Sunday, September 28, 2025

Workshop Session
SC 1: Novel fibres, fibre devices and amplifiers
Sunday, September 28, 2025, 09:00 - 10:30 Auditorium 10

S.01.01 - Workshop 1: What type of optical fibre will be deployed, When and Where?

► **Short description:** A range of transmission technologies and optical fibres have been extensively studied to sustainably meet the growing demand for data capacity. This workshop will explore current and future applications for various optical fibres, including conventional single-mode fibres (such as bundle and reduced diameter types), SDM optical fibres, and hollow-core fibres.

Workshop 1 – Part 1: Hollow Core Fiber

Speakers and Presentations:
• **Maxime Droques**, Alcatel Submarine Networks, France
Duration: 12 minutes
• **Rodrigo Amezcua Correa**, Relativity Networks, USA
Duration: 12 minutes
• **Li Peng**, Yangtze Optical Fibre and Cable (YOFC), China
Duration: 12 minutes
• **Patrick Van Vickle**, Amazon Web Services, USA
Duration: 12 minutes
• **Liang Dou**, Alibaba, China
Duration: 12 minutes
• **Naoaki Yamanaka**, Keio University, Japan
Duration: 12 minutes
• **Panel Discussion**
Duration: 15 minutes

Workshop Organizer: Alan McCurdy, Lightera Denmark ApS / DMTS – Global Fiber R&D, Norcross, Georgia, United States
Workshop Organizer: Takeshi Hoshida, Fujitsu, Kanagawa, Japan
Workshop Organizer: Pascal Pecci, Meta, Paris, France
Workshop Speaker: Maxime Droques, Alcatel Submarine Networks (ASN), Les Ulis, France
Workshop Speaker: Rodrigo Amezcua Correa, Amezcua Correa, Winter Park, Florida, United States
Workshop Speaker: Peng Li, Yangtze Optical Fibre and Cable Joint Stock Limited Company (YOFC), wuhan, China
Workshop Speaker: Patrick Van Vickle, Amazon Web Services, North Carolina, United States
Workshop Speaker: Liang Dou, Alibaba Cloud, Hangzhou, China
Workshop Speaker: Naoaki Yamanaka, Keio University, Tokyo, Japan

Workshop Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Sunday, September 28, 2025, 09:00 - 10:30 Auditorium 11

S.01.02 - Workshop 4: Reconfigurable, Adaptable and Intelligent Access Networks - Do we have real use cases?

► **Short description:** This workshop will explore what is driving the evolution of optical access networks and the potential role for more flexible and intelligent systems, with the ultimate aim to identify technologies that could deliver real value. Topics in scope include more adaptable underlying transmission links, artificial intelligence (AI) and monitoring/sensing enabled access networks. Workshop speakers drawn from the network operator domain, along with experts from system vendors and academia, will share their unique insights and contribute to a lively and interactive session.

Speakers:
• **Ryo Koma** (NTT, Japan)
"Network Reconfigurability in All-Photonics Future Metro-Access Converged Networks"
• **Andreas Gladisch** (Deutsche Telekom, Germany)
"Where do we need flexibility in access networks?"
• **Andrew Bender** (Nokia, USA)
"Adapting Access Networks for the Era of AI: A Framework for New Broadband Services"
• **Roberto Gaudino** (Politecnico di Torino, Italy)
"New Access Scenarios Enabled by Coherent Transmission in PON"
• **Ye Zhicheng** (Huawei, China)
"Intelligent FTTR Technologies and Application Towards 2030"
• **Mark Watts** (Verizon, USA)
"Leveraging a Fiber Infrastructure to Unlock Value from Mobility, Sensing to AI"
• **Dezhi Zhang** (China Telecom Group, China)
"Research on Intelligent Optical Access Network in China Telecom"
• **Anna Tzanakaki** (University of Athens, Greece)
"Access Networks Intelligence in Support of 6G Infrastructures"
• **Jörg-Peter Elbers** (Adtran, Germany)
"Intelligent Access Networks: The Next Frontier or a Buzzword Bonanza?"
• **Chathurika Ranaweera** (Deakin University, Australia)
"Distributed Edge Intelligence for Next-Generation Applications in Access Networks"

Workshop Organizer: Derek Nesset, Huawei UK, Ipswich, United Kingdom
Workshop Organizer: Paola Parolari, Politecnico di Milano, Milan, Italy
Workshop Organizer: Rene Bonk, Nokia Bell-Labs, Stuttgart, Germany
Workshop Organizer: Gaël Simon, Orange Innovation, Lannion, France
Workshop Speaker: Ryo Koma, NTT Access Network Srvice Systems Laboratories, Yokosuka, Japan
Workshop Speaker: Andreas Gladisch, Deutsche Telekom AG – Group Technology, Berlin, Germany
Workshop Speaker: Andrew Bender, Nokia, Dallas, United States
Workshop Speaker: Roberto Gaudino, Politecnico di Torino, Torino, Italy
Workshop Speaker: Ye Zhicheng, Huawei, Shenzhen, China
Workshop Speaker: Mark Watts, Verizon, New York, United States
Workshop Speaker: DEZHI ZHANG, China Telecom Research Institute, State Key Laboratory of Optical Fiber and Cable Manufacture Technology, Beijing, China
Workshop Speaker: Anna Tzanakaki, National and Kapodistrian University of Athens, Athens, Greece
Workshop Speaker: Jörg-Peter Elbers, Adtran Networks SE, Martinsried, Germany
Workshop Speaker: Chathurika Ranaweera, Deakin University, Geelong, Australia

Workshop Session
SC 2: Discrete photonic devices and technologies
Sunday, September 28, 2025, 09:00 - 10:30 Auditorium 12

S.01.03 - Workshop 3: Which Modulator Technology Will Dominate in Next-Generation Transceivers? – Session 1: System/Application Requirements for Datacom & AI

► **Short description:** As optical links push toward higher transmission speeds, the modulator performance requirements are becoming increasingly stringent. This workshop will bring together industry experts and academic researchers to discuss the evolving landscape of modulator technologies, from Si photonics to InP and lithium niobate, as well as emerging hybrid approaches. Through system-level insights the suitability of different modulator material technologies for next-generation high-volume transmitters will be explored.

Workshop 3 – Part 1: System/Application Requirements for Datacom & AI

Speakers:
• Marco Lamponi (Nubis Communications)
• Liron Gantz (NVIDIA)
• Po Dong (Coherent Corp.)
• Peter Ossieur (IMEC–University of Ghent)

Workshop Organizer: Abdul Rahim, PhotonDelta, Eindhoven, Netherlands
Workshop Organizer: Despoina Petousi, ADTRAN, Berlin, Germany
Workshop Organizer: Wei Shi, Université Laval, Quebec, Canada
Workshop Speaker: Marco Lamponi, Nubis Communications, New Providence, United States
Workshop Speaker: Liron Gantz, NVIDIA, Yokneam, Israel
Workshop Speaker: Po Dong, Coherent Corp, New York, United States
Workshop Speaker: Peter Ossieur, imec – IDLab, Ghent University, Ghent, Belgium

Workshop Session
SC 2: Discrete photonic devices and technologies
Sunday, September 28, 2025, 09:00 - 10:30 Auditorium 15

S.01.04 - Workshop 2: AI-Driven Innovations in Photonic Device Design, Fabrication and Testing.

► **Short description:** AI is revolutionizing photonic devices and integrated systems, driving breakthroughs in design, fabrication, data analysis, and integration. This workshop brings together top experts from academia and industry to explore cutting-edge AI applications in photonics, featuring AI tool demos, real-world case studies, and discussions on the future of AI-driven innovation in product design and realization.

► **Workshop outline:**
This workshop explores how artificial intelligence is transforming the photonic integrated circuit (PIC) landscape, from accelerated device design through to real-time testing and characterization. Part 1 will feature an introductory perspective from Hewlett Packard Enterprise, followed by demonstrations from three leading design software vendors — Flexcompute, VPI Photonics, and Synopsys Lumerical— showcasing how AI is enabling faster, more ecicient PIC design. Part 2 shifts to real-time applications, with EXFO and Evident Scientific presenting AI-driven tools for testing and defect detection. The workshop concludes with a 50-minute panel discussion, bringing all speakers together to debate roadmaps, workflow integration, performance trade-ocs, and the future impact of AI on photonics.

► **Agenda – Workshop 2 Part 1: AI for PIC Design (09:00–10:30)**

Welcome & Workshop Motivation (2–5 mins)
• Dr. Selina Farwell, Lumentum Technology, UK
Introductory Talk (15 mins)
• Dr. Wolfger Peelaers, Hewlett Packard Enterprise, Belgium
Demos / Presentations (20 mins each)
• Dr. Yannick Augenstein, Flexcompute, Germany
• Dr. Elias Giacoumidis, VPI Photonics, Germany
• Adam Reid, Synopsys Lumerical, Canada

Workshop Organizer: Selina Farwell, Lumentum, Caswell, United Kingdom
Workshop Organizer: Francesco Da Ros, Technical University of Denmark (DTU), Kongens Lyngby, Denmark
Workshop Organizer: Stylianos Sygletos, Aston University, Aston, United States
Workshop Organizer: Eric Bernier, Huawei, Ottawa, Canada
Workshop Speaker: Wolfger Peelaers, Hewlett Packard Labs, Diegem, Belgium
Workshop Speaker: Yannick Augenstein, Flexcompute Inc, Boston, United States
Workshop Speaker: Elias Giacoumidis, VPIphotonics GmbH, Berlin, Germany
Workshop Speaker: Adam Reid, Synopsys Lumerical, Vancouver, Canada

Workshop Session
SC 11: Quantum communications and quantum computing
Sunday, September 28, 2025, 09:00 - 10:30 B3 M1-4

S.01.05 - Workshop 5: Quantum Key Distribution: Advancements, Challenges and Real-World Implementation.

► **Short description:** As quantum computers advance and pose an increasing threat to modern cryptographic systems, the need for alternative cryptographic approaches becomes more urgent. Quantum key distribution offers a promising solution for building quantum-secure networks. This workshop explores advancements, challenges, and real-world applications related to QKD and the integration of quantum technology into current telecom infrastructure. By attending this workshop, you will gain valuable insights into the use cases and challenges of QKD. The session will explore both Discrete Variable (DV) and Continuous Variable (CV) QKD, highlighting their key differences and operational mechanisms. You will learn how each approach functions, their advantages in securing communications, and the obstacles they face in practical implementation. This workshop will provide a comprehensive understanding of QKD's role in building future-proof cryptographic systems.
Additionally, the workshop will emphasize the integration of quantum systems into telecom networks, a key advancement in strengthening security and achieving quantum-safe communications. Utilizing existing fiber-optic infrastructure, QKD and other quantum technologies can be efficiently integrated into contemporary networks.

Speakers and Presentations:
• **Marco Lucamarini** (University of York, UK)
"Tu*torial on Discrete Variable QKD*"
Duration: 25 min presentation + 5 min Q&A
• **Vicente Martin** (Madrid Quantum Network, Spain)
Duration: 12 min presentation + 3 min Q&A
• **Katia Gallo** (KTH Royal Institute of Technology, Sweden)
"*QCI*"
Duration: 12 min presentation + 3 min Q&A
• **Ingrid Linnas** (State Infocommunication Foundation, Estonia)
"*Estonian QCI*"
Duration: 12 min presentation + 3 min Q&A
• **Rui Wang** (University of Bristol, UK)
"*Quantum Networks in the UK*"
Duration: 12 min presentation + 3 min Q&A

Workshop Organizer: Alessandro Zavatta, QTI, Firenze, Italy
Workshop Organizer: Davide Bacco, Universita' di Firenze, Firenze, Italy
Workshop Organizer: Tobias Gehring, DTU, Lyngby, Denmark
Workshop Speaker: Marco Lucamarini, University of York – Chair of Experimental Quantum Communications; Director, York Centre for Quantum Technologies, York, United Kingdom
Workshop Speaker: Vicente Martin, Universidad Politécnica de Madrid (UPM), Madrid, Spain
Workshop Speaker: Katia Gallo, KTH Royal Institute of Technology, Stockholm, Sweden
Workshop Speaker: Ingrid Linnas, State Infocommunication Foundation (RIKS), Tallinn, Estonia
Workshop Speaker: Rui Wang, University of Bristol, Quantum networks, Bristol, United Kingdom

Workshop Session
SC 9: Free-space optics and optical wireless technologies
Sunday, September 28, 2025, 09:00 - 10:30 B3 M5-M8

S.01.06 - Workshop 6: Coherent optical transceiver for Free-Space Optic links: Commercial-off-the-shelf or custom designed?

► **Short description:** Commercial Off-The-Shelf (COTS) solutions like Digital Coherent Optical (DCO) systems are increasingly used in space applications, such as by Starlink. However, Free Space Optical (FSO) communications face challenges due to atmospheric turbulence affecting signal processing and synchronization. There is a need to balance the high development costs of specialized modems with the ability to compensate atmospheric effects.

Speakers:
• **Nourdin Kaai** - Aircision - NL
• **Raj Chandrasekar** - Viasat - USA
• **Karen Saucke** - TESAT - DE
• **Jeremie Renaudier** - Nokia Bell Labs - FR
Panel Discussion

Workshop Organizer: Simon Fabbri, Viasat, Lausanne, Switzerland
Workshop Organizer: Jeffrey Lee, Coherent Corp, Dieburg, Germany
Workshop Speaker: Nourdin Kaai, Aircision B.V., Eindhoven, Netherlands
Workshop Speaker: Raj Chandrasekar, ViaSat Inc., Carlsbad, United States
Workshop Speaker: Karen Saucke, Tesat Spacecom GmbH & Co. KG (TESAT), Backnang, Germany
Workshop Speaker: Jérémie Renaudier, Nokia Bell Labs – Distinguished Member of Technical Staff, Optical WDM Transmission Systems, Paris-Saclay, France

Workshop Session
SC 6: Architecture, modelling and performance of optical networks
Sunday, September 28, 2025, 09:00 - 10:30 B4 M1-4

S.01.07 - Workshop 7: Open Optical Networks-as-a-Service for 6G and AI: Vision or Reality?

► **Short description:** Open Optical Networks-as-a-Service (ONaaS) offers a groundbreaking approach, enabling on-demand, high-capacity, and ultra-low latency connectivity across access, metro, and core segments. This workshop delves into the feasibility of ONaaS, focusing on advancements driven by key industry consortia and standardization organizations. We will explore how open standards, software-defined networking (SDN), and digital twin technologies can enable seamless interoperability and intelligent automation.

Workshop 7 – Part 1

Speakers and Presentations:

• **Workshop Organizers** – *Workshop Introduction*
Duration: 5 minutes
• **Mark Watts, Verizon, USA** – *How can the workload of 6G be satisfied by the network*
Duration: 15 minutes + 5 minutes Q&A
• **Hideki Nishizawa, NTT, Japan** – *IOWN: Use cases and vision of optics networks to use the Network as a service*
Duration: 15 minutes + 5 minutes Q&A
• **Stefan Melin, Telia Company, Sweden** – *TIP: MUST/MANTRA Use Cases and Architecture to use the Network as a service*
Duration: 15 minutes + 5 minutes Q&A
• **Kentaro Nakamura, Fujitsu, Japan** – *OpenROADM: Importance of open specifications and interfaces to use the Network as a service*
Duration: 15 minutes + 5 minutes Q&A

Workshop Organizer: Hideki Nishizawa, NTT, Kanagawa, Japan
Workshop Organizer: Sai Kishore Bhyri, Infinera (IN), TIP, Bengaluru, India
Workshop Organizer: Andrea D'Amico, NEC Laboratories America Inc., Princeton, United States
Workshop Organizer: Gert Grammel, Juniper Networks (US), TIP, OpenROADM, IETF, OpenConfig, IOWN, OIF, Sunnyvale, United States
Workshop Speaker: Mark Watts, Verizon, New York, United States
Workshop Speaker: Stefan Melin, Telia Company, Stockholm, Sweden
Workshop Speaker: Kentaro Nakamura, Fujitsu, Tokyo, Japan

Workshop Session
SC 8: Sensing and microwave photonics
Sunday, September 28, 2025, 09:00 - 10:30 B4 M5-8

S.01.08 - Workshop 11: Will photonics-enabled THz communication and sensing play a role in 6G?

