Potì (Italy) and Robert Emmerich (Germany)
- 3:30pm **MG4 - Joint 3: Petascale Photonic Architectures and Connections**
Needham's Ballroom 2 & 3
Chaired by: Francesco Morichetti (Italy) and Rich Baca (United States)
- 3:30pm **MG4.1 (Invited) - Breaking the PetaFlop Barrier through 3D Photonic Tensor Engines**
» [Christos Pappas](#) (Greece)¹, Theodoros Moschos (Greece)¹, Antonios Prapas (Greece)¹, Ioannis Roumpos (Greece)¹, Stefanos Kovaos (Greece)¹, Apostolos Tsakyridis (Greece)¹, Miltiadis Moralis-Pegios (Greece)¹, Nikos Pleros (Greece)¹ (1. Aristotle University of Thessaloniki)
- 4pm **MG4.2 (Invited) - Empowering Image Sensors with Integrated Photonic Neural Networks**
» [Mahdi Nikdast](#) (United States)¹ (1. Colorado State University, Fort Collins)
- 4:30pm **MG4.3 (Invited) - Petascale photonic connectivity for energy efficient scaling of AI computing**
» [Alex Meng](#) (United States)¹, Keren Bergman (United States)¹ (1. Columbia University)
- 6pm **Welcome Reception**
Charles Fort

Tuesday, 16 July

- 8:30am **TuA1 - Optical Devices for Future Secure Networks**
Peninsula 1
Chaired by: Takuo Tanemura (Japan) and Budsara Boriboon (Japan)
- 8:30am **TuA1.1 (Invited) - High-speed Quantum Random Number Generator for Secure Optical Networks**
» [Ken Tanizawa](#) (Japan)¹, Kentaro Kato (Japan)¹, Fumio Futami (Japan)¹ (1. Tamagawa University)
- 9am **TuA1.2 - Coherent transceiver architecture enabling data transmission and optical identification**
» [Stella Civelli](#) (Italy)¹, Marco Secondini (Italy)², Pantea Nadimi Goki (Italy)², Luca Potì (Italy)³ (1. CNR-IEIT, 2. Scuola Superiore Sant'Anna, 3. National Inter-University Consortium for Telecommunications (CNIT))
- 9:15am **TuA1.3 - Optical Signal Delay Processor for a Beamforming Antenna in a Radio over Fiber System**
» [Mao Miyasugi](#) (Japan)¹, Hiroyuki Tsuda (Japan)¹ (1. Keio University)
- 9:30am **TuA1.4 - Bioplausible Photonic-Electronic Neural Networks**
» Luis El Srouji (United States)¹, Yun-Jhu Lee (United States)¹, Mehmet Berkay On (United States)¹, Mahmoud Abdelghany (United States)¹, [S. J. Ben Yoo](#) (United States)¹ (1. University of California, Davis)
- 8:30am **TuB1 - Optical Ground Stations I**
Peninsula 2
Chaired by: Armin Zach (Germany) and Andrew Grimes (United States)



Continued from Tuesday, 16 July

8:30am

TUB1.1 - (Invited) - 800 Gbit/s Transmission at 100 Watts Output Power - Assessing the Feasibility of Optical Satellite Feeder Links

» Yannik Horst (Switzerland)¹, Laurenz Kulmer (Switzerland)¹, Tobias Blatter (Switzerland)¹, Joel Winiger (Switzerland)¹, Vincent Billault (France)², Guenole Dande (France)², Jerome Bourderionnet (France)², Arnaud Brignon (France)², Anaëlle Maho (France)³, Matthew Welch (United Kingdom)⁴, Stefan Koepfli (Switzerland)¹, Juerg Leuthold (Switzerland)¹ (1. ETH Zurich, 2. Thales Research and Technology, 3. Thales Alenia Space in France, 4. Gooch and Housego)

9am

TuB1.2 (Invited) - Next-Generation High Performance Optical Ground Stations

» Francis Bennet (Australia)¹ (1. Australian National University)

9:30am

TuB1.3 (Invited) - FSO Optical Ground Segment Developments in Australasia

» Nicholas Rattenbury (New Zealand)¹ (1. The University of Auckland)

8:30am

TuC1 - Fiber Sensing: The Operators' Perspective

Garrison 1

Chaired by: Giuseppe Marra (United Kingdom) and Mikael Mazur (United States)

8:30am

TuC1.1 (Invited) - Identifying activity along a subsea fibre path connecting an offshore installation

» Steinar Bjørnstad (Norway)¹, Alvaro Doval (Norway)², Kristina Yamase Skarvang (Norway)², Dag Roar Hjelle (Norway)² (1. Tampnet AS, 2. Norwegian University Science and Technology (NTNU))

9am

TuC1.2 (Invited) - Sensing and Localizing Tidal Variations on a Submarine Communications Cable Using RF-OTDR

» Pierre Mertz (United States)¹, Luis Costa (United States)², Meichen Liu (United States)³, Yue Hu (United States)¹, Siddharth Varughese (United States)¹, Sumudu Edirisinghe (United States)¹, Zhongwen Zhan (United States)³, Valey Kamalov (United States)⁴ (1. Infinera, 2. NASA Jet Propulsion Laboratory, California Institute of Technology, 3. California Institute of Technology, 4. Valey Kamalov)

9:30am

TuC1.3 (Invited) - The benefits of combining Fiber Sensing and Telecommunications

» David Neilson (United States)¹ (1. Nokia Bell Labs)

8:30am

TuH1 - Joint 4: Reconfigurable Integrated Photonic Circuits

Garrison 2

Chaired by: Tian Gu (United States) and J Metz (United States)

8:30am

TuH1.1 (Invited) - MEMS-based integrated photonic elements for reconfigurable optics and photonics

» Kyoungsik Yu (Korea, Republic of)¹ (1. KAIST)

9am

TuH1.2 (Invited) - A 16×16 Photonic Vector-Matrix Multiplier with Machine-Learning-Based Tuning

» Kohei Ikeda (Japan)¹, Shota Kita (Japan)¹, Kenta Takata (Japan)¹, Kazuo Aoyama (Japan)², Keijiro Suzuki (Japan)³, Yuriko Maegami (Japan)³, Morifumi Ohno (Japan)³, Guangwei Cong (Japan)³, Noritsugu Yamamoto (Japan)³, Koji Yamada (Japan)³, Akihiko Shinya (Japan)¹, Hiroshi Sawada (Japan)², Masaya Notomi (Japan)¹ (1. NTT Basic Research Labs, 2. NTT Communication Science Labs, 3. National Institute of Advanced Industrial Science and Technology)

9:30am

TuH1.3 (Invited) - Reconfigurable Photonic Integrated Processors for Free-Space Optics Applications

» Seyedmohammad Seyedinnadeh (Italy)¹, Andres Ivan Martinez Rojas (Italy)¹, Alessandro di Tria (Italy)¹, Emanuele Sacchi (Italy)¹, Francesco Zanetto (Italy)¹, Lorenzo Zerboni (Italy)¹, Gabriele Cavicchioli (Italy)¹, Samuele De Gaetano (Italy)¹, Rachel E. Morgan (Italy)¹, Girogio Ferrari (Italy)¹, Marco Sampietro (Italy)¹, David A. B. Miller (United States)², Andrea Melloni (Italy)¹, Francesco Morichetti (Italy)¹ (1. Politecnico di Milano, 2. Stanford University)



Continued from Tuesday, 16 July		
8:30am	TuE1 - High Speed VCSELs and Ultra-compact Photonic Devices for Short Reach Interconnects <i>Garrison 3</i> Chaired by: Bernard Lee (Hong Kong) and Chenhui Li (China)	9:30am TuF1.4 (Invited) - SDM transmission in deployed fibers » Cristian Antonelli (Italy) ¹ (1. University of L'Aquila)
8:30am	TuE1.1 (Invited) - Membrane III-V Devices on SOI Substrate for Short Distance Optical Interconnects » Shinji Matsuo (Japan) ¹ (1. NTT Device Technology Labs)	8:30am TuG1 - Quantum Sensing II <i>Needham's Ballroom 2</i> Chaired by: Radan Slavik (United Kingdom) and Douglas Paul (United Kingdom)
9am	TuE1.2 (Invited) - 850-nm VCSEL-Based 400-Gb/s and 800-Gb/s Ultra-Compact Optical Transceivers » Kazuya Nagashima (Japan) ¹ , Wataru Yoshida (Japan) ¹ , Kensho Nishizaki (Japan) ¹ , Hideyuki Nasu (Japan) ² (1. Furukawa Electric Co., Ltd., 2. Furukawa Electric Corporation)	8:30am TuG1.1 (Invited) - Rydberg Quantum Sensors » Jeremy Glick (United States) ¹ , Timothy Nunley (United States) ¹ , Paul Kunz (United States) ¹ (1. DEVCOM Army Research Laboratory)
9:30am	TuE1.3 (Invited) - Advances in VCSEL-based Multimode Links » Ramana Murty (United States) ¹ (1. Broadcom)	9am TuG1.2 (Invited) - Microfabricated vapor cell atomic clocks » Rodolphe Boudot (France) ¹ , Nicolas Passilly (France) ¹ , Clément Carlé (France) ¹ , Moustafa Abdel Hafiz (France) ¹ , Vincent Maurice (France) ² , Rémy Vicarini (France) ¹ , Andrei Mursa (France) ¹ , Anthony Gusching (France) ¹ , Carlos Rivera-Aguilar (France) ¹ , Martin Callejo (France) ¹ , Emmanuel Klinger (France) ¹ (1. FEMTO-ST, 2. IEMN/Centrale Lille)
8:30am	TuF1 - DSP and Propagation Modelling <i>Needham's Ballroom 1</i> Chaired by: Ruben Luis (Japan) and Robert Emmerich (Germany)	9:30am TuG1.3 (Invited) - Advanced configurations for light-vapor interactions at the nanoscale » Uriel Levy (Israel) ¹ (1. Hebrew University of Jerusalem)
8:30am	TuF1.1 - Design Techniques for Ultra-Compact Low-Loss Multimode Bends » Joshua Wong (United States) ¹ , Jacob Hiesener (United States) ¹ , Arjun Khurana (United States) ¹ , Stephen Ralph (United States) ¹ (1. Georgia Institute of Technology)	10am Break <i>Foyer</i>
8:45am	No-Show TuF1.2 - Self-Modifying Physics Aided Neural Operator for Optical Fiber Beam-Propagation Modeling » Joshua Uduagbomen (United Kingdom) ¹ , Tianhua Xu (United Kingdom) ¹ , Mark Leeson (United Kingdom) ¹ , Subhash Lakshminarayana (United Kingdom) ¹ (1. University of Warwick)	10:30am TuA2 - Coherent Technologies for Datacenter Networks <i>Peninsula 1</i> Chaired by: Dan Marom (Israel) and Yojiro Mori (Japan)
9am	TuF1.3 (Invited) - Matching models and experiments for ultrawideband transmission » Eric Sillekens (United Kingdom) ¹ (1. University College London)	10:30am TuA2.1 (Invited) - Coherent data center interconnecting system using the self-homodyne detection » Budsara Boriboon (Japan) ¹ , Ruben Luis (Japan) ² , Ben Puttnam (Japan) ¹ , Satoshi Shinada (Japan) ¹ , Hideaki Furukawa (Japan) ² (1. NICT, 2. National Institute of Information and Communications Technology)



Continued from Tuesday, 16 July

- 11am **TuA2.2 - Self-Homodyne 4-ch WDM 2-ch OTDM Transmission of 64-Gbaud QPSK Signals with Pulsed Carrier**
» [Takayuki Kurosu](#) (Japan)¹, Ryosuke Matsumoto (Japan)¹, Ryotaro Konoike (Japan)¹, Satoshi Suda (Japan)¹, Takeru Amano (Japan)¹ (1. National Institute of Advanced Industrial Science and Technology)
- 11:15am **TuA2.3 - Optical Signal Recovery for Phase-Agnostic Coherent Reception**
» [Bernhard Schrenk](#) (Austria)¹ (1. AIT Austrian Institute of Technology)
- 11:30am **TuA2.4 - Demonstration of Low-complexity Digital Coherent Receivers for Intra-datacenter Networks**
» [Takuma Kuno](#) (Japan)¹, Takumi Mitsuya (Japan)¹, Yojiro Mori (Japan)¹, Hiroshi Hasegawa (Japan)¹ (1. Nagoya University)
- 11:45am **TuA2.5 - Optoelectronic Assembly of a Silicon Photonic 4-Channel Coherent Receiver Array**
» [Pantea Nadimi Goki](#) (Italy)¹, [Gaurav Pandey](#) (Italy)¹, [Antonella Bogoni](#) (Italy)¹, [Sacha Welinski](#) (France)², [Matthias Lauermann](#) (Germany)³, [Dengyang Fang](#) (Germany)⁴, [Luca Potì](#) (Italy)⁵, [Antonio Malacarne](#) (Italy)⁶ (1. TeCIP Institute Scuola Superiore Sant'Anna Pisa, 2. Thales Research and Technology, 3. Vanguard Automation GmbH, 4. Karlsruhe Institute of Technology, 5. National Inter-University Consortium for Telecommunications (CNIT), 6. National Lab of Photonic Networks & Technologies CNIT)
- 10:30am **TuB2 - Optical Ground Stations II**
Peninsula 2
Chaired by: [Abderrahmen Trichili](#) (United Kingdom) and [Armin Zach](#) (Germany)
- 10:30am **TuB2.1 (Invited) - Sodium Guidestar lasers and fiber amplifiers for optical satellite uplinks**
» [Armin Zach](#) (Germany)¹, [Konstantin Holzner](#) (Germany)¹, [Sebastian Hepp](#) (Germany)¹, [Georg Heinze](#) (Germany)¹, [Martin Enderlein](#) (Germany)¹, [Frank Lison](#) (Germany)¹ (1. TOPTICA Projects GmbH)

- 11am **TuB2.2 (Invited) - 10 Gbps Transmission from a High Power EDFA for Free Space Communications**
» [Andrew Grimes](#) (United States)¹, [Benyuan Zhu](#) (United States)¹, [Cang Jin](#) (United States)¹, [Jeff Nicholson](#) (United States)¹ (1. OFS)
- 10:30am **TuC2 - Panel Discussion: Toward a Networks-scale Fiber Sensing**
Garrison 1
- 10:30am **TuH2 - Joint 5: Programmable Photonic Processors**
Garrison 2
Chaired by: [Francesco Morichetti](#) (Italy) and [J Metz](#) (United States)
- 10:30am **TuH2.1 (Invited) - General-Purpose Programmable Photonic Circuits**
» [Wim Bogaerts](#) (Belgium)¹, [Yu Zhang](#) (Belgium)¹, [Xiangfeng Chen](#) (Belgium)¹, [Hong Deng](#) (Belgium)¹, [Lukas Van Iseghem](#) (Belgium)¹, [Yichen Liu](#) (Belgium)¹, [Adam Barzanji](#) (Belgium)¹, [Iman Zand](#) (Belgium)¹, [Antonio Ribeiro](#) (Belgium)¹, [Umar Khan](#) (Belgium)¹, [Nagarjun KP](#) (Belgium)¹ (1. Ghent University-IMEC)
- 11am **TuH2.2 (Invited) - All-optical Silicon-Photonics-based Optical Logic**
» [Michael Haney](#) (United States)¹, [Di Liang](#) (United States)², [Omar Alkhazragi](#) (United States)², [John Shalf](#) (United States)³ (1. Information Sciences Institute, University of Southern California, 2. University of Michigan, 3. Lawrence Berkeley National Laboratory)
- 11:30am **TuH2.3 - The Von Neumann Bottleneck in Photonic Tensor Core Systems**
» [Russell Schwartz](#) (United States)¹, [Hangbo Yang](#) (United States)¹, [Nicola Peserico](#) (United States)¹, [Volker Sorger](#) (United States)¹ (1. University of Florida)
- 11:45am **TuH2.4 - Universal unitary transformations on a programmable integrated photonic processor**
» [Jose Roberto Rausell Campo](#) (Spain)¹, [Daniel Pérez López](#) (Spain)², [Jose Capmany Franco](#) (Spain)¹ (1. Universitat Politècnica de Valencia, 2. iPrionics Programmable Photonics)