► **Short description:** This workshop explores how photonics-driven THz generation can unlock new horizons for next-generation mobile networks. Industry leaders, standardization bodies, and academic experts will share their insights on the potential of THz frequencies for both communication and sensing applications, highlighting the ongoing efforts to shape the 6G era.

Workshop Organizer: Oskars Ozoliņš, RISE/RTU, Kista/Riga, Sweden
Workshop Organizer: Sebastian Randel, Institute of Photonics and Quantum Electronics, Karlsruhe Institute of Technology, Karlsruhe, Germany
Workshop Organizer: Chris Vagionas, Aristotle University of Thessaloniki, Thessaloniki, Greece

S.01.08.1 **TBD** 09:00 - 09:18

	Workshop Speaker: Andreas Stöhr, University of Duisburg–Essen, Duisburg, Germany	
S.01.08.2	**Optoelectronic Beamforming Enabling High-Output THz Sources** Workshop Speaker: Ming Che, Kyushu University, Fukuoka, Japan	09:18 - 09:36
S.01.08.3	**Photonic beamsteering for THz communications: the TERA6G approach** Workshop Speaker: Luis González Guerrero, Universidad Carlos III de Madrid (UC3M) and LeapWave Technologies S.L., Madrid, Spain	09:36 - 09:54
S.01.08.4	**Photonic-Assisted Point-to-Multipoint sub-THz Wireless Communication for 6G** Workshop Speaker: Joel Dittmer, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany	09:54 - 10:12
S.01.08.5	**THz Wireless Links Can Provide Optical Fiber Quality of Experience** Workshop Speaker: Robert Elschner, Fraunhofer Heinrich Hertz Institute (HHI), Berlin, Germany	10:12 - 10:30

.
Sunday, September 28, 2025, 10:30 - 11:00

Coffee break

Workshop Session
SC 1: Novel fibres, fibre devices and amplifiers
Sunday, September 28, 2025, 11:00 - 12:30 Auditorium 10

S.01.01 - Workshop 1: What type of optical fibre will be deployed, When and Where?

► **Short description:** A range of transmission technologies and optical fibres have been extensively studied to sustainably meet the growing demand for data capacity. This workshop will explore current and future applications for various optical fibres, including conventional single-mode fibres (such as bundle and reduced diameter types), SDM optical fibres, and hollow-core fibres.

Workshop 1 – Part 2: Multicore Fiber

Speakers and Presentations:
• **Rang-Chen (Ryan) Yu**, TeraHop, USA
Duration: 12 minutes
• **Takashi Matsui**, NTT, Japan
Duration: 12 minutes
• **Christian Antonelli**, University of l'Aquila, Italy
Duration: 12 minutes
• **Peter Borel**, Lightera, Denmark
Duration: 12 minutes
• **Lidia Galdino**, Corning, UK
Duration: 12 minutes
• **Eduardo Mateo**, NEC, Japan
Duration: 12 minutes
• **Panel Discussion**
Duration: 15 minutes

Workshop Organizer: Alan McCurdy, Lightera Denmark ApS / DMTS – Global Fiber R&D, Norcross, Georgia, United States
Workshop Organizer: Takeshi Hoshida, Fujitsu, Kanagawa, Japan
Workshop Organizer: Pascal Pecci, Meta, Paris, France
Workshop Speaker: Rang-Chen (Ryan) Yu, TeraHop, San Jose, California, United States
Workshop Speaker: Takashi Matsui, NTT Access Network Service Systems Laboratories, Tsukuba, Japan
Workshop Speaker: Christian Antonelli, University of L'Aquila, L'Aquila, Italy
Workshop Speaker: Peter Borel, Lightera Denmark ApS, Brøndby, Denmark
Workshop Speaker: Lidia Galdino, Corning Inc, Corning, United Kingdom
Workshop Speaker: Eduardo Mateo, NEC Corporation – Submarine Network Division, Tokyo, Japan

Workshop Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Sunday, September 28, 2025, 11:00 - 12:30 Auditorium 11

S.01.02 - Workshop 4: Reconfigurable, Adaptable and Intelligent Access Networks - Do we have real use cases?

► **Short description:** This workshop will explore what is driving the evolution of optical access networks and the potential role for more flexible and intelligent systems, with the ultimate aim to identify technologies that could deliver real value. Topics in scope include more adaptable underlying transmission links, artificial intelligence (AI) and monitoring/sensing enabled access networks. Workshop speakers drawn from the network operator domain, along with experts from system vendors and academia, will share their unique insights and contribute to a lively and interactive session.

Speakers:
• **Ryo Koma** (NTT, Japan)
"Network Reconfigurability in All-Photonics Future Metro-Access Converged Networks"
• **Andreas Gladisch** (Deutsche Telekom, Germany)
"Where do we need flexibility in access networks?"
• **Andrew Bender** (Nokia, USA)
"Adapting Access Networks for the Era of AI: A Framework for New Broadband Services"
• **Roberto Gaudino** (Politecnico di Torino, Italy)
"New Access Scenarios Enabled by Coherent Transmission in PON"
• **Ye Zhicheng** (Huawei, China)
"Intelligent FTTR Technologies and Application Towards 2030"
• **Mark Watts** (Verizon, USA)
"Leveraging a Fiber Infrastructure to Unlock Value from Mobility, Sensing to AI"
• **Dezhi Zhang** (China Telecom Group, China)
"Research on Intelligent Optical Access Network in China Telecom"
• **Anna Tzanakaki** (University of Athens, Greece)
"Access Networks Intelligence in Support of 6G Infrastructures"
• **Jörg-Peter Elbers** (Adtran, Germany)
"Intelligent Access Networks: The Next Frontier or a Buzzword Bonanza?"
• **Chathurika Ranaweera** (Deakin University, Australia)
"Distributed Edge Intelligence for Next-Generation Applications in Access Networks"

Workshop Organizer: Derek Nesset, Huawei UK, Ipswich, United Kingdom
Workshop Organizer: Paola Parolari, Politecnico di Milano, Milan, Italy
Workshop Organizer: Rene Bonk, Nokia Bell-Labs, Stuttgart, Germany
Workshop Organizer: Gaël Simon, Orange Innovation, Lannion, France
Workshop Speaker: Ryo Koma, NTT Access Network Srvice Systems Laboratories, Yokosuka, Japan
Workshop Speaker: Andreas Gladisch, Deutsche Telekom AG – Group Technology, Berlin, Germany
Workshop Speaker: Andrew Bender, Nokia, Dallas, United States
Workshop Speaker: Roberto Gaudino, Politecnico di Torino, Torino, Italy
Workshop Speaker: Ye Zhicheng, Huawei, Shenzhen, China
Workshop Speaker: Mark Watts, Verizon, New York, United States
Workshop Speaker: DEZHI ZHANG, China Telecom Research Institute, State Key Laboratory of Optical Fiber and Cable Manufacture Technology, Beijing, China
Workshop Speaker: Anna Tzanakaki, National and Kapodistrian University of Athens, Athens, Greece
Workshop Speaker: Jörg-Peter Elbers, Adtran Networks SE, Martinsried, Germany
Workshop Speaker: Chathurika Ranaweera, Deakin University, Geelong, Australia

Workshop Session
SC 2: Discrete photonic devices and technologies
Sunday, September 28, 2025, 11:00 - 12:30 Auditorium 12

S.01.03 - Workshop 3: Which modulator technology will dominate in next-generation transceivers? – Session 2: Modulator Technologies

► **Short description:** As optical links push toward higher transmission speeds, the modulator performance requirements are becoming increasingly stringent. This workshop will bring together industry experts and academic researchers to discuss the evolving landscape of modulator technologies, from Si photonics to InP and lithium niobate, as well as emerging hybrid approaches. Through system-level insights the suitability of different modulator material technologies for next-generation high-volume transmitters will be explored.

Workshop 3 – Part 2: Modulator Technologies

Speakers:
• Christian Koos (Karlsruhe Institute of Technology)
• Juerg Leuthold (ETH Zürich)
• Mizuki Shirao (Mitsubishi Electric)
• Molly Peils (OpenLight Photonics)
• Xinlun Cai (Liobate)

Workshop Organizer: Abdul Rahim, PhotonDelta, Eindhoven, Netherlands
Workshop Organizer: Despoina Petousi, ADTRAN, Berlin, Germany
Workshop Organizer: Wei Shi, Université Laval, Quebec, Canada
Workshop Speaker: Christian Koos, Karlsruhe Institute of Technology (KIT), Institutes of Photonics and Quantum Electronics (IPQ) and Microstructure Technology (IMT), Karlsruhe, Germany
Workshop Speaker: Jürg Leuthold, ETH Zürich – Institute of Electromagnetic Fields, Zurich, Switzerland
Workshop Speaker: Mizuki Shirao, Mitsubishi Electric Corporation, Kamakura, Japan
Workshop Speaker: Molly Piels, OpenLight Photonics, Goleta, California, United States
Workshop Speaker: Xinlun Cai, Liobate Technologies, Nanjing, China

Workshop Session
SC 2: Discrete photonic devices and technologies
Sunday, September 28, 2025, 11:00 - 12:30 Auditorium 15

S.01.04 - Workshop 2: AI-Driven Innovations in Photonic Device Design, Fabrication and Testing.

► **Short description:** AI is revolutionizing photonic devices and integrated systems, driving breakthroughs in design, fabrication, data analysis, and integration. This workshop brings together top experts from academia and industry to explore cutting-edge AI applications in photonics, featuring AI tool demos, real-world case studies, and discussions on the future of AI-driven innovation in product design and realization.

► **Workshop outline:**
This workshop explores how artificial intelligence is transforming the photonic integrated circuit (PIC) landscape, from accelerated device design through to real-time testing and characterization. Part 1 will feature an introductory perspective from Hewlett Packard Enterprise, followed by demonstrations from three leading design software vendors — Flexcompute, VPI Photonics, and Synopsys Lumerical— showcasing how AI is enabling faster, more ecicient PIC design. Part 2 shifts to real-time applications, with EXFO and Evident Scientific presenting AI-driven tools for testing and defect detection. The workshop concludes with a 50-minute panel discussion, bringing all speakers together to debate roadmaps, workflow integration, performance trade-ocs, and the future impact of AI on photonics.

► **Agenda – Workshop 2 Part 2: AI for Real-Time Applications (11.00–12.30)**

Demos / Presentations (20 mins each)
• Dr Raphael Dubé-Demers, EXFO, Canada
• Jane Bratherton, Evident Scientific GmbH (formerly Olympus), UK

Panel Discussion: The Future of AI Tools for Device Design, Fabrication and Testing (50 mins)
(Panellists: all demo speakers from Parts 1 & 2)
Guiding questions:
• What is the next step?
• What new approaches will we adopt?
• How much faster can we design with these tools?
• What performance improvements are realistic?
• Does acceleration reduce accuracy?
• Product roadmaps or academic collaborations?
• Where is the limit?
• How will workflows need to adapt to integrate AI?

Workshop Organizer: Selina Farwell, Lumentum, Caswell, United Kingdom
Workshop Organizer: Francesco Da Ros, Technical University of Denmark (DTU), Kongens Lyngby, Denmark
Workshop Organizer: Stylianos Sygletos, Aston University, Aston, United States
Workshop Organizer: Eric Bernier, Huawei, Ottawa, Canada
Workshop Speaker: Raphaël Dubé-Demers, EXFO, Québec City, Canada
Workshop Speaker: Jane Bratherton, Evident Scientific GmbH, Stansted, Essex, United Kingdom
Workshop Speaker: Wolfger Peelaers, Hewlett Packard Labs, Diegem, Belgium
Workshop Speaker: Yannick Augenstein, Flexcompute Inc, Boston, United States
Workshop Speaker: Elias Giacoumidis, VPIphotonics GmbH, Berlin, Germany
Workshop Speaker: Adam Reid, Synopsys Lumerical, Vancouver, Canada

Workshop Session
SC 11: Quantum communications and quantum computing
Sunday, September 28, 2025, 11:00 - 12:30 B3 M1-4

S.01.05 - Workshop 5: Quantum Key Distribution: Advancements, Challenges and Real-World Implementation.

► **Short description:** As quantum computers advance and pose an increasing threat to modern cryptographic systems, the need for alternative cryptographic approaches becomes more urgent. Quantum key distribution offers a promising solution for building quantum-secure networks. This workshop explores advancements, challenges, and real-world applications related to QKD and the integration of quantum technology into current telecom infrastructure. By attending this workshop, you will gain valuable insights into the use cases and challenges of QKD. The session will explore both Discrete Variable (DV) and Continuous Variable (CV) QKD, highlighting their key differences and operational mechanisms. You will learn how each approach functions, their advantages in securing communications, and the obstacles they face in practical implementation. This workshop will provide a comprehensive understanding of QKD's role in building future-proof cryptographic systems.
Additionally, the workshop will emphasize the integration of quantum systems into telecom networks, a key advancement in strengthening security and achieving quantum-safe communications. Utilizing existing fiber-optic infrastructure, QKD and other quantum technologies can be efficiently integrated into contemporary networks.

Speakers and Presentations:
• **Imran Khan**, KEEQuant
"Tutorial: Continuous Variable QKD"
Duration: 25 min + 5 min
• **Florian Prawits and Daniel Pereira**, AIT
"Attacks and Countermeasures on QKD Systems"
Duration: 25 min + 5 min
• **Søren Henriksen**, Global Connect
"On the path to quantum resilient communication, a telco perspective"
Duration: 25 min + 5 min

Workshop Organizer: Alessandro Zavatta, QTI, Firenze, Italy
Workshop Organizer: Davide Bacco, Universita' di Firenze, Firenze, Italy
Workshop Organizer: Tobias Gehring, DTU, Lyngby, Denmark
Workshop Speaker: Imran Khan, KEEQuant GmbH, Fürth, Germany
Workshop Speaker: Florian Prawits, AIT Austrian Institute of Technology, Vienna, Austria
Workshop Speaker: Søren Henriksen, GlobalConnect, Copenhagen, Denmark

Workshop Session
SC 9: Free-space optics and optical wireless technologies
Sunday, September 28, 2025, 11:00 - 12:30 B3 M5-M8

S.01.06 - Workshop 6: Coherent optical transceiver for Free-Space Optic links: Commercial-off-the-shelf or custom designed?

► **Short description:** Commercial Off-The-Shelf (COTS) solutions like Digital Coherent Optical (DCO) systems are increasingly used in space applications, such as by Starlink. However, Free Space Optical (FSO) communications face challenges due to atmospheric turbulence affecting signal processing and synchronization. There is a need to balance the high development costs of specialized modems with the ability to compensate atmospheric effects.

Speakers:
• **Anaëlle Maho** - Thales Alenia Space - FR
• **Ramon Mata Calvo** - ESA - NL
• **Juraj Poliak** - DLR - DE
• **Wim Korevaar** - TNO/TU-Eindhoven - NL

Panel Discussion

Workshop Organizer: Simon Fabbri, Viasat, Lausanne, Switzerland
Workshop Organizer: Jeffrey Lee, Coherent Corp, Dieburg, Germany
Workshop Speaker: Anaëlle Maho, Thales Alenia Space, Toulouse, France
Workshop Speaker: Ramon Mata Calvo, ESA (European Space Agency), Noordwijk, Netherlands
Workshop Speaker: Juraj Poliak, DLR (Deutsches Zentrum für Luft- und Raumfahrt) / German Aerospace Center, Oberpfaffenhofen, Germany
Workshop Speaker: Wim Korevaar, TNO & Eindhoven University of Technology (TU/e), Eindhoven, Netherlands

Workshop Session
SC 6: Architecture, modelling and performance of optical networks
Sunday, September 28, 2025, 11:00 - 12:30 B4 M1-4

S.01.07 - Workshop 7: Open Optical Networks-as-a-Service for 6G and AI: Vision or Reality?