Continued from Tuesday, 16 July

- 10:30am **TuF2 - SDM+MB Amplification**
Needham's Ballroom 1
Chaired by: Aleksandr Donodin (United Kingdom) and Robert Emmerich (Germany)
- 10:30am **TuF2.1 (Invited) - Considering advanced amplification to realize high-capacity transmission systems based on SDM and multi-band technologies**
» Yoshinari Awaji (Japan)¹, Ruben Luis (Japan)¹, Ben Puttnam (Japan)¹, Georg Rademacher (Germany)², Jun Sakaguchi (Japan)¹, Hideaki Furukawa (Japan)¹ (1. National Institute of Information and Communications Technology, 2. University of Stuttgart)
- 11am **TuF2.2 (Invited) - C+L band Distributed Raman Amplification Using Semiconductor Incoherent Forward Pumps**
» Shigehiro Takasaka (Japan)¹ (1. Furukawa Electric)
- 11:30am **TuF2.3 (Invited) - Recent Advances in Fiber Optical Parametric Amplifiers for Optical Communications**
» Vladimir Gordienko (United Kingdom)¹, Florent Bessin (France)², Mariia Bastamova (United Kingdom)¹, Sonia Boscolo (United Kingdom)¹, Nick J. Doran (United Kingdom)¹, Andrew D. Ellis (United Kingdom)¹ (1. Aston Institute of Photonic Technologies, Aston University, 2. Laboratoire de Photonique d'Angers, Université d'Angers)
- 10:30am **TuG2 - Visible and MIR**
Needham's Ballroom 2
Chaired by: Radan Slavik (United Kingdom)
- 10:30am **TuG2.1 - Feasibility Study of Photonic Integrated Circuits on Sapphire Platform**
» Fisher Yu (United States)¹, Greg Salamo (United States)¹, Wei Du (United States)¹ (1. University of Arkansas)

10:45am

TuG2.2 - Gas flow behaviour in hollow core fibres under cryogenic temperature

» Meng Ding (United Kingdom)¹, Thomas W. Kelly (United Kingdom)¹, Natalie V. Wheeler (United Kingdom)¹, Ian A. Davidson (United Kingdom)¹, Gregory Jasion (United Kingdom)¹, Francesco Poletti (United Kingdom)¹, Radan Slavik (United Kingdom)¹ (1. University of Southampton)

11am

TuG2.3 (Invited) - Interband Cascade Devices for Mid-IR Integrated Photonics

» Fabian Hartmann (Germany)¹, Andreas Bader (Germany)¹, Andreas Pfenning (Germany)¹, Borislav Petrovic (Germany)¹, Florian Rothmayr (Germany)², Nabeel Khan (Germany)², Johannes Köth (Germany)², Gerald Bastard (France)³, Sven Höfling (Germany)¹ (1. Technische Physik, Physikalisches Institut and Würzburg - Dresden Cluster of Excellence, 2. nanoplus Advanced Photonics Gerbrunn GmbH, 3. Physics Department, École Normale Supérieure)

11:30am

TuG2.4 (Invited) - Developing Zn-indiffused PPLN ridge waveguides for quantum applications in the UV, visible, and Mid-IR

» Corin Gawith (United Kingdom)¹, Noelia Palomar-Davidson (United Kingdom)¹, Goronwy Tawy (United Kingdom)¹, Glenn Churchill (United Kingdom)¹, Paolo Mennea (United Kingdom)¹, Peter Smith (United Kingdom)¹, James Gates (United Kingdom)¹, Lewis Wright (United Kingdom)², Krish Pandiyan (United Kingdom)², Greg Blanchard-Emmerson (United Kingdom)², Ruairidh Smith (United Kingdom)³, Imogen Morland (United Kingdom)³, Loyd McKnight (United Kingdom)³ (1. University of Southampton, 2. Covision Ltd, 3. Fraunhofer UK)

12pm

Lunch (on own)

1:30pm

TuA3 - Integrated Photonics Device Technologies

Peninsula 1

Chaired by: Ken Tanizawa (Japan) and Fatima Gunning (Ireland)



Continued from Tuesday, 16 July

- 1:30pm **TuA3.1 (Invited) - Heterogeneous silicon photonics-enabled optical computing application**
 » Di Liang (United States)¹, Bassem Tossoun (United States)², Stanley Cheung (United States)², Yuan Yuan (United States)², Yiwei Peng (United States)², Yingtao Hu (United States)², Wayne Sorin (United States)², Geza Kurczveil (United States)², Zhuoran Fang (United States)², Arka Majumdar (United States)³, Marco Fiorentino (United States)², Raymond Beausoleil (United States)² (1. University of Michigan, 2. Hewlett Packard Labs, 3. University of Washington, Seattle)
- 2pm **TuA3.2 - Comparative Numerical Analysis of Photonic Integrated Tunable Optoelectronic Oscillators Employing High-Q Optical Cavities**
 » Muhammad Imran (Italy)¹, Gaurav Pandey (Italy)¹, Claudio Porzi (Italy)¹, Antonio Malacarne (Italy)², Paolo Ghelfi (Italy)², Antonella Bogoni (Italy)¹ (1. TeCIP Institute Scuola Superiore Sant'Anna Pisa, 2. National Lab of Photonic Networks & Technologies CNIT)
- 2:15pm **TuA3.3 - Are Photonic Integrated Circuits (PICs) Secure? A Glance at Security Vulnerabilities in PICs**
 » Felipe Gohring de Magalhaes (Canada)¹, Amin Shafiee (United States)², Gabriela Nicolescu (Canada)¹, Mahdi Nikdast (United States)² (1. Polytechnique Montréal, 2. Colorado State University, Fort Collins)
- 2:30pm **TuA3.4 (Invited) - Heterogeneous integration of III-V membrane devices with micro-transfer printing technology**
 » Yoshiho Maeda (Japan)¹, Hidetaka Nishi (Japan)¹, Takuma Aihara (Japan)¹, Takuro Fujii (Japan)¹, Tatsurou Hiraki (Japan)¹, Pandelis Diamantopoulos (Japan)¹, Koji Takeda (Japan)¹, Hiroki Sugiyama (Japan)¹, Tomonari Sato (Japan)¹, Yasutomo Ota (Japan)², Satoshi Iwamoto (Japan)³, Yasuhiko Arakawa (Japan)³, Shinji Matsuo (Japan)¹ (1. NTT Device Technology Labs, 2. Keio University, 3. The University of Tokyo)

- 1:30pm **TuB3 - Satellite FSOC II**
Peninsula 2
 Chaired by: Andrew Grimes (United States) and Abderrahmen Trichili (United Kingdom)

- 1:30pm **TuB3.2 (Invited) - Topology Optimization for Optical Communications**
 » Stephen Ralph (United States)¹ (1. Georgia Institute of Technology)