► **Short description:** Open Optical Networks-as-a-Service (ONaaS) offers a groundbreaking approach, enabling on-demand, high-capacity, and ultra-low latency connectivity across access, metro, and core segments. This workshop delves into the feasibility of ONaaS, focusing on advancements driven by key industry consortia and standardization organizations. We will explore how open standards, software-defined networking (SDN), and digital twin technologies can enable seamless interoperability and intelligent automation.

Workshop 7 – Part 2

Speakers and Presentations:

• **Shinsuke Fujisawa, NEC, Japan** – *OpenConfig: Current status of Management models in OC enabling the Optical Network as a service*
Duration: 15 minutes + 5 minutes Q&A
• **Gabriele Galimberti, Nokia, Switzerland** – *IETF: Current status of Management models in IETF enabling the Optical Network as a service*
Duration: 15 minutes + 5 minutes Q&A
• **Gary Nicholl, Cisco, USA** – *OIF: Transceiver compatibility and current status of optical modules CMIS*
Duration: 15 minutes + 5 minutes Q&A
• **Final Round Table Discussion** – *Organizers and speakers*

Workshop Organizer: Hideki Nishizawa, NTT, Kanagawa, Japan
Workshop Organizer: Sai Kishore Bhyri, Infinera (IN), TIP, Bengaluru, India
Workshop Organizer: Andrea D'Amico, NEC Laboratories America Inc., Princeton, United States
Workshop Organizer: Gert Grammel, Juniper Networks (US), TIP, OpenROADM, IETF, OpenConfig, IOWN, OIF, Sunnyvale, United States
Workshop Speaker: Shinsuke Fujisawa, NEC Corporation, Chiba, Japan
Workshop Speaker: Gabriele Galimberti, Nokia, Helsinki, Finland
Workshop Speaker: Gary Nicholl, Cisco, Ottawa, Canada
Workshop Speaker: Mark Watts, Verizon, New York, United States
Workshop Speaker: Stefan Melin, Telia Company, Stockholm, Sweden
Workshop Speaker: Kentaro Nakamura, Fujitsu, Tokyo, Japan

Workshop Session
SC 8: Sensing and microwave photonics
Sunday, September 28, 2025, 11:00 - 12:30 B4 M5-8

S.01.08 - Workshop 11: Will photonics-enabled THz communication and sensing play a role in 6G?

► **Short description:** This workshop explores how photonics-driven THz generation can unlock new horizons for next-generation mobile networks. Industry leaders, standardization bodies, and academic experts will share their insights on the potential of THz frequencies for both communication and sensing applications, highlighting the ongoing efforts to shape the 6G era.

Workshop Organizer: Oskars Ozoliņš, RISE/RTU, Kista/Riga, Sweden
Workshop Organizer: Sebastian Randel, Institute of Photonics and Quantum Electronics, Karlsruhe Institute of Technology, Karlsruhe, Germany
Workshop Organizer: Chris Vagionas, Aristotle University of Thessaloniki, Thessaloniki, Greece

S.01.08.1	**TBD** Workshop Speaker: Dave Welch, AttoTude, Menlo Park, California, United States	11:00 - 11:18
S.01.08.2	**Terahertz Photonics for Integrated Sensing and Communication (ISAC)** Workshop Speaker: Xianbin Yu, Zhejiang University, Hangzhou, China	11:18 - 11:36
S.01.08.3	**Photonic integration enabling THz wireless communication** Workshop Speaker: Cyril Renaud, University College London (UCL), London, United Kingdom	11:36 - 11:54
S.01.08.4	**(Pre-)Standardisation for THz Communications** Workshop Speaker: Thomas Kürner, TU Braunschweig, IEEE 802.15SCTHz Chair, Braunschweig, Germany	11:54 - 12:12
S.01.08.5	**TBD** Workshop Speaker: Tetsuya Kawanishi, Waseda University, Tokyo, Japan	12:12 - 12:30

.
Sunday, September 28, 2025, 12:30 - 14:00

Lunch

Workshop Session
SC 4: Signal processing for optical communication and computing
Sunday, September 28, 2025, 14:00 - 15:30 Auditorium 10

S.02.01 - Workshop 8: Digital signal processing for optical fiber sensing.

► **Short description:** Digital signal processing has become paramount for modern fiber sensing technologies. It is one of the rare fields of fiber optics which brings together some of the most advanced signal processing techniques. Its signal processing quickly evolved from using simple pulses to employing advanced traditional signal processing techniques such as spread spectrum, handling of laser phase noise, polarization handling, digital backpropagation, etc. On top of that, machine learning techniques are extensively used. This workshop brings together experts in the field to discuss modern fiber sensing technologies from employed pulses, DSP, to feature extraction and event recognition.

Speakers:
• **Yue Tian** (NEC Labs, USA)
• **Mikael Mazur** (Bell Labs, USA)
• **María R. Fernández-Ruiz** (University of Alcalá, Spain)
• **Élie Awwad** (IP Paris, France)
• **Takeo Sasai** (NTT Network Innovation Laboratories, Japan)

Q&A: 20–30 minutes

Workshop Organizer: Fatih Yaman, NEC Laboratories America, Inc., Princeton, United States
Workshop Organizer: Sjoerd van der Heide, EFFECT Photonics, Eindhoven, Netherlands
Workshop Speaker: Yue Tian, NEC Laboratories America, Inc., Princeton, United States
Workshop Speaker: Mikael Mazur, Nokia Bell Labs, New Jersey, United States
Workshop Speaker: María R Fernández-Ruiz, University of Alcalá, Alcalá de Henares, Spain
Workshop Speaker: Élie Awwad, IP Paris, Paris, France
Workshop Speaker: Takeo Sasai, NTT, Yokosuka, Japan

Workshop Session
SC 5: Optical transmission systems
Sunday, September 28, 2025, 14:00 - 15:30 Auditorium 12

S.02.03 - Workshop 10: High Symbol-rate Transceivers - how to get to the pinnacle of performance?

► **Short description:** Aiming for higher symbol rates is from first sight the most obvious approach to meet the increasing demand for larger data capacity, as this approach minimizes the number of channels. However, it is not clear if CMOS ASICs and opto-electronic components will be able to support symbol rates of 300 GBd and beyond. The question remains which set of electronic and photonic technologies will enable the pinnacle of performance.

Speakers:
• Shahab Oveis Gharan, Ciena
• Christian Rasmussen, Cisco
• Jonathan Andree, Fraunhofer HHI
• Yin, Xin, UGhent
• Fabio Pitala, Keysight
• Masanori Nakamura, NTT
• Di Che, Nokia Bell Labs
• Kazuhiko Naoe, Lumentum
• Lars Zimmermann, IHP
• Ray Nguyen, Marvell

Workshop Organizer: Markus Grözing, Univerität Stuttgart, Stuttgart, Germany
Workshop Organizer: Georg Rademacher, Institute of Electrical and Optical Communications, University of Stuttgart, Stuttgart, Germany
Workshop Organizer: Qian Hu, Nokia Bell Labs, Murray Hill, NJ, United States
Workshop Speaker: Shahab Oveis Gharan, Ciena Corporation, Ottawa, Canada
Workshop Speaker: Christian Rasmussen, Cisco Systems, Maynard, United States
Workshop Speaker: Jonathan Andree, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institute (Fraunhofer HHI), Berlin, Germany
Workshop Speaker: Xin Yin, Ghent University, Ghent, Belgium
Workshop Speaker: Fabio Pittalà, Keysight Technologies GmbH, Böblingen, Germany
Workshop Speaker: Masanori Nakamura, NTT Corporation, Yokosuka, Japan
Workshop Speaker: Di Che, Nokia Bell Labs, Murray Hill, New Jersey, United States
Workshop Speaker: Kazuhiko Naoe, Lumentum, San Jose, United States
Workshop Speaker: Lars Zimmermann, IHP GmbH – Leibniz Institute for High Performance Microelectronics and TU Berlin (Joint Lab Silicon Photonics), Frankfurt, Germany
Workshop Speaker: Ray Nguyen, Marvell Technology, Santa Clara, United States

Workshop Session
SC 3: Photonic integrated circuits, assemblies and packaging
Sunday, September 28, 2025, 14:00 - 15:30 Auditorium 15

S.02.04 - Workshop 9: AI Interconnect Dilemma: Which Technology Is Doomed – VCSELs or Silicon Photonics?

► **Short description:** As AI system constraints put pressure on the energy, density, and cost of the interconnect technologies, with 400G already within reach, the industry faces a critical question: Can VCSELs, the Industry's workhorse for interconnect technology, evolve to meet next-generation demands, or will Silicon Photonics emerge as the dominant technology? This workshop brings together experts from system companies, module manufacturers, and chip developers to explore the trade-offs, scalability challenges, and innovation pathways shaping the future of high-speed interconnects. Attendees will gain key insights into technology roadmaps, manufacturability, and the economic viability of these competing solutions. The session will feature 12 presentations from industry leaders and 2 panel discussions.

Speakers:
- **Vlad Kozlov** - Light Counting
- **Drew Alduino** - Meta
- **Mark Filer** - Oracle
- **Henning Lysda**l - NVIDIA
- **Jiangwei Man** - Huawei
- **Matt Sysak** - Lumentum
- **Subal Sahni** - Celestial AI
- **Hanjo Rhee** - Sicoya
- **Connie Chang-Hasnain** - Berxel
- **Al Yuen** - Picojool
- **Roman Koerner** - Trumpf
- **Anand Ramaswamy** - Broadcom

Workshop Organizer: Eric Bernier, Huawei, Ottawa, Canada
Workshop Organizer: Benjamin Lee, NVIDIA, New York, United States
Workshop Organizer: Daniel Kuchta, NVIDIA (Principal Hardware System Architect; formerly IBM T. J. Watson Research Center; IEEE Photonics Society Fellow Evaluator), Yorktown Heights, NY, United States
Workshop Speaker: Vladimir Kozlov, LightCounting LLC, Washington, United States
Workshop Speaker: Drew Alduino, Meta Platforms, Inc., San Francisco, United States
Workshop Speaker: Mark Filer, Oracle, Sunnyvale, United States
Workshop Speaker: Henning Lysdal, Nvidia, Roskilde, Denmark
Workshop Speaker: Jiangwei Man, Huawei Technologies Co., Ltd., Shenzhen, China
Workshop Speaker: Matthew Sysak, Lumentum, San Jose, California, United States
Workshop Speaker: Subal Sahni, Celestial AI, Santa Clara, California, United States
Workshop Speaker: Hanjo Rhee, Sicoya GmbH, Berlin, Germany
Workshop Speaker: Constance J. (Connie) Chang-Hasnain, Berxel Photonics Co., Ltd., Shenzhen, China
Workshop Speaker: Albert (Al) Yuen, Picojool, Inc., Palo Alto, California, United States
Workshop Speaker: Roman Koerner, TRUMPF Photonic Components GmbH, Ulm, Germany
Workshop Speaker: Anand Ramaswamy, Broadcom, Palo Alto, California, United States

Workshop Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Sunday, September 28, 2025, 14:00 - 15:30 B3 M1-4

S.02.05 - Workshop 12: Is the access network ready to host quantum technologies?

► **Short description:** The integration of quantum technologies, including quantum key distribution, into access networks presents unique challenges due to architectural constraints, coexistence issues, and high losses in the point-to-multipoint links of passive optical networks. Despite these difficulties, the short-reach nature of access networks may facilitate the support of quantum secure communications. This workshop brings together industry experts, operators, vendors, and academic researchers to explore the challenges and opportunities of deploying quantum technologies in access networks, stimulating an engaging and dynamic discussion.

Speakers and Presentations:
• **Catherine White**, British Telecom, UK
"*A possible roadmap for quantum comms in the access network: use-cases for QKD and beyond, techno economics, challenge of integration.*"
• **Jose Manuel Rivas Moscoso**, Telefónica I+D, Spain
"Requirements for the deployment of QKD technologies in access networks"
• **Davide Bacco**, Università di Firenze, Italy
"QKD in existing telecom networks"
• **Gianluca Boso**, ID Quantique SA, Switzerland
"Challenges and future perspectives for integration of quantum key distribution in the access network"
• **Chigo Okonkwo**, Eindhoven University of Technology, Netherland
"Addressing challenges towards low-cost continuous variable quantum key distribution systems"
• **Rui Wang**, University of Bristol, UK
"Quantum security for 5G fronthaul networks."
• **Go Kato,** NICT, Japan
"Bridging Implementation and Theory in QKD Certification: Insights from Japan's Standardization Efforts"
• **Giannis Giannoulis,** National Technical University of Athens, Greece
"Coexistence of Classical and QKD Signals over PON and Optical Access Infrastructure"

Workshop Organizer: Paola Parolari, Politecnico di Milano, Milan, Italy
Workshop Organizer: Michela Svaluto Moreolo, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC/CERCA), Castelldefels, Spain
Workshop Speaker: Catherine White, BT (British Telecom), Ipswich, United Kingdom
Workshop Speaker: José Manuel Rivas-Moscoso, Telefónica Global CTIO / Telefónica I+D, Madrid, Spain
Workshop Speaker: Davide Bacco, Universita' di Firenze, Firenze, Italy
Workshop Speaker: Gianluca Boso, ID Quantique SA, Geneva, Switzerland
Workshop Speaker: Chigo Okonkwo, Eindhoven University of Technology (TU/e), Eindhoven, Netherlands
Workshop Speaker: Rui Wang, University of Bristol, Quantum networks, Bristol, United Kingdom
Workshop Speaker: Go Kato, National Institute of Information and Communications Technology (NICT), Tokyo, Japan
Workshop Speaker: Giannis Giannoulis, National Technical University of Athens, Athens, Greece

Workshop Session
SC 9: Free-space optics and optical wireless technologies
Sunday, September 28, 2025, 14:00 - 15:40 B3 M5-M8

S.02.06 - Workshop 13: In-Building Networks: Ways to lower energy and cost per bit.

► **Short description:** The workshop addresses the combination of fiber-to-the-room (FTTR) with Wi-Fi as a promising solution to increase the coverage of high data rates in households and industries. We will discuss recent developments of next-generation in-building networks with a focus on lower cost and carbon footprints.

Workshop Organizer: Christian Bluemm, Huawei European Research Center, Munich, Germany
Workshop Organizer: Christoph Kottke, Fraunhofer HHI (Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute), Berlin, Germany

S.02.06.1	**Opening words** Workshop Speaker: Christian Bluemm, Huawei European Research Center, Munich, Germany Workshop Speaker: Christoph Kottke, Fraunhofer HHI (Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute), Berlin, Germany	14:00 - 14:10
S.02.06.2	**Optical Access Technology - Efficient in Energy & Cost** Workshop Speaker: Rene Bonk, Nokia Bell-Labs, Stuttgart, Germany	14:10 - 14:25
S.02.06.3	**Challenges and Solutions of Modern Home Networking** Workshop Speaker: Martin Kuipers, Adtran GmbH, Berlin, Germany Workshop Speaker: Jeremias Dötterl, Adtran GmbH, Berlin, Germany	14:25 - 14:40
S.02.06.4	**Energy Consumption in converged in-building networks** Workshop Speaker: Carmen Mas Machuca, Universität der Bundeswehr München, Technical University of Munich (TUM), Neubiberg, Germany	14:40 - 14:55
S.02.06.5	**Intelligent FTTR Solution Enables Green Smart Home** Workshop Speaker: Xu Fan, Huawei, Shenzhen, China	14:55 - 15:10
S.02.06.6	**SoC Solutions for Energy-efficient Multi-AP WLAN with Optical Backhaul** Workshop Speaker: Rainer Strobel, MaxLinear, Munich, Germany	15:10 - 15:25
S.02.06.7	**Energy consumption and carbon footprint of optical transceivers** Workshop Speaker: Kai Habel, FhG Heinrich Hertz Institute, Berlin, Germany Workshop Speaker: Lutz Stobbe, Fraunhofer IZM, Berlin, Germany	15:25 - 15:40

Workshop Session
SC 10: Control and management of optical networks
Sunday, September 28, 2025, 14:00 - 15:30 B4 M1-4

S.02.07 - Workshop 14: Optical Networks and AI: do we need a brand-new infrastructure for AI, and can AI help run it?

► **Short description:** While AI can help with operation in next generation networks (i.e., AI for Optical Networks), how can optical networks be leveraged to help AI model training (Optical Networks for AI)?
AI has been proposed to tackle many design and operation topics in optical networks for the past 10 years or so, and it is now time for a reality check and possibly on a new outlook on the design of optical networks tailored for DCI transport requirements as genAI is becoming ubiquitous.

Workshop 14 – Part 1: Network for AI

Speakers:
• **Roy Rubenstein, LightCounting** – *The Photonics Opportunity Driven by AI: A Market Research Perspective*
• **Junjie Li, China Telecom, China** – *Towards All-Optical Intelligent Interconnection for AI-Era Networks*
• **Jose Manuel Rivas, Telefónica, Spain** – *The Role of Optical Networking in Distributed AI Training*
• **Giuseppe Rizzelli, Meta, UK** – *The Role of Optical Networks for Regional and Multi-Regional AI Training*
• **Zhiyong Feng, Huawei**, **China** – *Intelligent Physical Layer Technology in a Large-Capacity Intelligent Computing Interconnection System*

Workshop Organizer: Yvan Pointurier, Huawei, Boulogne-Billancourt, France
Workshop Organizer: Raul Muñoz, CTTC, Castelldefels, Spain
Workshop Organizer: Behnam Shariati, HHI, Berlin, Germany
Workshop Speaker: Roy Rubenstein, LightCounting, Eugene, United States
Workshop Speaker: Junjie Li, China Telecom, China Telecom, China
Workshop Speaker: José Manuel Rivas-Moscoso, Telefónica Global CTIO / Telefónica I+D, Madrid, Spain
Workshop Speaker: Giuseppe Rizzelli, Politecnico di Torino, Torino, Italy
Workshop Speaker: Zhiyong Feng, Huawei Technologies, Shenzhen, China

Workshop Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Sunday, September 28, 2025, 14:00 - 15:30 B4 M5-8

S.02.08 - Workshop 15: Is hollow-core fiber ready for 6G? - Technologies and Standards

► **Short description:**As data demands and mobile communication systems evolve toward 6G, the limitations of conventional silica-based fibers in handling massive data volumes and ultrahigh speeds are becoming apparent. Hollow-core fibers (HCFs) offer transformative advantages, including lower latency, reduced dispersion, and lower attenuation. This workshop will explore the role of HCFs in addressing key challenges in 6G mobile fronthaul, advanced end-user services, new opportunities as well as concerns regarding cost, reliability, and operations. As a foundation for future networks, the evolution of the relevant standards, incl MOPA, and how they are addressing HCF for 6G, will be covered. This workshop will also explore how analogue radio-over-fiber solutions can benefit from HCF.

Workshop Organizer: Oskars Ozoliņš, RISE/RTU, Kista/Riga, Sweden
Workshop Organizer: Stefan Dahlfort, Ericsson, Kista, Sweden

.
Sunday, September 28, 2025, 15:30 - 16:00
Coffee break

Workshop Session
SC 4: Signal processing for optical communication and computing
Sunday, September 28, 2025, 16:00 - 17:30 Auditorium 10

S.02.01 - Workshop 8: Digital signal processing for optical fiber sensing.

► **Short description:** Digital signal processing has become paramount for modern fiber sensing technologies. It is one of the rare fields of fiber optics which brings together some of the most advanced signal processing techniques. Its signal processing quickly evolved from using simple pulses to employing advanced traditional signal processing techniques such as spread spectrum, handling of laser phase noise, polarization handling, digital backpropagation, etc. On top of that, machine learning techniques are extensively used. This workshop brings together experts in the field to discuss modern fiber sensing technologies from employed pulses, DSP, to feature extraction and event recognition.

Speakers:
• Zhiping Jiang (Huawei Technologies, Canada)
• Jasper Müller (Adtran, Germany)
• Fabien Boitier (Bell Labs, France)
• Darko Zibar (DTU, Denmark)
• Biondo Biondi (Stanford University, USA)
• Steinar Bjørnstad (Tampnet, Norway)

Q&A: 20–30 minutes

Workshop Organizer: Fatih Yaman, NEC Laboratories America, Inc., Princeton, United States
Workshop Organizer: Sjoerd van der Heide, EFFECT Photonics, Eindhoven, Netherlands
Workshop Speaker: Zhiping Jiang, Huawei Technologies, Ottawa, Canada
Workshop Speaker: Jasper Müller, dtran Networks SE, Martinsried, Germany
Workshop Speaker: Fabien Boitier, Bell Labs,, Massy, France
Workshop Speaker: Darko Zibar, Technical University of Denmark (DTU), Kongens Lyngby, Denmark
Workshop Speaker: Biondo Biondi, Stanford University, Stanford, United States
Workshop Speaker: Steinar Bjørnstad, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

Workshop Session
SC 5: Optical transmission systems
Sunday, September 28, 2025, 16:00 - 17:30 Auditorium 12

S.02.03 - Workshop 10: High Symbol-rate Transceivers - how to get to the pinnacle of performance?

► **Short description:** Aiming for higher symbol rates is from first sight the most obvious approach to meet the increasing demand for larger data capacity, as this approach minimizes the number of channels. However, it is not clear if CMOS ASICs and opto-electronic components will be able to support symbol rates of 300 GBd and beyond. The question remains which set of electronic and photonic technologies will enable the pinnacle of performance.

Speakers:
• Shahab Oveis Gharan, Ciena
• Christian Rasmussen, Cisco
• Jonathan Andree, Fraunhofer HHI
• Yin, Xin, UGhent
• Fabio Pitala, Keysight
• Masanori Nakamura, NTT
• Di Che, Nokia Bell Labs
• Kazuhiko Naoe, Lumentum
• Lars Zimmermann, IHP
• Ray Nguyen, Marvell

Workshop Organizer: Markus Grözing, Univerität Stuttgart, Stuttgart, Germany
Workshop Organizer: Georg Rademacher, Institute of Electrical and Optical Communications, University of Stuttgart, Stuttgart, Germany
Workshop Organizer: Qian Hu, Nokia Bell Labs, Murray Hill, NJ, United States
Workshop Speaker: Shahab Oveis Gharan, Ciena Corporation, Ottawa, Canada
Workshop Speaker: Christian Rasmussen, Cisco Systems, Maynard, United States
Workshop Speaker: Jonathan Andree, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institute (Fraunhofer HHI), Berlin, Germany
Workshop Speaker: Xin Yin, Ghent University, Ghent, Belgium
Workshop Speaker: Fabio Pittalà, Keysight Technologies GmbH, Böblingen, Germany
Workshop Speaker: Masanori Nakamura, NTT Corporation, Yokosuka, Japan
Workshop Speaker: Di Che, Nokia Bell Labs, Murray Hill, New Jersey, United States
Workshop Speaker: Kazuhiko Naoe, Lumentum, San Jose, United States
Workshop Speaker: Lars Zimmermann, IHP GmbH – Leibniz Institute for High Performance Microelectronics and TU Berlin (Joint Lab Silicon Photonics), Frankfurt, Germany
Workshop Speaker: Ray Nguyen, Marvell Technology, Santa Clara, United States

Workshop Session
SC 3: Photonic integrated circuits, assemblies and packaging
Sunday, September 28, 2025, 16:00 - 17:30 Auditorium 15

S.02.04 - Workshop 9: AI Interconnect Dilemma: Which Technology Is Doomed – VCSELs or Silicon Photonics?

► **Short description:** As AI system constraints put pressure on the energy, density, and cost of the interconnect technologies, with 400G already within reach, the industry faces a critical question: Can VCSELs, the Industry's workhorse for interconnect technology, evolve to meet next-generation demands, or will Silicon Photonics emerge as the dominant technology? This workshop brings together experts from system companies, module manufacturers, and chip developers to explore the trade-offs, scalability challenges, and innovation pathways shaping the future of high-speed interconnects. Attendees will gain key insights into technology roadmaps, manufacturability, and the economic viability of these competing solutions. The session will feature 12 presentations from industry leaders and 2 panel discussions.

Speakers:
• **Vlad Kozlov** - Light Counting
• **Drew Alduino** - Meta
• **Mark Filer** - Oracle
• **Henning Lysda**l - NVIDIA
• **Jiangwei Man** - Huawei
• **Matt Sysak** - Lumentum
• **Subal Sahni** - Celestial AI
• **Hanjo Rhee** - Sicoya
• **Connie Chang-Hasnain** - Berxel
• **Al Yuen** - Picojool
• **Roman Koerner** - Trumpf
• **Anand Ramaswamy** - Broadcom

Workshop Organizer: Eric Bernier, Huawei, Ottawa, Canada
Workshop Organizer: Benjamin Lee, NVIDIA, New York, United States
Workshop Organizer: Daniel Kuchta, NVIDIA (Principal Hardware System Architect; formerly IBM T. J. Watson Research Center; IEEE Photonics Society Fellow Evaluator), Yorktown Heights, NY, United States
Workshop Speaker: Vladimir Kozlov, LightCounting LLC, Washington, United States
Workshop Speaker: Drew Alduino, Meta Platforms, Inc., San Francisco, United States
Workshop Speaker: Mark Filer, Oracle, Sunnyvale, United States
Workshop Speaker: Henning Lysdal, Nvidia, Roskilde, Denmark
Workshop Speaker: Jiangwei Man, Huawei Technologies Co., Ltd., Shenzhen, China
Workshop Speaker: Matthew Sysak, Lumentum, San Jose, California, United States
Workshop Speaker: Subal Sahni, Celestial AI, Santa Clara, California, United States
Workshop Speaker: Hanjo Rhee, Sicoya GmbH, Berlin, Germany
Workshop Speaker: Constance J. (Connie) Chang-Hasnain, Berxel Photonics Co., Ltd., Shenzhen, China
Workshop Speaker: Albert (Al) Yuen, Picojool, Inc., Palo Alto, California, United States
Workshop Speaker: Roman Koerner, TRUMPF Photonic Components GmbH, Ulm, Germany
Workshop Speaker: Anand Ramaswamy, Broadcom, Palo Alto, California, United States

Workshop Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Sunday, September 28, 2025, 16:00 - 17:30 B3 M1-4

S.02.05 - Workshop 12: Is the access network ready to host quantum technologies?

► **Short description:** The integration of quantum technologies, including quantum key distribution, into access networks presents unique challenges due to architectural constraints, coexistence issues, and high losses in the point-to-multipoint links of passive optical networks. Despite these difficulties, the short-reach nature of access networks may facilitate the support of quantum secure communications. This workshop brings together industry experts, operators, vendors, and academic researchers to explore the challenges and opportunities of deploying quantum technologies in access networks, stimulating an engaging and dynamic discussion.

Speakers and Presentations:
• **Catherine White**, British Telecom, UK
"*A possible roadmap for quantum comms in the access network: use-cases for QKD and beyond, techno economics, challenge of integration.*"
• **Jose Manuel Rivas Moscoso**, Telefónica I+D, Spain
"Requirements for the deployment of QKD technologies in access networks"
• **Davide Bacco**, Università di Firenze, Italy
"QKD in existing telecom networks"
• **Gianluca Boso**, ID Quantique SA, Switzerland
"Challenges and future perspectives for integration of quantum key distribution in the access network"
• **Chigo Okonkwo**, Eindhoven University of Technology, Netherland
"Addressing challenges towards low-cost continuous variable quantum key distribution systems"
• **Rui Wang**, University of Bristol, UK
"Quantum security for 5G fronthaul networks."
• **Go Kato,** NICT, Japan
"Bridging Implementation and Theory in QKD Certification: Insights from Japan's Standardization Efforts"
• **Giannis Giannoulis,** National Technical University of Athens, Greece
"Coexistence of Classical and QKD Signals over PON and Optical Access Infrastructure"

Workshop Organizer: Paola Parolari, Politecnico di Milano, Milan, Italy
Workshop Organizer: Michela Svaluto Moreolo, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC/CERCA), Castelldefels, Spain
Workshop Speaker: Catherine White, BT (British Telecom), Ipswich, United Kingdom
Workshop Speaker: José Manuel Rivas-Moscoso, Telefónica Global CTIO / Telefónica I+D, Madrid, Spain
Workshop Speaker: Davide Bacco, Universita' di Firenze, Firenze, Italy
Workshop Speaker: Gianluca Boso, ID Quantique SA, Geneva, Switzerland
Workshop Speaker: Chigo Okonkwo, Eindhoven University of Technology (TU/e), Eindhoven, Netherlands
Workshop Speaker: Rui Wang, University of Bristol, Quantum networks, Bristol, United Kingdom
Workshop Speaker: Go Kato, National Institute of Information and Communications Technology (NICT), Tokyo, Japan
Workshop Speaker: Giannis Giannoulis, National Technical University of Athens, Athens, Greece

Workshop Session
SC 10: Control and management of optical networks
Sunday, September 28, 2025, 16:00 - 17:30 B4 M1-4

S.02.07 - Workshop 14: Optical Networks and AI: do we need a brand-new infrastructure for AI, and can AI help run it?

► **Short description:** While AI can help with operation in next generation networks (i.e., AI for Optical Networks), how can optical networks be leveraged to help AI model training (Optical Networks for AI)?
AI has been proposed to tackle many design and operation topics in optical networks for the past 10 years or so, and it is now time for a reality check and possibly on a new outlook on the design of optical networks tailored for DCI transport requirements as genAI is becoming ubiquitous.

Workshop 14 – Part 2: AI for Network

Speakers:
• **Chen Zhu, ByteDance** – *AI-driven Large-Scale Optical Network Deployment and Operation*
• **Toru Mano, NTT, Japan** – *Toward Smarter Optical Networks: AI Requirements, Technologies, and Lessons from Field Trials: A Telecom Operator's Perspective*
• **David Charles, Nokia, Canada** – *AI for Optical Automation: Moving from Concept to Critical Infrastructure*
• **Lilin Yi, Shanghai Jiao Tong University (SJTU), China** – *OpticsGPT – A LLM in the Optical Domain for Optical Networking*
• **Cen Wang, KDDI, Japan** – *Action Generation for Operations: LLM-Centric Paradigms Towards Autonomous Driving Optical Networks*

Workshop Organizer: Yvan Pointurier, Huawei, Boulogne-Billancourt, France
Workshop Organizer: Raul Muñoz, CTTC, Castelldefels, Spain
Workshop Organizer: Behnam Shariati, HHI, Berlin, Germany
Workshop Speaker: Chen Zhu, ByteDance Ltd., Beijing, China
Workshop Speaker: Toru Mano, NTT Network Innovation Laboratories, Yokosuka, Japan
Workshop Speaker: David Charles, Nokia, Ottawa, Canada
Workshop Speaker: Lilin Yi, Shanghai Jiao Tong University (SJTU), Shanghai, China
Workshop Speaker: Cen Wang, KDDI Research, Inc., Saitama-ken, Japan

Workshop Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Sunday, September 28, 2025, 16:00 - 17:30 B4 M5-8

S.02.08 - Workshop 15: Is hollow-core fiber ready for 6G? - Technologies and Standards

► **Short description:**As data demands and mobile communication systems evolve toward 6G, the limitations of conventional silica-based fibers in handling massive data volumes and ultrahigh speeds are becoming apparent. Hollow-core fibers (HCFs) offer transformative advantages, including lower latency, reduced dispersion, and lower attenuation. This workshop will explore the role of HCFs in addressing key challenges in 6G mobile fronthaul, advanced end-user services, new opportunities as well as concerns regarding cost, reliability, and operations. As a foundation for future networks, the evolution of the relevant standards, incl MOPA, and how they are addressing HCF for 6G, will be covered. This workshop will also explore how analogue radio-over-fiber solutions can benefit from HCF.