- 2pm **TuB3.3 - Insights and outcomes from the ASTROMUX project**
 » Gabriella Cincotti (Italy)¹, Gabriele Incerti (Italy)², Paul Danca (Italy)², Gabriele Guidi (Italy)³, Antonio Alvino (Italy)⁴, Pierpaolo Boffi (Italy)⁵ (1. University Roma Tre, 2. RINA S.p.A, 3. UMBRAGROUP S.p.A., 4. SERMS, 5. Politecnico di Milano)

- 1:30pm **TuC3 - Novel Approaches and Methodologies for Fiber Sensing I**
Garrison 1
 Chaired by: Mikael Mazur (United States) and Ettore Biondi

- 1:30pm **TuC3.1 (Invited) - 8 years of (nearly) continuous DAS recording**
 » Robert Clapp (United States)¹ (1. Stanford University)

- 2pm **TuC3.2 (Invited) - Long-range fiber-optic earthquake sensing by active phase noise cancellation**
 » Sebastian Noe (Switzerland)¹, Dominik Husmann (Switzerland)², Nils Müller (Switzerland)¹, Jacques Morel (Switzerland)², Andreas Fichtner (Switzerland)¹ (1. ETH Zurich, 2. Swiss Federal Institute of Metrology, METAS)

- 2:30pm **TuC3.3 (Invited) - Distributed Fiber Optic Sensing: Recent Advances and Trends for Energy Infrastructure Monitoring**
 » Paul Ohodnicki (United States)¹ (1. University of Pittsburgh)

- 1:30pm **TuH3 - Hybrid Integrated Photonic Neural Networks**
Garrison 2
 Chaired by: Lorenzo De Marinis (Italy) and Russell Schwartz (United States)

- 1:30pm **TuH3.1 (Invited) - Hybrid Nanoprinted Neural Networks**
 » Elena Goi (China)¹ (1. University of Shanghai for Science and Technology)



Continued from Tuesday, 16 July

2pm	TuH3.2 (Invited) - Photonic Matrix and Tensor Acceleration Using Multidimensional Coherent Mixing » Fatemeh Ghaedi Vanani (United States) ¹ , Alireza Fardoost (United States) ¹ , Zheyuan Zhu (United States) ¹ , Sean Pang (United States) ¹ , <u>Guifang Li</u> (United States) ¹ (1. CREOL, The College of Optics & Photonics University of Central Florida)
2:30pm	TuH3.3 (Invited) - Chip-scale photonics for deep neural networks » <u>Saumil Bandyopadhyay</u> (United States) ¹ , Alexander Sludds (United States) ² , Stefan Krastanov (United States) ² , Ryan Hamerly (United States) ¹ , Nicholas Harris (United States) ² , Darius Bunandar (United States) ² , Matthew Streshinsky (United States) ³ , Michael Hochberg (United States) ⁴ , Dirk Englund (United States) ² (1. MIT and NTT Research, 2. MIT, 3. Nokia Corporation, 4. Luminous Computing)
1:30pm	TuE3 - High Density Optical I/O and Photonic Technologies for AI Cluster <i>Garrison 3</i> Chaired by: Hideyuki Nasu (Japan) and Hidetaka Nishi (Japan)
1:30pm	TuE3.1 (Invited) - Optical Interchannel Interference in Dense Wavelength Division Multiplexing Systems » <u>Nikola Nedovic</u> (United States) ¹ (1. NVIDIA)
2pm	TuE3.2 (Invited) - Photonics across hyperscale - from advanced plasmonic data storage to disaggregated quantum interconnect » <u>Richard Pitwon</u> (Ireland) ¹ (1. Resolute Photonics)
2:30pm	TuE3.3 (Invited) - Advancing in-package optical I/O for high performance computing » <u>Radek Roucka</u> (United States) ¹ (1. Ayar Labs)
1:30pm	TuF3 - SDM Transmission <i>Needham's Ballroom 1</i> Chaired by: Tomoyuki Kato (Japan) and Robert Emmerich (Germany)

1:30pm	TuF3.1 (Invited) - On the limits of multimode SDM transmission capacity » <u>Filipe Ferreira</u> (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 , Mareli Rodigheri (Brazil) ² (1. University College London, 2. University of Campinas)
2pm	TuF3.2 (Invited) - Randomly-coupled Multi-core Fiber Technology for High-capacity and Energy-efficient Transmission System » <u>Taiji Sakamoto</u> (Japan) ¹ , Ryota Imada (Japan) ¹ , Masaki Wada (Japan) ¹ , Kazuhide Nakajima (Japan) ¹ (1. Access Network Service Systems Laboratories, NTT Corporation)
2:30pm	TuF3.3 (Invited) - Exploiting SDM technology for Turbulence mitigation in Free Space Optical Communication Channels » <u>Chigo Okonkwo</u> (Netherlands) ¹ (1. Eindhoven University of Technology)
1:30pm	TuG3 - Integration Platform I <i>Needham's Ballroom 2</i> Chaired by: Wei Du (United States) and Daniel Blumenthal (United States)
1:30pm	TuG3.1 (Invited) - Integrated quantum photonics with thin film lithium niobate » <u>Marko Loncar</u> (United States) ¹ (1. Harvard University)
2pm	TuG3.2 (Invited) - Integrating MEMS and Silicon-Nitride Photonic Integrated Circuits for Atomic Systems » Ugne Hawley (United Kingdom) ¹ , Jeremi Januszewicz (United Kingdom) ¹ , Zack McConkey (United Kingdom) ¹ , Martin Sinclair (United Kingdom) ¹ , Eugenio Di Gaetano (United Kingdom) ¹ , Marc Sorel (United Kingdom) ¹ , Kevin Gallacher (United Kingdom) ¹ , <u>Douglas Paul</u> (United Kingdom) ¹ (1. University of Glasgow)
2:30pm	TuG3.3 (Invited) - Ge-based photonics for quantum technologies » <u>Fabio Pezzoli</u> (Italy) ¹ (1. Università degli Studi di Milano-Bicocca)