Workshop Organizer: Oskars Ozoliņš, RISE/RTU, Kista/Riga, Sweden
Workshop Organizer: Stefan Dahlfort, Ericsson, Kista, Sweden

Workshop Session
SC 9: Free-space optics and optical wireless technologies
Sunday, September 28, 2025, 16:10 - 17:30 B3 M5-M8

S.02.06 - Workshop 13: In-Building Networks: Ways to lower energy and cost per bit.

► **Short description:** The workshop addresses the combination of fiber-to-the-room (FTTR) with Wi-Fi as a promising solution to increase the coverage of high data rates in households and industries. We will discuss recent developments of next-generation in-building networks with a focus on lower cost and carbon footprints.

Workshop Organizer: Volker Jungnickel, Fraunhofer Heinrich Hertz Institute, Berlin, Germany
Workshop Organizer: Christian Bluemm, Huawei European Research Center, Munich, Germany

S.02.06.1	**Exploration of Energy-Efficient Technologies for Optical Access Networks** Workshop Speaker: DEZHI ZHANG, China Telecom Research Institute, State Key Laboratory of Optical Fiber and Cable Manufacture Technology, Beijing, China	16:10 - 16:25
S.02.06.2	**FWA: a more energy efficient alternative to FTTR** Workshop Speaker: Mark Watts, Verizon, New York, United States	16:25 - 16:40
S.02.06.3	**Simplifying operations for cost and energy efficient in-building networks** Workshop Speaker: Gaël Simon, Orange Innovation, Lannion, France	16:40 - 16:55
S.02.06.4	**Panel Session with all Speakers**	16:55 - 17:30

Break
.
Sunday, September 28, 2025, 17:30 - 19:30 Plenary (Auditoria 10+11+12)

Get-Together - Balcony 1-2

Monday, September 29, 2025

Opening and Plenary
Opening and Plenary
Monday, September 29, 2025, 09:30 - 12:00 Plenary (Auditoria 10+11+12)

M.01 - ECOC 2025 Opening Ceremony and Plenary Talks

Welcome Address from Chairs 09:30 - 09:45

Plenary Talk 1 09:45 - 10:15
Professor Anne L'Huillier — *Attosecond Physics: From the Source to the Applications*
Plenary Speaker: Anne L'Huillier, Lund University, Lund, Sweden

Plenary Talk 2 10:15 - 10:45
Dr. Kazuhide Nakajima — Next Generation Optical Fibre Technology: Expectations and Applications
Plenary Speaker: Kazuhide Nakajima, NTT Access Network Service Systems Laboratories, Tsukuba, Japan

Plenary Talk 3 10:45 - 11:15
Dr. Benny Mikkelsen — Coherent Optics: Powering the Next Decade of Optical Communications
Plenary Speaker: Benny Mikkelsen, Senior Vice President and General Manager, Coherent Products and Components (Acacia) at Cisco, Boston, MA, United States

Plenary Talk 4 11:15 - 11:45
Dr. Edward Lee — Co-Packaged Optics in the Era of AI
Plenary Speaker: Edward Lee, Vice President, Mixed-Signal Design, NVIDIA, Santa Clara, California, United States

.
Monday, September 29, 2025, 12:00 - 13:30
Lunch

Paper Session
SC 1: Novel fibres, fibre devices and amplifiers
Monday, September 29, 2025, 13:30 - 15:00 Auditorium 10

M.02.01 - Multicore and Fiber Sensing

Chair: Patrice Mégret, University of Mons, Mons, Belgium

M.02.01.1 **Optical Fibers for Point and Distributed Dynamic Sensing** 13:30 - 14:00
Invited Speaker: Xiaoyi Bao, University of Ottawa, Ottawa, Canada

M.02.01.2 **True Time Delay Two-Dimensional Beamforming Enabled by Heterogeneous Multicore Fiber** 14:00 - 14:15
Paper Oral Presenter: Mario Annier González Pérez, iTEAM Research Institute, Universitat Politècnica de València, Valencia, Spain

M.02.01.3 **Differential Group Delay Measurement in Spun Birefringent** 14:15 - 14:30

	Uncoupled Multicore Fibers Paper Oral Presenter: Loreto Romero, University of Padova, Padova, Italy	
M.02.01.4	**0.3-dB-Loss SCF-to-MCF Power Splitter Based on a Biconical Splice Taper** Paper Oral Presenter: Sijing Liang, University of Southampton, Southampton, United Kingdom	14:30 - 14:45
M.02.01.5	**Fibre Fuse Propagation Characteristics and Threshold Power of Randomly Coupled Multi-core Fibre** Paper Oral Presenter: Ryota Imada, NTT, Tsukuba, Japan	14:45 - 15:00

Paper Session
SC 2: Discrete photonic devices and technologies
Monday, September 29, 2025, 13:30 - 15:00 Auditorium 11

M.02.02 - Modulators 1

Chair: Wilfried Maineult, II-VI Laser Enterprise (formerly Coherent) — Chip Designer Advanced Technology Engineer, Zurich, Switzerland

M.02.02.1	**Driver-free and Bias-free 112 Gb/s NRZ O-band Silicon Microring modulator with 95 GHz bandwidth** Paper Oral Presenter: Fengxin Yu, Zhangjiang Laboratory, Shanghai, China	13:30 - 13:45
M.02.02.2	**A 50 Gb/s NRZ O-band Silicon Disk Modulator with 6.4 THz FSR** Paper Oral Presenter: Minkyu Kim, imec, Leuven, Belgium	13:45 - 14:00
M.02.02.3	**Suspended Membrane TWE-TFLN Mach-Zehnder Modulator on Silicon Substrate** Paper Oral Presenter: Ting-Chen Hu, Nokia Bell Lab, Murray Hill, United States Paper Oral Presenter: Alessandro Aimone, Nokia Bell Labs, Stuttgart, Germany	14:00 - 14:15
M.02.02.4	**High-speed Direct-Detection Advanced Modulation Format Transmission Using a Silicon Microring Modulator with >90 GHz Bandwidth** Paper Oral Presenter: Zelu Wang, The Chinese University of Hong Kong, Shatin, Hong Kong	14:15 - 14:30
M.02.02.5	**Silicon nitride photonics and plasmonic microwave photonic circuits** Invited Speaker: Maurizio Burla, Technical University of Berlin, Berlin, Germany	14:30 - 15:00

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Monday, September 29, 2025, 13:30 - 14:45 Auditorium 12

M.02.03 - Heterogeneous integration

Chair: Nobuhiro Nishiyama, Tokyo Institute of Technology, Tokyo (Meguro-ku, Ōokayama), Japan
Chair: Sylvie Menezo, SCINTIL Photonics (Founder and CTO), Grenoble, France
Chair: Robert Halir, Universidad de Málaga, Department of Communications Engineering, Málaga, Spain

M.02.03.1 **Heterogeneous integration for silicon photonics based on micro-transfer printing** 13:30 - 14:30
Invited Tutorial Speaker: Gunther Roelkens, Ghent University - imec, Ghent, Belgium

M.02.03.2 **Hybrid Integrated Wavelength Tunable Laser Based on Sampled Multimode Waveguide Gratings** 14:30 - 14:45
Paper Oral Presenter: Yueyang Zhang, State Key Laboratory for Extreme Photonics and Instrumentation, College of Optical Science and Engineering, International Research Center for Advanced Photonics, Hangzhou, China

Symposia
Multiple Topics
Monday, September 29, 2025, 13:30 - 15:00 Auditorium 15

M.02.04 - Green ICT

Join this symposium to hear about what's done to evaluate ICT's climate footprint – and what's missing to get a generally useful tool to assess ICT services. How accurately can we determine the CO2 footprint of ICT, in general and in specific cases, and how can we use this to estimate whether ICT is good or bad for the climate, or which ICT service is more climate friendly.

► **Short description:** "The whys": Why is it important to evaluate the footprint of ICT for the climate, why is it important for finances, why does it matter in national contexts, why does it matter for other industries, and why is it of interest to network operators?

Symposium Organiser: Leif Katsuo Oxenløwe, DTU (Technical University of Denmark) and the GreenCOM project, Denmark

M.02.04.1 **Welcome and introduction** 13:30 - 13:40
Invited Symposium Speaker: Leif Katsuo Oxenløwe, DTU (Technical University of Denmark) and the GreenCOM project, Denmark

M.02.04.2 **On the World's limits and Absolute Sustainability** 13:40 - 13:50
Invited Symposium Speaker: Michael Zwicky Hauschild, Technical University of Denmark (DTU), Kongens Lyngby, Denmark

M.02.04.3 **On the financial aspects of green ICT** 13:50 - 14:00
Invited Symposium Speaker: Sara Ballan, The World Bank, København, Denmark

M.02.04.4 **Why ICT & Digital are the enablers of avoided emissions across sectors** 14:00 - 14:10
Invited Symposium Speaker: Andreas Candido, Global Enabling Sustainability Initiative (GeSI), Brussels, Belgium

M.02.04.5	**On Switzerland's ICT footprint and the product category rule for internet services** Invited Symposium Speaker: Amaël Parreaux-Ey, Resilio Solutions, Lausanne, Switzerland	14:10 - 14:20
M.02.04.6	**On the context and need for environmental impact evaluations of telecommunication in France** Invited Symposium Speaker: Julia Meyer, ADEME — Agence de la transition écologique, Angers, France	14:20 - 14:30
M.02.04.7	**Building the leading customer-centric green TechCo** Invited Symposium Speaker: Peter Søndergaard Andersen, TDC NET, København, Denmark	14:30 - 14:40
M.02.04.8	**A network operator's perspective** Invited Symposium Speaker: Andreas Gladisch, Deutsche Telekom AG – Group Technology, Berlin, Germany	14:40 - 14:50
M.02.04.9	**Global ICT sector energy and carbon footprint 2024 - based on reported data** Invited Symposium Speaker: Jens Malmodin, Ericsson Research, Stockholm, Sweden Invited Symposium Speaker: Dag Lundén, Ericsson Research, Stockholm, Sweden	14:50 - 15:00

Paper Session
SC 5: Optical transmission systems
Monday, September 29, 2025, 13:30 - 15:00 B3 M1-4

M.02.05 - SDM1

Chair: Kouki Shibahara, NTT Network Innovation Laboratories, Innovative Photonic Network Center, Rüschlikon, Zurich, Switzerland

M.02.05.1	**SDM Transmission Technologies Enabling Over-10-Tb/s SDM-MIMO Signals** Invited Speaker: Akira Kawai, NTT Network Innovation Laboratories, NTT Corporation, Yokosuka, Japan	13:30 - 14:00
M.02.05.2	**Joint Few-Mode O-band and Single-Mode C-Band Transmission Over a High Cut-Off Wavelength G.654 Compatible Fiber** Paper Oral Presenter: Ruben Soares Luis, National Institute of Information and Communication Technology, Koganei, Japan	14:00 - 14:15
M.02.05.3	**Inter-Core Crosstalk Estimation in Uni- and Bi-Directional Multiband WDM Transmissions** Paper Oral Presenter: Kosuke Kimura, NTT, Yokosuka-Shi, Kanagawa, Japan	14:15 - 14:30
M.02.05.4	**Coherent-Lite with Low-Complexity Baud-Rate-Sampling Receiver Enabled by Clock and Wavelength Locking Over 80 km 7-Core Fiber** Paper Oral Upgrade Presenter: Qian Hu, Nokia Bell Labs, Murray Hill, NJ, United States	14:30 - 15:00

Paper Session
SC 11: Quantum communications and quantum computing
Monday, September 29, 2025, 13:30 - 15:00 B3 M5-M8

M.02.06 - Scalable Quantum Photonics

Chair: Caterina Vigliar, Technical University of Denmark (DTU), Department of Electrical and Photonics Engineering; Centre of Excellence for Silicon Photonics for Optical Communications, Kongens Lyngby, Denmark

M.02.06.1	**Power Consumption Analysis of QKD Networks under Different Protocols and Detector Configurations** Paper Oral Presenter: Jiaheng Xiong, Politecnico di Milano, Milan, Italy	13:30 - 13:45
M.02.06.2	**Entanglement Purification by Integrated Silicon Photonics** Paper Oral Presenter: Yonghe Yu, Technical University of Denmark, Lyngby, Denmark	13:45 - 14:00
M.02.06.3	**Programmable Continuous-Variable Photonic Quantum Computing in the Time Domain** Invited Speaker: Shuntaro Takeda, The University of Tokyo, Tokyo, Japan	14:00 - 14:30
M.02.06.4	**Neuromorphic Quantum Photonics** Invited Speaker: Wolfram Pernice, Heidelberg University – Kirchhoff Institute for Physics, Neuromorphic Quantumphotonics Group, Heidelberg, Germany	14:30 - 15:00

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Monday, September 29, 2025, 13:30 - 15:00 B4 M1-4

M.02.07 - DSP in Advanced Optical Access Networks

Chair: Gaël Simon, Orange Innovation, Lannion, France

M.02.07.1	**Multi-user Chromatic Dispersion DSP-based Precompensation and DD Receiver for Very High Speed PON** Paper Oral Presenter: Roberto Gaudino, Politecnico di Torino, Torino, Italy	13:30 - 13:45
M.02.07.2	**Dual wavelength 200 Gbit/s NRZ-OOK Transmission Over 20 km with >30 dB Power Budget Enabled by Quantum-Dot SOAs** Paper Oral Presenter: Ahmed Galib Reza, Dublin City University, Dublin, Ireland	13:45 - 14:00
M.02.07.3	**Trends in Digital Signal Processing for IM-DD and Coherent Short-Reach and Optical Access Solutions** Invited Speaker: Stephan Pachnicke, Kiel University, Kiel, Germany	14:00 - 14:30
M.02.07.4	**Net 512 Gbps 320 Gbaud PAM4 Faster-Than-Nyquist Transmission With a 3 nm SerDes and TFLN Modulators** Paper Oral Upgrade Presenter: Charles St-Arnault, McGill University, Montreal, Canada	14:30 - 15:00

Paper Session
SC 8: Sensing and microwave photonics
Monday, September 29, 2025, 13:30 - 15:00 B4 M5-8

M.02.08 - MmWave/THz Photonic Processors

Chair: Chris Vagionas, Aristotle University of Thessaloniki, Thessaloniki, Greece

M.02.08.1	**Integrated Multi-beam Beamformer Enabled by Optical Delay Line-based Butler Matrix** Paper Oral Upgrade Presenter: Kai Fu, State Key Laboratory of Photonics and Communications, Shanghai Jiao Tong University, Shanghai, China	13:30 - 14:00
M.02.08.2	**Photonics-Enabled Simultaneous Demultiplexing and Down-Conversion of 220 Gb/s Aggregate 300 GHz Terahertz Signals** Paper Oral Presenter: Tien Dat Pham, NICT, Tokyo, Japan	14:00 - 14:15
M.02.08.3	**Real-time super-resolution THz imaging based on compressed sensing** Paper Oral Presenter: Xing Fang, Zhejiang University, Hangzhou, China	14:15 - 14:30
M.02.08.4	**Sub-THz Wireless Transmission with Photonic-assisted Two-dimensional Beamformer Using Optical Butler Matrix Circuits** Paper Oral Presenter: Honoka Ito, NTT Network Innovation Laboratories, Yokosuka-shi, Kanagawa, Japan	14:30 - 14:45
M.02.08.5	**High-Quality 98.5-GHz Carrier Generation with Silicon Photonics mm-Wave Band Synthesizer embedding a Multi-Resonant Optical Filter** Paper Oral Presenter: Antonio Malacarne, CNIT, Pisa, Italy	14:45 - 15:00

.
Monday, September 29, 2025, 15:00 - 15:30

Coffee break

Paper Session
SC 10: Control and management of optical networks
Monday, September 29, 2025, 15:30 - 17:00 Auditorium 10

M.03.01 - Network management evolution

Chair: Behnam Shariati, HHI, Berlin, Germany

M.03.01.1	**Transport API and its Role in the era of Coherent Pluggable Optics (Tutorial)** Invited Tutorial Speaker: Ramon Casellas, CTTC/CERCA, Castelldefels, Spain	15:30 - 16:30
M.03.01.2	**LLM Assistant for TAPI Context and Client Code Translation** Paper Oral Presenter: Aydin Jafari, Fraunhofer Heinrich-Hertz-Institut, Berlin, Germany	16:30 - 16:45
M.03.01.3	**Field Trial of LLM-based Autonomous Network Management with AI-Agent in Real-time 400G/800G Elastic Optical Network** Paper Oral Presenter: Haibin Huang, Department of Fundamental Network Technology, Beijing, China	16:45 - 17:00

Paper Session
SC 2: Discrete photonic devices and technologies
Monday, September 29, 2025, 15:30 - 16:45 Auditorium 11

M.03.02 - Modulators 2

Chair: Eric Bernier, Huawei, Ottawa, Canada

M.03.02.1	**Thin-Film Lithium-Niobate Photonic Devices with Gratings** Invited Speaker: Daoxin Dai, Zhejiang University, Hangzhou, China	15:30 - 16:00
M.03.02.2	**420 Gb/s Plasmonic Optical DAC for Coherent and IM/DD** Paper Oral Upgrade Presenter: David Moor, ETH Zurich, Zurich, Switzerland	16:00 - 16:30
M.03.02.3	**Efficient InGaAsP MOSCAP Microring Optical Modulator on III-V Membrane Platform** Paper Oral Presenter: Hiroya Sakumoto, The University of Tokyo, Tokyo, Japan	16:30 - 16:45

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Monday, September 29, 2025, 15:30 - 17:00 Auditorium 12

M.03.03 - Optical computing

Chair: Folkert Horst, IBM Research Europe (Zurich Research Lab), Rüschliko, Zurich, Switzerland
Chair: Francesco Da Ros, Technical University of Denmark (DTU), Kongens Lyngby, Denmark

M.03.03.1	**20 Gb/s Quaternary Content Addressable Memory using Silicon Photonics** Paper Oral Presenter: Antonios Prapas, Aristotle University of Thessaloniki, Thessaloniki, Greece	15:30 - 15:45
M.03.03.2	**Real-time All-optical Signal Equalisation with Silicon Photonic Recurrent Neural Networks** Paper Oral Presenter: Ruben Van Assche, Ghent University/imec, Ghent, Belgium	15:45 - 16:00
M.03.03.3	**Euclidean Distance Calculation Engine using an Analog Silicon Photonic Tensor Core** Paper Oral Presenter: Georgios Tsamis, Aristotle University of Thessaloniki, Thessaloniki, Greece	16:00 - 16:15
M.03.03.4	**Integrated recurrent optical spectral slicer for equalization of 100-km C-band IM/DD transmission** Paper Oral Presenter: Isidora Teofilovic, DTU, Lyngby, Denmark	16:15 - 16:30
M.03.03.5	**Multidimensionally-Encoded High-Precision Optical Multiplier for Matrix Multiplication** Paper Oral Presenter: Pierre Nay, Technical University of Denmark, Kgs. Lyngby, Denmark	16:30 - 16:45
M.03.03.6	**High parallelism optical dot-product processor based on FSR-free micro-ring resonators** Paper Oral Presenter: Zichao Zhao, Zhejiang University, Hangzhou, China	16:45 - 17:00

Symposia
Multiple Topics
Monday, September 29, 2025, 15:30 - 17:00 Auditorium 15

M.03.04 - Green ICT II

Join this symposium to hear about what's done to evaluate ICT's climate footprint – and what's missing to get a generally useful tool to assess ICT services. How accurately can we determine the CO2 footprint of ICT, in general and in specific cases, and how can we use this to estimate whether ICT is good or bad for the climate, or which ICT service is more climate friendly.

► **Short description:** "The what's and how's": How are systems evaluated, and what has been done so far? Based on these descriptions, we will have a panel discussion on what we may want to evaluate and what is needed to get there.

Symposium Organiser: Leif Katsuo Oxenløwe, DTU (Technical University of Denmark) and the GreenCOM project, Denmark

M.03.04.1	**On estimating footprint of internet services** Invited Symposium Speaker: Daniel Schien, University of Bristol, Bristol, United Kingdom	15:30 - 15:40
M.03.04.2	**Evaluating the Energy Performance of ICT Services - Challenges in Data, Allocation and Benchmarking, and Opportunities for Simplification and Standardization** Invited Symposium Speaker: Anders Andrae, Huawei Technologies Sweden AB / Huawei Technologies, Kista, Sweden	15:40 - 15:50
M.03.04.3	**On life cycle analyses (LCA) of Submarine Cables** Invited Symposium Speaker: Olivier Courtois, Alcatel Submarine Networks (ASN), Paris, France	15:50 - 16:00
M.03.04.4	**Driving real change with Product-Level Carbon Data – The case for Data centres and services** Invited Symposium Speaker: Thomas Daniel Winther Mardahl, Rejoose ApS, Frederiksberg, Denmark	16:00 - 16:10
M.03.04.5	**On LCA of networks** Invited Symposium Speaker: Gudrun Fjola Gudmundsdottir, Technical University of Denmark (DTU), Lyngby, Denmark	16:10 - 16:20
M.03.04.6	**On the GreenICT (competence center for sustainable information and communication technology) Project in Germany** Invited Symposium Speaker: Kai Habel, FhG Heinrich Hertz Institute, Berlin, Germany	16:20 - 16:30
M.03.04.7	**Panel discussion: what is wanted, needed and missing?**	16:30 - 17:00

Paper Session
SC 5: Optical transmission systems
Monday, September 29, 2025, 15:30 - 17:00 B3 M1-4

M.03.05 - SDM2

Chair: Georg Rademacher, Institute of Electrical and Optical Communications, University of Stuttgart, Stuttgart, Germany

M.03.05.1	**568.8 Tb/s C+L-Band Transmission Over 5,166 km in a Standard-**	15:30 - 16:00

	Cladding Diameter 19-Core Randomly-Coupled Multicore Fiber Paper Oral Upgrade Presenter: Besma Kalla, National Institute of Information and Communications Technology, Tokyo, Japan	
M.03.05.2	**19.2 THz S+C+L Transmission in a Field Deployed, Randomly-Coupled, Multicore Fiber** Paper Oral Presenter: Ruben Luis, NICT, Tokyo, Japan	16:00 - 16:15
M.03.05.3	**Long-Haul SDM Transmission over 12-Coupled-Core Fiber with Semi-Real-Time 24×24 MIMO Processing on FPGA** Paper Oral Presenter: Manabu Arikawa, NEC Corporation, Kawasaki, Japan	16:15 - 16:30
M.03.05.4	**Real-Time SDM-MIMO Transmission with 12-Coupled SDM Channels over Field-Installed Fibre Cable** Paper Oral Presenter: Kohki Shibahara, NTT Corporation, Yokosuka, Japan	16:30 - 16:45
M.03.05.5	**Influence of Inter-core Crosstalk in High-capacity 205 to 359 km Unrepeatered Transmission over 2-Core MCF** Paper Oral Presenter: Hans BISSESSUR, Alcatel Submarine Networks, Les Ulis, France	16:45 - 17:00

Paper Session
SC 6: Architecture, modelling and performance of optical networks
Monday, September 29, 2025, 15:30 - 17:00 B3 M5-M8

M.03.06 - Optical Switching

Chair: Carmen Mas Machuca, Universität der Bundeswehr München, Technical University of Munich (TUM), Neubiberg, Germany

M.03.06.1	**Implementation and Demonstration of Contention-Less 19-Core Fiber-Based Spatial Cross-Connect Using Packaged Core Selective Switches and Core-Port Selectors** Paper Oral Presenter: Ryunosuke Sasaki, Kagawa University, Takamatsu, Japan	15:30 - 15:45
M.03.06.2	**Fast Optical Switch Enabled Filterless SDM Networks with Adaptive Topology** Paper Oral Presenter: Yiran Teng, University of Bristol, Bristol, United Kingdom	15:45 - 16:00
M.03.06.3	**Evolution Towards High-Dimensional Reconfigurable Optical Add-Drop Multiplexer/Optical Cross-Connect (ROADM/OXC)** Invited Speaker: Gangxiang Shen, Soochow University, Suzhou, China	16:00 - 16:30
M.03.06.4	**How "pay as you grow" OXC stacking affects the performance of wavelength-routing SDM/WDM transparent networks** Paper Oral Presenter: Thierry Zami, ASN, Les Ulis, France	16:30 - 16:45
M.03.06.5	**Impact of Optical Loopback on Backward Crosstalk and Fault Localisation in Multi-Core Fiber Submarine Systems** Paper Oral Presenter: Atsushi Nakamura, NTT Corporation, Tsukuba, Japan	16:45 - 17:00

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Monday, September 29, 2025, 15:30 - 17:00 B4 M1-4

M.03.07 - Very High Speed Coherent PON

Chair: Paola Parolari, Politecnico di Milano, Milan, Italy

M.03.07.1	**Cost-effective and Flexible Coherent Optics for Next-Generation Optical Access Networks** Invited Speaker: Junwen Zhang, Fudan University, Shanghai, China	15:30 - 16:00
M.03.07.2	**240 Gbit/s Bidirectional Coherent PON Using Uncalibrated ONU Lasers and Blind Coarse Alignment** Paper Oral Presenter: Md Mosaddek Hossain Adib, Nokia Bell Labs, Stuttgart, Germany	16:00 - 16:15
M.03.07.3	**Demonstration of Low-Complexity Triple-Rate Coherent PON Achieving up to 200 Gbit/s Symmetric Data Rates** Paper Oral Presenter: Gabriele Di Rosa, Adtran Networks SE, Planegg, Germany	16:15 - 16:30
M.03.07.4	**Single-Laser BiDi Coherent PON with Optical Injection Locking: Enabling 100G/200G Access Without High-Cost Lasers in ONU** Paper Oral Presenter: Haipeng Zhang, CableLabs, Louisville, United States	16:30 - 16:45
M.03.07.5	**Experimental Demonstrations of Polarisation-Based Sensing in Alamouti-Coded Simplified Coherent PONs** Paper Oral Presenter: Md Saifuddin Faruk, Bangor University, Bangor, United Kingdom Paper Oral Presenter: Shaohua Hu, Bangor University, Bangor, United Kingdom	16:45 - 17:00

Paper Session
SC 8: Sensing and microwave photonics
Monday, September 29, 2025, 15:30 - 17:00 B4 M5-8

M.03.08 - Fiber-Optic Sensing

Chair: Sebastian Randel, Institute of Photonics and Quantum Electronics, Karlsruhe Institute of Technology, Karlsruhe, Germany

M.03.08.1	**Field-Distributed Φ-OTDR Through Dissemination of Narrow-Linewidth Light and Optically Synchronized Proxy Sources** Paper Oral Presenter: Bernhard Schrenk, AIT Austrian Institute of Technology, Vienna, Austria	15:30 - 15:45
M.03.08.2	**Tunable Long Range OFDR Enabled by Ultrastable SiN ECTL** Paper Oral Presenter: nicolas fontaine, Nokia Bell Labs, New Providence, United States	15:45 - 16:00
M.03.08.3	**Impact of Inter-Core Crosstalk on Coherent Optical Time-Domain Reflectometry in Repeatered Multicore Fibre Systems** Paper Oral Presenter: Kosuke Komatsu, KDDI Research, Inc., Fujimino, Japan	16:00 - 16:15
M.03.08.4	**Performance Comparison of Direct and Coherent Detection in Correlation-Based Distributed Fiber-Optic Acoustic Sensing**	16:15 - 16:30

Paper Oral Presenter: Daniele Orsuti, NICT, Tokyo, Japan

M.03.08.5 **Energy-based Generative Models for Distributed Acoustic Sensing Event Classification in Telecom Networks** 16:30 - 17:00

Paper Oral Upgrade Presenter: Ming-Fang Huang, NEC Laboratories America, Inc., Princeton, United States

Paper Session
SC 9: Free-space optics and optical wireless technologies
Monday, September 29, 2025, 15:30 - 16:45 B5 M1-4

M.03.09 - Turbulence-resilient FSO Systems

Chair: Liam Barry, Dublin City University, School of Electronic Engineering, Dublin, Ireland

M.03.09.1 **High-Speed Coherent Receiver Array on Silicon Photonics for Turbulence-Resilient Communication Links** 15:30 - 15:45

Paper Oral Presenter: Fatemeh Ghaedi Vanani, University of Central Florida, Orlando, United States

M.03.09.2 **Adaptive Bidirectional Free-Space-Optical Link Resilient to Atmospheric Turbulence** 15:45 - 16:00

Paper Oral Presenter: Andres Ivan Martinez, Politecnico di Milano, Milano, Italy

M.03.09.3 **Recent Progress in Optical Groud Stations enabled by Adaptive Optics** 16:00 - 16:30

Invited Speaker: Amita Shrestha, German Aerospace Center (DLR), Institute of Communications and Navigation, Köln, Germany

M.03.09.4 **Turbulence-resilient OAM-PolSK with 21.92 dB Sensitivity Gain in FSOC Direct Detection System** 16:30 - 16:45

Paper Oral Presenter: Haoyu Zhang, Fudan University, Shanghai, China

.
Monday, September 29, 2025, 17:00 - 19:00 Plenary (Auditoria 10+11+12)

Welcome reception - Balcony 1-2

Special Events
Multiple Topics
Monday, September 29, 2025, 17:15 - 19:15 B4 M5-8

M.04.08 - European Integrated Photonics Forum (EPIF)

► **Short description:** Over the past year, Europe’s integrated photonic industry has shown clear signs of scaling up. Important developments include the move to 6-inch InP wafer manufacturing, the launch of pilot lines like PIX Europe, the emergence of new foundries, and increased production capacities in companies like X-FAB and STMicroelectronics. In this session, we explore this trend through testimonies from industrial players and an interactive panel discussion on the opportunities and obstacles of scaling integrated photonic manufacturing in Europe.