Continued from Tuesday, 16 July		
3pm	TuG3.4 - Amplitude and Phase Matching Structure for Twin-Photon Generation » Albert Peralta Amores (Sweden) ¹ , Marcin Swillo (Sweden) ¹ (1. Royal Institute of Technology KTH)	3:45pm TuB4.3 - A 32-Input Integrated Coherent Combiner » Peter Seigo Kincaid (Italy) ¹ , Lorenzo De Marinis (Italy) ¹ , Giampiero Contestabile (Italy) ¹ , Vincent Michau (France) ² , Yann Lucas (France) ³ , Lea Krafft (France) ³ , Mikko Karppinen (Finland) ⁴ , Matteo Cherchi (Finland) ⁴ (1. Scuola Superiore Sant'Anna, Pisa, Italy, 2. DOTA, ONERA, Université de Paris-Saclay, 92320, Châtillon, France, 3. DOTA, ONERA, Université de Paris-Saclay, 92320, Châtillon, 4. VTT, Espoo)
3pm	Break <i>Foyer</i>	4pm TuB4.4 - Wideband Spectral Sensing by Integrated Photonics for Signal Separation and Localization » Yuxin Wang (United States) ¹ , Weipeng Zhang (United States) ¹ , Bhavin Shastri (Canada) ² , Paul Prucnal (United States) ¹ (1. Princeton University, 2. Queen's University)
3:30pm	TuD3 - Reconfigurable Photonics <i>Peninsula 1</i> Chaired by: Wim Bogaerts (Belgium)	
3:30pm	TuD3.2 (Invited) - Large-scale reconfigurable photonic circuits enabled by MEMS » Sangyoon Han (Korea, Republic of) ¹ (1. Daegu Gyeongbuk Institute of Science and Technology)	3:30pm TuC4 - Novel Approaches and Methodologies for Fiber Sensing II <i>Garrison 1</i> Chaired by: Ettore Biondi and Giuseppe Marra (United Kingdom)
4pm	TuD3.3 - Achieving Multiple-Days Stability in a Single-Cavity Dual-Comb laser for Spectroscopic Applications » Alberto Rodriguez (United Kingdom) ¹ , Dmitrii Stoliarov (United Kingdom) ² , Hani Khashi (United Kingdom) ² , Sergey Sergeyev (United Kingdom) ² (1. Aston Institute of Photonic Technologies, College of Engineering and Physical Sciences, Aston University, 2. Aston University)	3:30pm TuC4.1 (Invited) - DAS Sensing for Telecommunication Networks - Has the time come? » Sander Jansen (Germany) ¹ , Florian Azendorf (Germany) ² (1. Adtran, 2. Adtran, Meiningen)
3:30pm	TuB4 - Novel FSOC II <i>Peninsula 2</i> Chaired by: Abderrahmen Trichili (United Kingdom) and Armin Zach (Germany)	4pm TuC4.2 (Invited) - Sensing on submarine cables - an industry perspective » Simon Webster (United Kingdom) ¹ (1. NEC)
3:30pm	TuB4.2 - 20 Gb/s Free Space Data Transmission with 980 nm Vertical Cavity Surface Emitting Lasers » Nasibeh Haghighi (Germany) ¹ , Pouria Emtenani (Germany) ¹ , James Lott (Germany) ¹ (1. Technical University of Berlin)	3:30pm TuH4 - WS 2: Revolutionize Your Chip Design with Python <i>Garrison 2</i> Chaired by: Joaquin Matres Abril and Alec Hammond (United States)
		3:30pm TuE4 - Co-Packaged Optics <i>Garrison 3</i> Chaired by: Chenhui Li (China) and Bernard Lee (Hong Kong)



Continued from Tuesday, 16 July

- 3:30pm **TuE4.1 (Invited) - Co-Packaged Optical Modules for HPC, Data Center, and AI Applications**
» [Daniel Kuchta](#) (United States)¹ (1. IBM Research)
- 4pm **TuE4.2 (Invited) - 3-D Polymer Optical Waveguide for Co-Packaged Optics**
» [Takaaki Ishigure](#) (Japan)¹ (1. Keio University)
- 4:30pm **TuE4.3 (Invited) - External Laser Source Modules Employing an 8-Channel CWDM TOSA for Co-Packaged Optics**
» [Hideyuki Nasu](#) (Japan)¹, Taketsugu Sawamura (Japan)¹, Kohei Umeta (Japan)¹, Yuki Shiroishi (Japan)¹ (1. Furukawa Electric Co., Ltd.)
- 3:30pm **TuF4 - Comb Sources**
Needham's Ballroom 1
Chaired by: Salma Escobar Landero (France) and Aleksandr Donodin (United Kingdom)
- 3:30pm **TuF4.1 - A L-band Quantum Walk Comb Laser**
» [Bahareh Marzban](#) (Switzerland)¹, Lucius Miller (Switzerland)¹, Alexander Dikopoltsev (Switzerland)¹, Mathieu Bertrand (Switzerland)¹, Giacomo Scaleri (Switzerland)¹, Jerome Faist (Switzerland)¹ (1. ETH Zurich)
- 3:45pm **TuF4.2 - Signal Regeneration for Flexible Power-Division Multiplexing**
» Alex Kaylor (United States)¹, Prankush Agarwal (United States)¹, Arjun Khurana (United States)¹, Joel Slaby (United States)¹, Naveenta Gautam (United States)¹, [Jacob Hiesener](#) (United States)¹, Stephen Ralph (United States)¹ (1. Georgia Institute of Technology)
- 4pm **TuF4.3 (Invited) - Clock and carrier synchronization to enable future optical and radio access networks**
» [Zhixin Liu](#) (United Kingdom)¹ (1. University College London (UCL))

- 4:30pm **TuF4.4 (Invited) - Communications with Noisy Optical Frequency Combs**
» [Bill Corcoran](#) (Australia)¹ (1. Monash University)
- 5pm **TuF4.5 (Invited) - Sustainable Scaling of Coherent Transceivers through Advanced Optoelectronic Integration and Functionalities**
» [Gabriele Di Rosa](#) (Germany)¹, Ognjen Jovanovic (Germany)¹, Benjamin Wohlfeil (Germany)¹, Jörg-Peter Elbers (Germany)¹ (1. Adtran Networks SE)
- 3:30pm **TuG4 - Mid-IR II**
Needham's Ballroom 2
Chaired by: Goran Mashanovich (United Kingdom) and Milos Nedeljkovich (United Kingdom)
- 3:30pm **TuG4.1 (Invited) - Properties of GeSn Films Grown on Si (001), Si (111), Sapphire and Fused Silica Substrates**
» [Bruce Claflin](#) (United States)¹, Gordon Grzybowski (United States)², Timothy Cooper (United States)³, David Look (United States)³ (1. AFRL, 2. KBR, 3. Semiconductor Research Center)
- 4pm **TuG4.2 (Invited) - Light-Hole vs. Heavy-Hole Spin Qubits in Group IV Semiconductors**
» [Patrick Del Vecchio](#) (Canada)¹, Nicolas Rotaru (Canada)¹, Oussama Moutanabbir (Canada)¹ (1. Polytechnique Montréal)

Wednesday, 17 July

- 8:30am **WH1 - Reservoir, Parallel, and Bio-inspired Photonic Neural Networks**
Peninsula 1
Chaired by: Elena Goi (China) and Russell Schwartz (United States)
- 8:30am **WH1.1 (Invited) - Ubiquitous Analogue Reservoir Computing: Modelling, Optimising, and Controlling Dynamics-Driven Hardware AI**
» [Giulia Marcucci](#) (United Kingdom)¹ (1. University of Glasgow)



Continued from Wednesday, 17 July

9am
WH1.2 (Invited) - Parallel Photonic Matrix Processor Based on Space and Wavelength Division Multiplexing
» [Mitsumasa Nakajima](#) (Japan)¹, Satoshi Kawakami (Japan)², Kohei Ikeda (Japan)³, Toshikazu Hashimoto (Japan)¹ (1. NTT Device Technology Labs, 2. Kyusyu University, 3. NTT Basic Research Labs)

8:30am
WC1 - Submarine Cable Sensing I
Garrison 1
Chaired by: Giuseppe Marra (United Kingdom) and Mikael Mazur (United States)

8:30am
WC1.1 (Invited) - Gaps, challenges and opportunities in monitoring the global ocean: Can fibre-optic sensing provide a step change in understanding and if so, how?
» [Mike Clare](#) (United Kingdom)¹, Emma Gregory (United Kingdom)¹, Maria-Daphne Mangriotis (United Kingdom)¹, Andrew Gates (United Kingdom)¹ (1. Ocean BioGeosciences Research Group, National Oceanography Centre)

9am
WC1.2 (Invited) - Science Monitoring and Reliable Telecommunications (SMART) Cables - A New Frontier in Global Climate and Hazard Observations
» [Charlotte Rowe](#) (United States)¹, Bruce Howe (United States)², Michael Begnaud (United States)¹, Andrea Conley (United States)³ (1. Los Alamos National Laboratory, 2. University of Hawai'i, 3. Sandia National Laboratories)

8:30am
WD1 - DSOC
Garrison 2
Chaired by: Malcolm Wright (United States) and Andrew Grimes (United States)

8:30am
WD1.1 (Invited) - Deep Space Optical Communications from the Psyche Mission
» [Angel Velasco](#) (United States)¹, Malcolm Wright (United States)¹, Abhijit Biswas (United States)¹, Meera Srinivasan (United States)¹, Kenneth Andrews (United States)¹, Erik Alerstam (United States)¹, Brett Douglass (United States)¹, Sarah Haque (United States)¹, Jason Allmaras (United States)¹, Emma Wollman (United States)¹, Ryan Rogalin (United States)¹, Nathaniel Richard (United States)¹, Mark Brewer (United States)¹, Kittrin Matthews (United States)¹, Gerardo Ortiz (United States)¹, Yuri Beregovski (United States)¹, William Buehlman (United States)¹, Sean Meenehan (United States)¹, Dylan Conway (United States)¹, William Klipstein (United States)¹ (1. NASA Jet Propulsion Laboratory, California Institute of Technology)

9am
WD1.2 (Invited) - Telescope Arrays for Deep Space Optical Communication: Preliminary Operational Results
» [Ryan Rogalin](#) (United States)¹ (1. NASA Jet Propulsion Laboratory, California Institute of Technology)

8:30am
WE1 - High Speed Energy Efficient Devices and System Requirement
Garrison 3
Chaired by: Hidetaka Nishi (Japan) and Takaaki Ishigure (Japan)

8:30am
WE1.1 (Invited) - High-speed energy efficient optics for AI/ML applications
» [Jianying Zhou](#) (United States)¹ (1. Hisense Broadband)

9am
WE1.3 (Invited) - Evolution of Optical Interconnect Standards for AI/ML and HPC Applications
» [Eric Bernier](#) (Canada)¹ (1. Huawei)

8:30am
WF1 - Advances in Photonic Integration
Needham's Ballroom 1
Chaired by: Tomoyuki Kato (Japan) and Ruben Luis (Japan)



Continued from Wednesday, 17 July

8:30am **WF1.1 (Invited) - Design and realization of optical filters on an integrated Si3N4 PIC platform**

» [Chris Roeloffzen](#) (Netherlands)¹, Charoula Mitsolidou (Netherlands)¹, Carlos Ruiz Pineda (Netherlands)¹, Roelof Bernardus Timens (Netherlands)¹, Ahmad Mohammad (Netherlands)¹, Ilka Visscher (Netherlands)¹, Roel Botter (Netherlands)¹, Furkan Şahin (Netherlands)¹, Peter Maat (Netherlands)¹, Sesilia Kriswandhi (Netherlands)¹, Edwin Klein (Netherlands)¹, Rick Heuvink (Netherlands)¹, Ronald Dekker (Netherlands)¹, Paul van Dijk (Netherlands)¹ (1. LioniX International)

9am **WF1.2 (Invited) - Photonic Integration in the Era of SDM: Techniques, Opportunities, and Challenges**

» [Guilhem de Valicourt](#) (United States)¹, Samuel Laulhau (United States)² (1. Nubis Communications, 2. Photonistic Design)

9:30am **WF1.3 (Invited) - Realizing PIC-based 1×N Flexible WaveBand-Selective Switches in SiN Technology**

» [Dan Marom](#) (Israel)¹, Chris Roeloffzen (Netherlands)², Carlos Ruiz Pineda (Netherlands)², Francisco Rodrigues (Portugal)³, Michael Enrico (United Kingdom)⁴ (1. Hebrew University of Jerusalem, 2. LioniX International, 3. PICadvanced, SA, 4. Huber+Suhner Polatis Ltd)

10am **WF1.4 - Multiport O-Band Dynamic Optical Filter**

» [Lauren Dallachiesa](#) (United States)¹, Nicolas Fontaine (United States)¹, David Neilson (United States)¹, Yetian Huang (United States)¹, Aleksandr Donodin (United Kingdom)², Ian Phillips (United Kingdom)², Ben Puttnam (Japan)³ (1. Nokia Bell Labs, 2. Aston University, 3. NICT)

8:30am **WG1 - Atom Trap Integration**

Needham's Ballroom 2

Chaired by: Daniel Blumenthal (United States) and Matthew Hummon (United States)

8:30am **WG1.1 (Invited) - Arbitrary photonic to free-space mode converters for photonic interfaces to atomic systems**

» [Vladimir Aksyuk](#) (United States)¹, Chad Ropp (United States)¹, Alexei Azarov (United States)¹, Dhriti Maurya (United States)¹, Alexander Yulaev (United States)¹, Daron Westly (United States)¹ (1. National Institute of Standards and Technology)

9am **WG1.2 - Transmissive metasurfaces for constructing a magneto-optical trap**

» [Wengi Zhu](#) (United States)¹, Zi Wang (United States)¹, Junyeob Song (United States)¹, Okan Koksai (United States)¹, Sindhu Jammi (United States)¹, Andrew Ferdinand (United States)¹, Scott Papp (United States)¹, Amit Agrawal (United States)¹ (1. National Institute of Standards and Technology)

10am **Break**
Foyer

10:30am **WH2 - Optical Switch and Future Network Architecture**

Peninsula 1

Chaired by: Budsara Boriboon (Japan) and Dan Marom (Israel)

10:30am **WH2.1 (Invited) - Optical Switching Technologies for Future Transport Networks**

» [David Neilson](#) (United States)¹ (1. Nokia Bell Labs)

11am **WH2.2 (Invited) - Simplification of Edge Network Architecture with Open Packet Switches and Pluggable Transceivers**

» Julie Raulin (Ireland)¹, Jim Zou (Germany)², Scott Hill (United Kingdom)³, John Griffiths (United Kingdom)³, Gawen Davey (Netherlands)⁴, Alexander Jeffries (Netherlands)⁴, Ian Cooper (United Kingdom)⁵, Paul Gunning (United Kingdom)⁵, Cormac Sreenan (Ireland)⁶, [Fatima Gunning](#) (Ireland)¹ (1. Tyndall National Institute, 2. Adtran Networks SE, 3. Keysight Technologies, 4. APS Networks, 5. BT Research, 6. University College Cork)

11:30am **WH2.3 - Design of Horseshoe Networks with Low-Loss Filterless Nodes and Point-to-Multipoint Transceivers**

» Mohammad Mohammad Hosseini (Germany)¹, [João Pedro](#) (Portugal)¹, Antonio Napoli (Germany)¹ (1. Infinera)



Continued from Wednesday, 17 July

11:45am **WH2.4 - Silica-Based Planar Lightwave Circuit Switch on a Cavity Structure for Reducing Power Consumption**
» [Ai Yanagihara](#) (Japan)¹, Keita Yamaguchi (Japan)¹, Kenya Suzuki (Japan)¹, Osamu Moriwaki (Japan)¹ (1. NTT Device Innovation Center)

10:30am **WC2 - Submarine Cable Sensing II**
Garrison 1
Chaired by: Mikael Mazur (United States) and Ettore Biondi

10:30am **WC2.1 (Invited) - A wet-demo SMART Cable operating in the Ionian Sea**
» [Francesco Simeone](#) (Italy)¹, Giuditta Marinaro (Italy)¹, Davide Embriaco (Italy)¹, Salvatore D'Amico (Italy)¹, Alessandra Giuntini (Italy)¹, John O'Neill (United Kingdom)², Bruce Nicholson (United Kingdom)², Neil Watkiss (United Kingdom)², Federica Restelli (Italy)² (1. INGV, 2. GURALP)

11am **WC2.2 (Invited) - Leveraging Telecommunication Infrastructures and Fiber-Optic Sensing for Marine Geophysics**
» [Zack Spica](#) (United States)¹, Jorge Castellanos (United States)², Valey Kamalov (United States)³ (1. University of Michigan, 2. Lumetec Inc., 3. Valey Kamalov)

11:30am **WC2.3 (Invited) - Toward cable response for DAS**
» [Ethan Williams](#) (United States)¹, Bradley Lipovsky (United States)¹ (1. University of Washington, Seattle)