Chair: Wim Bogaerts, Ghent University - IMEC, Ghent, Belgium
Chair: Mattias Verstuyft, Ghent University - IMEC, Ghent, Belgium

Tuesday, September 30, 2025

Paper Session
SC 1: Novel fibres, fibre devices and amplifiers
Tuesday, September 30, 2025, 09:00 - 10:30 — Auditorium 10

Tu.01.01 - Multiband and SDM Amplifiers

Chair: Lutz Rapp, Adtran Networks SE, Meiningen, Germany

Tu.01.01.1	**Simplified Hybrid Core and Cladding Pumping Technique for Power-efficient Multi-core Fibre Amplifier** Paper Oral Presenter: Taiji Sakamoto, NTT Corporation, Tsukuba, Japan	09:00 - 09:15
Tu.01.01.2	**High Power E-band Bismuth-Doped Fiber Amplifier** Paper Oral Presenter: Aleksandr Donodin, Aston University, Birmingham, United Kingdom	09:15 - 09:30
Tu.01.01.3	**FIFO-less Bidirectional Core-Pumped 4-core MC-EDFA Featuring with Multicore Isolator / Pump Combiner Hybrids** Paper Oral Presenter: Hitoshi Takeshita, NEC Corporation, Kawasaki, Kanagawa, Japan	09:30 - 09:45
Tu.01.01.4	**EDFA-BDFA Cascaded S-band Amplification from 1452nm to 1526nm with Flat-Gain and Low Noise Figure by Placing 980nm Pumped EDFA First with Very High Population Inversion** Paper Oral Presenter: Youichi Akasaka, Fujitsu Network Communications, Inc., Dallas, United States	09:45 - 10:00
Tu.01.01.5	**Designing Energy-Efficient Cladding-Pumped Multi-Core Erbium-Doped Fiber Amplifiers** Invited Speaker: Haoshuo Chen, Nokia Bell Labs, Murray Hill, United States	10:00 - 10:30

Paper Session
SC 2: Discrete photonic devices and technologies
Tuesday, September 30, 2025, 09:00 - 10:00 — Auditorium 11

Tu.01.02 - Photodiodes

Chair: Dan Marom, Hebrew University of Jerusalem, Applied Physics Department (Photonic Devices Group), Jerusalem, Israel

Tu.01.02.1	**Broadband 205-GHz Vertical-Illumination Photodiode Enabled by Interference-based Absorption and Field Engineering** Paper Oral Presenter: Yuki Yamada, NTT, Kanagawa Pref., Japan	09:00 - 09:15
Tu.01.02.2	**70 GHz, 2 A/W, Waveguide-Coupled Germanium-in-Silicon Avalanche Photodiode** Paper Oral Presenter: Amir Shahin, imec, Leuven, Belgium	09:15 - 09:30
Tu.01.02.3	**150-GHz Bandwidth, -30 dB CMRR Balanced Photodetector for High-Baud Rate PSK Signal Detection** Paper Oral Presenter: Toshimasa Umezawa, National Institute of Information and Communications Technology, Tokyo, Japan	09:30 - 09:45
Tu.01.02.4	**Monolithically integrated 100 GHz Ge photodetectors with high responsivity of 0.96 A/W across C+L band**	09:45 - 10:00

Paper Oral Presenter: Shichuang Sun, Opto-Electronics Business Department, Huawei Technologies co. Ltd., Shenzhen, China
Paper Oral Presenter: Hao Zhou, Opto-Electronics Business Department, Huawei Technologies co. Ltd., Shenzhen, China

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Tuesday, September 30, 2025, 09:00 - 10:30 — Auditorium 12

Tu.01.03 - Co-packaged optics

Chair: Daniel Kuchta, NVIDIA (Principal Hardware System Architect; formerly IBM T. J. Watson Research Center; IEEE Photonics Society Fellow Evaluator), Yorktown Heights, NY, United States
Chair: Marianna Pantouvaki, Microsoft Research, Cambridge, United Kingdom

Tu.01.03.1	**An Ultra-Compact 50-Gbaud × 16-Channel CPO Transceiver employing a 1060-nm Single-Mode VCSEL array and Multicore Fibres** Paper Oral Presenter: Wataru Yoshida, Furukawa Electric Co., Ltd., Ichihara, Japan	09:00 - 09:15
Tu.01.03.2	**2.88 Terabit-per-Second 16-Channel VCSEL Array for Co-packaged Optics with Multi-core Fiber** Paper Oral Presenter: Liang Dong, Institute of Science Tokyo, Yokohama, Japan	09:15 - 09:30
Tu.01.03.3	**Co-packaged Optics Technology Evaluation for Hyperscale Data Center Fabric Switches** Paper Oral Upgrade Presenter: Siamak Amiralizadeh, Meta, Menlo Park, United States	09:30 - 10:00
Tu.01.03.4	**320 Gb/s Unamplified Transmission using 100 GHz Ge PD and TFLN MZM on a Foundry-Compatible SiPh Platform Co-Packaged with Traveling-Wave Drivers and TIAs** Paper Oral Upgrade Presenter: Jakob Declercq, imec-Ghent University, Ghent, Belgium	10:00 - 10:30

Paper Session
SC 4: Signal processing for optical communication and computing
Tuesday, September 30, 2025, 09:00 - 10:15 — Auditorium 15

Tu.01.04 - Optical and digital signal processing applications

Chair: Manabu Arikawa, NEC Corporation, Kawasaki, Japan

Tu.01.04.1	**Large-scale electrically programmable photonic tensor core for in-memory computing** Paper Oral Presenter: Yue Wu, State Key Laboratory of Photonics and Communications, Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai, China	09:00 - 09:15
Tu.01.04.2	**Filter Generator-Based Adaptive Volterra Equalizer with Ultra Low Training Overhead Field-Deployed in 4.3-km FSO Link** Paper Oral Presenter: Haoyu Zhang, Fudan University, Shanghai, China	09:15 - 09:30
Tu.01.04.3	**A Novel Decision-Aided Detection Algorithm for Performance**	09:30 - 09:45

Enhancement in Bandwidth-Limited FTN-DMB Systems

Paper Oral Presenter: Hao Deng, School of Electronic and Information Engineering, South China University of Technology, Guangzhou, Guangdong, China

Tu.01.04.4	**Nonlinear Mitigation for Coherent Optical DAC Transmitter** Paper Oral Presenter: Tong Ye, Fujitsu Research & Development Center Co. Ltd., Beijing, China	09:45 - 10:00
Tu.01.04.5	**Recurrent Optical Spectrum Slicers as multi-λ processors for WDM optical equalization of IM/DD channels** Paper Oral Presenter: Kostas Sozos, University of West Attica, Athens, Greece	10:00 - 10:15

Paper Session
SC 5: Optical transmission systems
Tuesday, September 30, 2025, 09:00 - 10:30 B3 M1-4

Tu.01.05 - Systems Modeling

Chair: René-Jean Essiambre, Nokia Bell Labs, Espoo, Finland

Tu.01.05.1	**Closed-Form EGN Models and Launch Power Optimization in Multi-band Systems** Invited Speaker: Yanchao Jiang, Politecnico di Torino, Torino, Italy	09:00 - 09:30
Tu.01.05.2	**Nonlinear Interference Investigation in Coupled-Core Multi-Core Fibers with Stimulated Raman Scattering and Mode Dispersion** Paper Oral Presenter: Chiara Lasagni, University of Parma, Parma, Italy	09:30 - 09:45
Tu.01.05.3	**A Temporal Gaussian Noise Model for Equalization-enhanced Phase Noise** Paper Oral Presenter: Benedikt Geiger, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany	09:45 - 10:00
Tu.01.05.4	**Experimental Validation of Closed-form EGN Model at Zero-dispersion Wavelength for O-band Coherent Transmission** Paper Oral Presenter: Daniel Elson, KDDI Research Inc., Fujimino, Japan	10:00 - 10:15
Tu.01.05.5	**Fast and stable method for computation of power profiles in transmission systems with high-power backward Raman pumping** Paper Oral Presenter: Hartmut Hafermann, Huawei Technologies France, Boulogne-Billancourt, France	10:15 - 10:30

Paper Session
SC 6: Architecture, modelling and performance of optical networks
Tuesday, September 30, 2025, 09:00 - 10:30 B3 M5-M8

Tu.01.06 - Network Architecture Evolution

Chair: Paolo Monti, Chalmers University of Technology – Head of Communication, Antennas and Optical Networks Unit, Gothenburg, Sweden

Tu.01.06.1	**Towards Truly Scalable Sustainable Flexible Optical Networks** Invited Speaker: Antonio Napoli, Nokia, Munich, Germany	09:00 - 09:30
Tu.01.06.2	**Capacity Scaling Limits of DCI Networks: A Comparative Study of**	09:30 - 09:45

ZR, ZR+, and High-Performance Transponders

Paper Oral Presenter: Xin Yang, Politecnico di Milano, Milan, Italy

Tu.01.06.3	**A Hybrid FXC-WXC Network Architecture with Low-Cost Pluggable Transceivers for Metro-Scale Optical Networks** Paper Oral Presenter: Shunya Shimoi, Nagoya University, Aichi, Japan	09:45 - 10:00
Tu.01.06.4	**Field Trial of Telecom-Grade Sub-50ms Protection in Wavelength Switched Optical Networks for Lossless Large Language Model Multi-datacenter Distributed Training** Paper Oral Upgrade Presenter: Yuyang Liu, China Telecom Research Institute, State Key Laboratory of Optical Fibre and Cable Manufacture Technology, Beijing, China	10:00 - 10:30

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Tuesday, September 30, 2025, 09:00 - 10:30 B4 M1-4

Tu.01.07 - Optical Access Networks

Chair: Lena Wosinska, Chalmers University of Technology, Gothenburg, Sweden

Tu.01.07.1	**Optical access networks – An operator view from Past to Future System-technologies and Applications** Invited Tutorial Speaker: DEZHI ZHANG, China Telecom Research Institute, State Key Laboratory of Optical Fiber and Cable Manufacture Technology, Beijing, China	09:00 - 10:00
Tu.01.07.2	**Demonstration of C-band, 50-Gbit/s×4λ Single-Sideband-NRZ-Signal Transmission through 40-km SMF using 25G-class APD and Simple Feed-Forward Equalizer for Direct-Detection based 50G-TWDM-PON** Paper Oral Presenter: Ryo Koma, NTT Access Network Srvice Systems Laboratories, Yokosuka, Japan	10:00 - 10:15
Tu.01.07.3	**Fiber In-Premises Solution With Low-Cost Mono-Optics Transceivers** Paper Oral Presenter: Michael Straub, Nokia, Stuttgart, Germany	10:15 - 10:30

Paper Session
SC 8: Sensing and microwave photonics
Tuesday, September 30, 2025, 09:00 - 10:30 B4 M5-8

Tu.01.08 - Advanced Fiber Sensing Methods I

Chair: Ming-Fang Huang, NEC Laboratories America, Inc., Princeton, United States

Tu.01.08.1	**Submarine Optical Fibers: A Window into Climate Change** Invited Speaker: Sonia Martin-Lopez, Universidad de Alcalá, Alcalá de Henares-Madrid, Spain	09:00 - 09:30
Tu.01.08.2	**Simulation and Experimental Studies of DWDM Nonlinear Phase/Polarization/Power Crosstalk Between DFOS and Communication Channels in 27.6-Tb/s 800ZR Metro Network** Paper Oral Presenter: Maoqi Liu, The Hong Kong Polytechnic University,	09:30 - 09:45

Hong Kong, Hong Kong

Tu.01.08.3	**4405 FBG Array Sensor Interrogation using Coherent Correlation OTDR with Hybrid Wavelength Tuning** Paper Oral Presenter: André Sandmann, Adtran Networks SE, Meiningen, Germany	09:45 - 10:00
Tu.01.08.4	**Quantum Noise Limited Temperature-Change Estimation for Φ-OTDR Employing Coherent Detection** Paper Oral Presenter: Huwei Wang, Technical University of Denmark, Kongens Lyngby, Denmark	10:00 - 10:15
Tu.01.08.5	**Integrated Waveform Design and Demonstration of Simultaneous Frequency-demodulation Distributed Fiber Optic Sensing and Ka-band Mobile Fronthaul Communication** Paper Oral Presenter: Maoqi Liu, The Hong Kong Polytechnic University, Hong Kong, Hong Kong	10:15 - 10:30

Paper Session
SC 9: Free-space optics and optical wireless technologies
Tuesday, September 30, 2025, 09:00 - 10:30 B5 M1-4

Tu.01.09 - Indoor OWC

Chair: Christina Lim, The University of Melbourne, Melbourne, Australia

Tu.01.09.1	**Demonstrating of Network Functionalities for Indoor Optical Wireless Attocell Networks: Handover and Multiplexing** Paper Oral Presenter: Takahiro Kodama, Kagawa University, Takamatsu, Japan	09:00 - 09:15
Tu.01.09.2	**Focal Plane Array using VCSELs for Beam Steering in High-Speed Indoor Optical Wireless Communication** Paper Oral Presenter: Eduardo Muller, Eindhoven University of Technology, Eindhoven, Netherlands	09:15 - 09:30
Tu.01.09.3	**11.5 Gbit/s Transmission Using a 660 mW LiFi Transmitter** Paper Oral Presenter: Malte Hinrichs, Fraunhofer HHI, Berlin, Germany	09:30 - 09:45
Tu.01.09.4	**Optical Wireless Access with Phased- / Focal-Plane Array Beamformers and Multi-Core Coupled APD Diversity Receiver** Paper Oral Presenter: Florian Honz, AIT Austrian Institute of Technology, Vienna, Austria	09:45 - 10:00
Tu.01.09.5	**10Gbps Visible Light Optical Interconnection Based on Single-pixel Si-substrate GaN DBR-LED with 3D PN-junction** Paper Oral Presenter: Zengyi Xu, Fudan University, Shanghai, China	10:00 - 10:15
Tu.01.09.6	**Interference-Resilient Optical Wireless Positioning via Machine Learning-Enhanced Subset Filtering** Paper Oral Presenter: Yi Liu, University of Cambridge, Cambridge, United Kingdom Paper Oral Presenter: Yifan Huang, University of Cambridge, Cambridge, United Kingdom	10:15 - 10:30

.
Tuesday, September 30, 2025, 10:30 - 11:00
Coffee break

Paper Session
Exhibition
Tuesday, September 30, 2025, 11:00 - 12:30 Plenary (Auditoria 10+11+12)
Exhibition Break – All Rooms **Exhibition Break – All Rooms**

Demo Session
Multiple Topics
Tuesday, September 30, 2025, 11:00 - 12:30
Tu.02.12 - Demo Submissions

Tu.02.12.1 **First Demonstration of Optical Auto-Negotiation for Fronthaul**
Demo Speaker: Hui Feng, Ericsson AB, Stockholm, Sweden
Demo Speaker: Ulf Parkholm, Ericsson AB, Stockholm, Sweden

Tu.02.12.2 **LLM-Powered Desktop AI-Assistant for Network Operations Employing Multi-Agent System with Vision-Language Integration**
Demo Speaker: Xiaonan Xu, Nokia Bell Labs, Murray Hill, United States

Tu.02.12.3 **SQRS: Smart Quantum-key Relay System for Reliable and Efficient Quantum Key Distribution Network Service Provision**
Demo Speaker: Chankyun Lee, Korea Institute of Science and Technology Information, Daejeon, Korea, Republic of
Demo Speaker: Kyu-Seok Shim, Korea Institute of Science and Technology Information, Daejeon, Korea, Republic of

Tu.02.12.4 **Management of Point-to-Multipoint Coherent Pluggable Transceivers to Provision IP Virtual Network Slice over DWDM Networks using ETSI TeraFlowSDN Multi-layer SDN Controller**
Demo Speaker: Waleed Akbar, Centre Tecnològic de Telecomunicacions de Catalunya, Barcelona, Spain

Tu.02.12.5 **Novel Telemetry Data Collection and Closed-Loop Operations for End-to-End Optical Access and Transport Networks with Guaranteed-Quality Connectivity Service Assurance**
Demo Speaker: Hesam Rahimi, Huawei Technologies, Ottawa, Canada

Tu.02.12.6 **Enabling 3GPP-Driven Services Over Optical Transport Network**
Demo Speaker: Renato Ambrosone, Politecnico di Torino, Torino, Italy

Tu.02.12.7 **First Demonstration of IEEE-802.1CB based deterministic networking over PON for reliability in Industrial TSN networks**
Demo Speaker: Sandip Das, Nokia Bell Labs, Stuttgart, Germany

Special Events
Multiple Topics
Tuesday, September 30, 2025, 12:00 - 13:30 Auditorium 15

Tu.02.04 - Josep Prat Memorial Session

► **Short description:** This session is dedicated to the memory of Professor Josep Prat, who passed away in June. Josep was a kind and noble man, an exceptional academic researcher and educator, and one of the leading figures in optical access networks. The session will highlight some of his most important contributions to the optical communications community and his major achievements. Invited speakers who knew him well will reflect on his legacy and on the impact that his vision had on fiber-to-the-home (FTTH) and beyond.