10:30am **WD2 - Active Meta-optics and Microwave Photonics**
Garrison 2
Chaired by: Carlos A. Ríos Ocampo (United States) and Tian Gu (United States)

10:30am **WD2.1 (Invited) - Reconfigurable Photonics for Phased Array Antenna Beamforming**
» [Maurizio Burla](#) (Germany)¹ (1. TU Berlin)

11am **WD2.2 (Invited) - Multiphysics modelling of phase change materials based nanophotonics components**
» [Dmitry Chigrin](#) (Germany)¹ (1. DWI Leibniz Institute for Interactive Materials & Physikalisches Institut (1A), RWTH Aachen University)

11:30am **WD2.3 (Invited) - Dynamic light shaping using reconfigurable optical metasurfaces**
» [Tian Gu](#) (United States)¹ (1. Massachusetts Institute of Technology)

12pm **WD2.4 - Broadband Microwave Photonic Filter with Full Reconfigurability and GHz-level Tuning Speed**
» [Xinyi Zhu](#) (Canada)¹, Benjamin Crockett (Canada)¹, Connor M. L. Rowe (Canada)¹, Hao Sun (Canada)¹, Jose Azana (Canada)¹ (1. Institut National de la Recherche Scientifique, Centre Énergie Matériaux Télécommunication (INRS-EMT))

10:30am **WE2 - High Speed Integrated Photonics Devices**
Garrison 3
Chaired by: Chenhui Li (China) and Takaaki Ishigure (Japan)

10:30am **WE2.2 - 100 Gbit/s quantum-confined Stark effect electro-optic modulator integrated with SiN waveguides**
» [Ilias Skandalos](#) (United Kingdom)¹, Thalía Domínguez Bucio (United Kingdom)¹, Lorenzo Mastronardi (United Kingdom)¹, Aaron Zilkie (United States)², Guomin Yu (United States)², Frederic Gardes (United Kingdom)¹ (1. University of Southampton, 2. Rockley Photonics)

10:45am **WE2.3 - On Topology Optimization Enhancements for Thin-Film Lithium Niobate**
» Michael Probst (United States)¹, [Jacob Hiesener](#) (United States)¹, Leticia Magalhaes (United States)², C. J. Xin (United States)², Benjamin Szamosfalvi (United States)³, Ryan Camacho (United States)³, Marko Loncar (United States)², Stephen Ralph (United States)¹ (1. Georgia Institute of Technology, 2. Harvard University, 3. Brigham Young University)



Continued from Wednesday, 17 July

11am **WE2.4 - On Intelligent Inverse-Design: Optimizing Compact Integrated Photonic Structures**
» [Jacob Hiesener](#) (United States)¹, Joel Slaby (United States)¹, Arjun Khurana (United States)¹, Clay Kaylor (United States)¹, Stephen Ralph (United States)¹ (1. Georgia Institute of Technology)

11:15am **WE2.5 - Compact and Thermally-Robust Offset-QAM Optical Transmitters using RAMZI Modulators**
» [Dan Sturm](#) (United States)¹, Sajjad Moazeni (United States)¹ (1. University of Washington, Seattle)

10:30am **WF2 - Band Conversion and MB Transmission**
Needham's Ballroom 1
Chaired by: Aleksandr Donodin (United Kingdom) and Robert Emmerich (Germany)

10:30am **WF2.1 (Invited) - Multi-band Transmission beyond C+L Bands with High-symbol-rate WDM Signals**
» [Fukutaro Hamaoka](#) (Japan)¹, Masanori Nakamura (Japan)¹, Takayuki Kobayashi (Japan)¹, Masashi Abe (Japan)¹, Takushi Kazama (Japan)¹, Shimpei Shimizu (Japan)¹, Takeshi Umeki (Japan)¹, Yutaka Miyamoto (Japan)¹, Etsushi Yamazaki (Japan)¹ (1. NTT)

11am **WF2.2 (Invited) - Unleashing the potential of multi-band WDM transmission through wavelength band conversion**
» [Tomoyuki Kato](#) (Japan)¹ (1. Fujitsu Limited)

11:30am **WF2.3 (Invited) - Recent advances in Raman amplification for ultra-wideband transmission systems**
» [Wlodek Forysiak](#) (United Kingdom)¹ (1. Aston Institute of Photonic Technologies - AiPT)

10:30am **WG2 - Photonic Ion Systems**
Needham's Ballroom 2
Chaired by: Daniel Blumenthal (United States) and Simone Assali (France)

10:30am **WG2.1 (Invited) - Multi-ion clocks and scalable ion platforms for ultra-compact quantum sensors**
» [Tanja Mehlstäubler](#) (Germany)¹, Elena Jordan (Germany)¹, Carl Grimpe (Germany)¹, Guochun Du (Germany)¹ (1. Physikalisch-Technische Bundesanstalt (PTB))

11am **WG2.2 (Invited) - Trapped ion qubit and clock operations with a visible photonics lasers**
» [Robert Niffenegger](#) (United States)¹, Daniel Blumenthal (United States)² (1. University of Massachusetts Amherst, 2. University of California, Santa Barbara)

11:30am **WG2.3 (Invited) - Laser beam conditioning and delivery for Quantinuum's trapped ion quantum computer: photonics development to enable scalable platforms**
» [Lora Nugent](#) (United States)¹ (1. Quantinuum)

12pm **Lunch (on own)**

12pm **By Invitation Only - Young Professionals: Volunteer Leadership Development**

1:30pm **WH3 - More Quantum with Integrated Circuits**
Peninsula 1
Chaired by: Carsten Schuck (Germany)

1:30pm **WH3.1 (Invited) - Spectral domain quantum and topological photonics**
» [Avik Dutt](#) (United States)¹, Yichen Shen (United States)¹, Sashank Kaushik Sridhar (United States)¹ (1. University of Maryland, College Park)

2pm **WH3.3 (Invited) - Quantum Information Processing with Large Photonic Integrated Circuits**
» [Pepijn Pinkse](#) (Netherlands)¹ (1. University of Twente)

1:30pm **WC3 - Panel Discussion: Challenges and Opportunities for Fiber Sensing Data Sharing**
Garrison 1



Continued from Wednesday, 17 July

- 1:30pm **WE3 - High Density Photonic Devices and Packaging for AI Cluster**
Garrison 3
Chaired by: Chenhui Li (China) and Hideyuki Nasu (Japan)
- 1:30pm **WE3.1 (Invited) - Multi-Tbps PICs for AI Applications**
» John Bowers (United States)¹ (1. University of California, Santa Barbara)
- 2pm **WE3.2 (Invited) - High Density Co-packaging of Photonics for a Sustainable AI and DC Physical Infrastructure**
» Chuan Xie (United States)¹, Suresh Ramalingam (United States)¹, Xin Wu (United States)¹, Yohan Frans (United States)¹ (1. AMD)
- 2:30pm **WE3.3 (Invited) - Pluggable Photonic Packaging using Micro-Lenses – Applications, Novel Materials and Opportunities**
» Kamil Gradkowski (Ireland)¹, Gabriele Hoogland (Netherlands)², Florian Jung (Netherlands)², Young Joon Choi (Netherlands)², Jos van Gisbergen (Netherlands)², Peter Johnson (United States)², Richard Pitwon (Ireland)³, Alexander Hartwig (Germany)⁴, Ronald Koh (Singapore)⁵, Peter O'Brien (Ireland)¹ (1. Tyndall National Institute, 2. Sabic, 3. Resolute Photonics, 4. DELO Industrial Adhesives, 5. TNC Optics & Technologies)
- 1:30pm **WF3 - OAM Networks**
Needham's Ballroom 1
Chaired by: Salma Escobar Landero (France) and Tomoyuki Kato (Japan)
- 1:30pm **WF3.1 (Invited) - Channel-defined mode-division-multiplexing for high capacity free space communications**
» Ultan Daly (United Kingdom)¹, Aleksandr Boldin (United Kingdom)¹, Zhaozhong Chen (United Kingdom)¹, Martin Lavery (United Kingdom)² (1. University of Glasgow, 2. University of Glasgow)

- 2pm **WF3.2 (Invited) - Modal generation in integrated, programmable silicon photonics**
» Leslie Rusch (Canada)¹, Bishal Bhandari (Canada)¹, Sushanta Kumar (Canada)¹, Wei Shi (Canada)¹ (1. ECE, Université Laval)
- 1:30pm **WG3 - Integration Platform II**
Needham's Ballroom 2
Chaired by: Fabio Pezzoli (Italy) and Goran Mashanovich (United Kingdom)
- 1:30pm **WG3.1 (Invited) - Advanced light sources for integrated photonic technologies**
» Samir Ghosh (Ireland)¹, James O'Callaghan (Ireland)¹, Brian Corbett (Ireland)¹ (1. Tyndall National Institute)
- 2pm **WG3.2 (Invited) - Si-PIC Platforms from NIR to MIR: Materials, Processes, and Devices**
» Anu Agarwal (United States)¹ (1. MIT)
- 2:30pm **WG3.3 (Invited) - Optimization of threading dislocation density in ICLEDs grown on Silicon.**
» Ganesh Balakrishnan (United States)¹, Mega Frost (United States)¹, Darryl Shima (United States)¹, Thomas Rotter (United States)¹, Fatih Furkan Ince (United States)¹, Martha McCartney (United States)², David Smith (United States)², Chadwick Canedy (United States)³, William Bewley (United States)³, Stephanie Tomasulo (United States)³, Chul Soo Kim (United States)³, Mijin Kim (United States)⁴, Igor Vurgaftman (United States)³, Jerry Meyer (United States)³ (1. University of New Mexico, 2. Arizona State University, 3. U.S. Naval Research Laboratory, 4. Jacobs Corporation)
- 3pm **WG3.4 - Hybrid integrated photonic arbitrary waveform generator for single-atom control**
» Julian Rasmus Bankwitz (Germany)¹, Erik Jung (Germany)¹, Philipp Lohmann (Germany)¹, Ravi Pradip (Germany)¹, Liam McRae (Germany)¹, Julius Römer (Germany)¹, Akhil Varri (Germany)², Xinyu Ma (Germany)¹, Francesco Lenzini (Germany)², Sebastian Blatt (Germany)³, Johannes Zeiher (Germany)³, Wolfram H.P. Pernice (Germany)¹ (1. University of Heidelberg, 2. University of Münster, 3. Max-Planck-Institut for Quantum Optics)



Continued from Wednesday, 17 July		
3pm	Break <i>Foyer</i>	
3:30pm	WH4 - Quantum Computing Circuits <i>Peninsula 1</i> Chaired by: Avik Dutt (United States)	
3:30pm	WH4.1 (Invited) - Integrated photonic circuits for quantum machine learning applications » Stefano Azzini (Italy) ¹ , Alessio Baldazzi (Italy) ¹ , Nicolò Leone (Italy) ¹ , Matteo Sanna (Italy) ¹ , Lorenzo Pavesi (Italy) ¹ (1. University of Trento)	
4pm	WH4.2 (Invited) - Integrated Optical Phased Arrays for AR Displays, Biophotonics, 3D Printing, and Beyond » Jelena Notaros (United States) ¹ (1. Massachusetts Institute of Technology)	
4:30pm	WH4.3 (Invited) - A two-dimensionally programmable photonic chip for information processing » Tatsuhiko Onodera (United States) ¹ , Martin Stein (United States) ² , Benjamin Ash (United States) ² , Mandar Sohoni (United States) ² , Melissa Bosch (United States) ² , Ryotatsu Yanagimoto (United States) ¹ , Marc Jankowski (United States) ³ , Timothy McKenna (United States) ³ , Tianyu Wang (United States) ⁴ , Gennady Shvets (United States) ² , Maxim Shcherbakov (United States) ⁵ , Logan Wright (United States) ⁶ , Peter McMahon (United States) ² (1. Cornell University & NTT Research, 2. Cornell University, 3. NTT Research, 4. Boston University, 5. UC Irvine, 6. Yale University)	
3:30pm	WE4 - Technologies for Optical Interconnects for AI/ML Datacenters II <i>Garrison 3</i> Chaired by: Takaaki Ishigure (Japan) and Hidetaka Nishi (Japan)	
3:30pm	WE4.1 (Invited) - Scalable AI Networks using 3D Photonic Fabrics Implemented in Glass » Jose Castro (United States) ¹ (1. Panduit Corporation)	
4pm	WE4.2 (Invited) - Optical Interconnects and Integrated Photonics for AI/ML/HPC Applications » Bob Shine (United States) ¹ , Anthony Kewitsch (United States) ¹ (1. Telescent)	
4:30pm	WE4.3 (Invited) - High Density, Low Latency Fiber Solutions for a Sustainable AI DC Physical Infrastructure » Dave Knight (United States) ¹ , Yi Sun (United States) ¹ , Mabud Choudhury (United States) ¹ (1. OFS)	
3:30pm	WF4 - SDM and Multi-Band Networks <i>Needham's Ballroom 1</i> Chaired by: Robert Emmerich (Germany) and Salma Escobar Landero (France)	
3:30pm	WF4.1 (Invited) - Spectrum Assignment to Proactively Mitigate Transient Impact in SuperC+L-band Optical Networks » João Pedro (Portugal) ¹ , Antonio Eira (Portugal) ² , Andre Souza (Portugal) ² (1. Infinera, 2. Infinera Unipessoal Lda)	
4pm	WF4.2 (Invited) - Spatial Channel Networks and Their Enabling Multicore-Fiber-Based Devices » Masahiko Jinno (Japan) ¹ (1. Kagawa University)	
4:30pm	WF4.3 (Invited) - Optical identification for enhanced-security SDM and Multi-Band networks » Luca Poti (Italy) ¹ (1. National Inter-University Consortium for Telecommunications (CNIT))	
3:30pm	WG4 - Mid-IR III <i>Needham's Ballroom 2</i> Chaired by: Goran Mashanovich (United Kingdom) and Fabio Pezzoli (Italy)	



Continued from Wednesday, 17 July

- 3:30pm **WG4.1 (Invited) - Mid-infrared silicon photonics for sensing systems**
 » Milos Nedeljkovic (United Kingdom)¹, Colin Mitchell (United Kingdom)¹, David Rowe (United Kingdom)¹, Chen Wei (United Kingdom)¹, Callum Stirling (United Kingdom)¹, Yanli Qi (United Kingdom)¹, Lauren Reid (United Kingdom)¹, Tianhui Hu (United Kingdom)¹, Callum Littlejohns (United Kingdom)¹, Goran Mashanovich (United Kingdom)¹ (1. University of Southampton)
- 4pm **WG4.2 (Invited) - (Si)GeSn mid-IR light emitting and detecting optoelectronic devices**
 » Alexei Chelnokov (France)¹, Clément Cardoux (France)¹, Eric Kroemer (France)¹, Nicolas Coudurier (France)¹, Philippe Rodriguez (France)¹, Nicolas Pauc (France)², Vincent Calvo (France)², Olivier Gravrand (France)¹, Jean-Michel Hartmann (France)¹, Vincent Reboud (France)¹ (1. CEA, LETI, Grenoble, France, 2. CEA-IRIG Grenoble)
- 4:30pm **WG4.3 (Invited) - SiGeSn Technology for Monolithic Infrared Silicon Photonics**
 » Fisher Yu (United States)¹, Wei Du (United States)¹ (1. University of Arkansas)