Chair: Antonio Napoli, Nokia, Munich, Germany
Chair: Ioannis Tomkos, University of Patras, Patras, Greece

Tu.02.04.1	**The Person, the Mentor, the Scientist, and the Leader** Invited Speaker: Polina Bayvel, University College London (UCL), London, United Kingdom Invited Speaker: Ioannis Tomkos, University of Patras, Patras, Greece Invited Speaker: Antonio Napoli, Nokia, Munich, Germany	12:00 - 12:10
Tu.02.04.2	**Innovative Ideas Created by Josep** Invited Speaker: Rene Bonk, Nokia Bell-Labs, Stuttgart, Germany	12:10 - 12:20
Tu.02.04.3	**Remembering an Optical Access Technology Pioneer** Invited Speaker: Derek Nesset, Huawei UK, Ipswich, United Kingdom	12:20 - 12:30
Tu.02.04.4	**The Work in the EU Project BONE** Invited Speaker: Roberto Gaudino, Politecnico di Torino, Torino, Italy	12:30 - 12:40
Tu.02.04.5	**The Ideas in the EU Project ACCORDANCE** Invited Speaker: Ivan Cano, Huawei Technologies Düsseldorf GmbH, Munich, Germany	12:40 - 12:50
Tu.02.04.6	**Josep as an Inspired and Innovative Mentor and Professor** Invited Speaker: Salvatore Spadaro, Universitat Politècnica de Catalunya – Department of Signal Theory and Communications, Optical Communications Group, Barcelona, Spain	12:50 - 13:00
Tu.02.04.7	**Different Aspects of Josep as a Scientist and Mentor** Invited Speaker: Robert Killey, University College London (UCL), London, United Kingdom	13:00 - 13:10
Tu.02.04.8	**The Leadership in the EU Project SARDANA** Invited Speaker: Antonio Teixeira, PICadvanced, S.A, Aveiro, Portugal	13:10 - 13:20

.
Tuesday, September 30, 2025, 12:30 - 13:30

Lunch

Paper Session
SC 10: Control and management of optical networks
Tuesday, September 30, 2025, 13:30 - 14:45 Auditorium 10

Tu.03.01 - New network architectures

Chair: Marco Ruffini, Trinity College Dublin – Associate Professor and Fellow; Principal Investigator, CONNECT Telecommunications and IPIC Photonics Integration Centres, Dublin, Ireland

Tu.03.01.1	**One-hop all-optical DC-oriented networks for 2030** Invited Speaker: liang zhang, huawei, paris, France	13:30 - 14:00
Tu.03.01.2	**Re-grouping Flexibility for Fault Recovery and Traffic Adaptation in Digital Subcarrier Multiplexing Point-to-multipoint Metro-access Integration Network** Paper Oral Presenter: Chenxiao Zhang, KDDI Research, Inc., Fujimino-shi, Saitama, Japan	14:00 - 14:15
Tu.03.01.3	**Evolution of Optical Networking in support of 6G** Invited Speaker: Ioannis Tomkos, University of Patras, Patras, Greece Invited Speaker: Christos Christofidis, University of Patras, Patras, Greece	14:15 - 14:45

Paper Session
SC 2: Discrete photonic devices and technologies
Tuesday, September 30, 2025, 13:30 - 15:00 Auditorium 11

Tu.03.02 - Passive Components 1

Chair: Antonio Fincato, STMicroelectronics, Cornaredo, Italy

Tu.03.02.1	**Structured Light in Metamaterials and Photonic Applications** Invited Tutorial Speaker: Natalia Litchinitser, Duke University, Durham, North Carolina, United States	13:30 - 14:30
Tu.03.02.2	**High-Speed Free-Space Electro-Optic Modulator using Double-Layered Dimerized Nanometallic Grating** Paper Oral Presenter: Koto Ariu, The University of Tokyo, Hongo, Bunkyo-ku, Tokyo, Japan	14:30 - 14:45
Tu.03.02.3	**Integrated Eight-Channel WDM Receiver utilizing Plasmonic Graphene Photodetectors enabling Line Rates >800 Gbit/s** Paper Oral Presenter: Dominik Bisang, ETH Zurich, 8092 Zurich, Switzerland	14:45 - 15:00

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Tuesday, September 30, 2025, 13:30 - 14:45 Auditorium 12

Tu.03.03 - PIC for free-space communication and sensing

Chair: Francesco Da Ros, Technical University of Denmark (DTU), Kongens Lyngby, Denmark

Tu.03.03.1	**InP Temperature Sensor with Si-CMOS Interface for Photonic Integrated Circuits** Paper Oral Presenter: Thomas Bart Nicolaas Booij, Eindhoven University of Technology, Eindhoven, Netherlands	13:30 - 13:45
Tu.03.03.2	**Low-Noise, Frequency-Agile Photonic Integrated Blue Laser for**	13:45 - 14:00

LiDAR and Underwater Communication

Paper Oral Presenter: Asger Gardner, Aarhus University, Aarhus, Denmark

Tu.03.03.3 **Photonic-Crystal Surface-Emitting Lasers for High-Power Free-Space Optical Communications** 14:00 - 14:30

Invited Speaker: Takuya Inoue, Kyoto University, Kyoto, Japan

Tu.03.03.4 **Ultrahigh-Resolution and Broad-Bandwidth Single-Shot On-Chip Spectrometer** 14:30 - 14:45

Paper Oral Presenter: gaopeng wang, State Key Laboratory for Extreme Photonics and Instrumentation, College of Optical Science and Engineering, International Research Center for Advanced Photonics, Zhejiang University, Zijingang Campus, Hangzhou 310058, China, hangzhou, China

Symposia
Multiple Topics
Tuesday, September 30, 2025, 13:30 - 15:00 Auditorium 15

Tu.03.04 - 100 Years of Bell Labs I

Join us for an exclusive, in-depth workshop to celebrate a century of world-changing innovations sparked by Bell Labs. This special three-hour event, split into two engaging sessions, will take you on a journey through the history and future of optical communications.

① The Origin of a Game-Changing Technology (60 minutes)
Hear from Sir David Payne from University of Southampton, Emmanuel Desurvire and R. Giles of Bell Labs— as they recount the thrilling origins of the Erbium-Doped Fiber Amplifier (EDFA).
② Bell Labs Alumni: Reflections on the ingredients of breakthrough innovations (90 minutes)
The second segment gathers ten distinguished Bell Labs alumni to share personal reflections on influential scientific papers they authored or co-authored.
③ Student Pitch Competition: The Bell Labs Centennial Prize (30 minutes)
In the concluding half-hour, future innovators take center stage in a fast-paced, three-minute pitch competition aimed at redefining what's possible in optical communications.

Symposium Organiser: Sébastien Bigo, Nokia Bell Labs, Nozay, France
Symposium Organiser: René-Jean Essiambre, Nokia Bell Labs, Espoo, Finland
Symposium Organiser: Jean-Pierre Hamaide, Nokia Bell Labs, Paris, France
Symposium Organiser: Jelena Pesic, Nokia Bell Labs, Paris, France

Paper Session
SC 5: Optical transmission systems
Tuesday, September 30, 2025, 13:30 - 15:00 B3 M1-4

Tu.03.05 - Submarine and long haul

Chair: David S. Millar, Infinera Corporation (now part of Nokia), San Jose, CA, United States

Tu.03.05.1 **Real Time C-band Unrepeatered Transmission of 36.4 Tb/s in PCS-64QAM and 32 Tb/s in PCS-16QAM over 368 km and 407 km Respectively** 13:30 - 13:45

Paper Oral Presenter: Alexis Busson, Alcatel Submarine Networks, Les Ulis, France

Tu.03.05.2 **Long-Haul 2000-km Single-Mode Fibre Transmission with Net Bitrate of 105.6 Tb/s in S+C+L Band Using Low-Noise Forward-Pumped Distributed Raman Amplification** 13:45 - 14:00

	Paper Oral Presenter: Fukutaro Hamaoka, NTT Corporation, Yokosuka, Japan	
Tu.03.05.3	**Single-Channel DBP Assisted by Decision-Feedback Digital Forward Propagation to Mitigate Waveform Distortion by XPM** Paper Oral Presenter: Takashi Inoue, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan	14:00 - 14:15
Tu.03.05.4	**2000 km Coherent U-band Transmission using Recirculating loop with Distributed Raman Amplification** Paper Oral Presenter: Kyle R.H. Bottrill, University of Southampton, Southampton, United Kingdom Paper Oral Presenter: Nura Adamu, University of Southampton, Southampton, United Kingdom	14:15 - 14:30
Tu.03.05.5	**Design of submarine systems with a large number of optical paths** Invited Speaker: Jean-Christophe Antona, Alcatel Submarine Networks – Line Modeling and Advanced Studies, Nozay (Paris–Saclay), France	14:30 - 15:00

Paper Session
SC 4: Signal processing for optical communication and computing
Tuesday, September 30, 2025, 13:30 - 15:00 B3 M5-M8

Tu.03.06 - Intensity-Modulation Direct-Detection (IMDD) systems

Chair: Gertjan Coudyzer, Ghent University (UGent), Department of Information Technology, Faculty of Engineering and Architecture; affiliated with imec/IDLab, Ghent, Belgium

Tu.03.06.1	**651-Gb/s Net Bitrate IMDD Transmission Using Electrical Bandwidth Multiplexing and Demultiplexing Techniques Based on Ultra-broadband InP-DHBT Mixers** Paper Oral Presenter: Masanori Nakamura, NTT Corporation, Yokosuka, Japan	13:30 - 13:45
Tu.03.06.2	**Viterbi-Free Digital Resolution Enhancer for Data Centres IM/DD Interconnection with Low-Resolution DAC** Paper Oral Presenter: Yibin Li, The Hong Kong Polytechnic University, Hong Kong, China	13:45 - 14:00
Tu.03.06.3	**Chromatic Dispersion-Tolerant Digital Clock Recovery for Intensity Modulation and Direct Detection Systems** Paper Oral Presenter: Sebastian Randel, Institute of Photonics and Quantum Electronics, Karlsruhe Institute of Technology, Karlsruhe, Germany	14:00 - 14:15
Tu.03.06.4	**Single Photodiode Detection of 661-Gb/s Signal via Optical Band Multiplexing for High-Speed Optical Interconnects** Paper Oral Presenter: Yixiao Zhu, State Key Laboratory of Photonics and Communications, Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai, China	14:15 - 14:30
Tu.03.06.5	**Real-time Demonstration of FPGA-based Advanced Equalizer with ZF-NL-RSSE for Data Center Interconnects** Paper Oral Presenter: Zhouhao Yang, National University of Defense Technology, Changsha, China	14:30 - 14:45
Tu.03.06.6	**400 Gbps Net Bitrate Optical-Amplification-Free TFLN-based PAM4 Link Enabled by BU-LSTM Equalization**	14:45 - 15:00

Paper Oral Presenter: Dan Li, KTH Royal Institute of Technology, 10691 Stockholm, Sweden

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Tuesday, September 30, 2025, 13:30 - 15:00 B4 M1-4

Tu.03.07 - Photonic switching and short-reach interconnects

Chair: Salvatore Spadaro, Universitat Politècnica de Catalunya – Department of Signal Theory and Communications, Optical Communications Group, Barcelona, Spain

Tu.03.07.1 **The Role of Statistical Fiber Dispersion in Future Intra-Data-Center and Optical Access Networks** 13:30 - 14:00
Invited Speaker: Qirui Fan, Huawei Hong Kong Research Center, Hong Kong, China
Invited Speaker: Xiang Liu, Huawei Hong Kong Research Center, Hong Kong, China

Tu.03.07.2 **448 Gbps optical-amplification-free PAM6/8 transmission using TFLN transmitter and SNR enhancement approach** 14:00 - 14:15
Paper Oral Presenter: Armands Ostrovskis, Riga Technical University, Riga, Latvia

Tu.03.07.3 **Photonic Switching for Dynamic Bandwidth Sharing in Optically Networked Heterogeneous Computing Systems** 14:15 - 14:30
Paper Oral Presenter: Dae-Ub Kim, ETRI, Deajeon, Korea, Republic of

Tu.03.07.4 **Wavefront-Shaping Enabled Scalable Optical Circuit Switch** 14:30 - 14:45
Paper Oral Presenter: Niyazi Ulas Dinc, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

Tu.03.07.5 **Demonstration of Nanoseconds Reconfigurable All-optical Switching Network for Distributed Deep Learning** 14:45 - 15:00
Paper Oral Presenter: Xianchen Wu, State Key Laboratory of Information Photonics and Optical Communications, Beijing University of Posts and Telecommunications, Beijing, China

Paper Session
SC 8: Sensing and microwave photonics
Tuesday, September 30, 2025, 13:30 - 15:00 B4 M5-8

Tu.03.08 - Photonic Radars and LIDARs

Chair: Guy Torfs, Ghent University, Ghent, Belgium

Tu.03.08.1 **Distributed Coherent Radar System Fully Implemented as Heterogeneous SOI-InP Photonic Integrated Circuits** 13:30 - 13:45
Paper Oral Presenter: Filippo Scotti, CNIT, Pisa, Italy
Paper Oral Presenter: Valentina Gemmato, Scuola Superiore Sant'Anna, Pisa, Italy

Tu.03.08.2 **A Long-Range LiDAR System Resilient to Sunlight Interference Using Low-Noise InGaAs-APD** 13:45 - 14:00
Paper Oral Presenter: Munetaka Kurokawa, Transmission Devices Laboratory, Yokohama, Japan

Tu.03.08.3	**Silicon Photonic FMCW LiDAR with Integrated High-Speed Line-Scan Illumination and 2D Coherent Receivers** Paper Oral Upgrade Presenter: Mathias Prost, IMEC, Leuven, Belgium	14:00 - 14:30
Tu.03.08.4	**Integrated silicon photonic phased arrays for joint optical wireless communications and LiDAR sensing applications** Invited Speaker: Ruud Oldenbeuving, imec, Eindhoven, Netherlands	14:30 - 15:00

Paper Session
SC 9: Free-space optics and optical wireless technologies
Tuesday, September 30, 2025, 13:30 - 15:00 B5 M1-4

Tu.03.09 - Hybrid RF/FSO Systems

Chair: Antonio D'Errico, Ericsson Research (Photonics/Optical Networks), Kista (Stockholm), Sweden

Tu.03.09.1	**Field Trial of a Record-High Data Rate SDN-Controlled FiWi FSO/mmWave X-haul with Zero-Touch Handover for 6G** Paper Oral Presenter: Chris Vagionas, Aristotle University of Thessaloniki, Thessaloniki, Greece Paper Oral Presenter: Maria Vargemidou, Aristotle University of Thessaloniki, Thessaloniki, Greece	13:30 - 13:45
Tu.03.09.2	**Demonstration of 2×4 MIMO Hybrid RF-FSO Transmission System Based on Photonics-Aided and Shared Transmitter** Paper Oral Presenter: Qinyi Zhang, Fudan University, Shanghai, China	13:45 - 14:00
Tu.03.09.3	**Reliable Communication using THz/FSO Networks** Invited Speaker: Mohamed-Slim Alouini, King Abdullah University of Science and Technology (KAUST), Computer, Electrical and Mathematical Science and Engineering Division, Thuwal (Makkah Province), Saudi Arabia	14:00 - 14:30
Tu.03.09.4	**An Adaptive and Reconfigurable Hybrid Free-Space Optical and Millimeter-Wave Wireless Communication System** Invited Speaker: QI YANG, School of Optical and Electronic Information, Huazhong University of Science and Technology, WUHAN, China Invited Speaker: YIZHOU WANG, School of Optical and Electronic Information, Huazhong University of Science and Technology, WUHAN, China	14:30 - 15:00

.
Tuesday, September 30, 2025, 15:00 - 15:30

Coffee break

Paper Session
SC 1: Novel fibres, fibre devices and amplifiers
Tuesday, September 30, 2025, 15:30 - 17:00 Auditorium 10

Tu.04.01 - Hollow Core Fibers

Chair: Leslie Rusch, COPL, Université Laval, Québec, Canada

Tu.04.01.1	**Field-deployed anti-resonant hollow-core fibre cable** Invited Speaker: Shoufei Gao, Jinan University, Guangzhou, China	15:30 - 16:00

Tu.04.01.2	**Support Tube Hollow-Core Fiber with 0.05 dB/km Attenuation** Paper Oral Upgrade Presenter: Peng Li, Yangtze Optical Fibre and Cable Joint Stock Limited Company (YOFC), wuhan, China	16:00 - 16:30
Tu.04.01.3	**Anti-Reflection Coated SSMF to Hollow-Core Fiber Splicing with Low-Loss and Low Back-Reflection** Paper Oral Presenter: Cong Zhang, Institute of Advanced Photonics Technology, School of Information Engineering, Guangdong University of Technology, Guangzhou, China	16:30 - 16:45
Tu.04.01.4	**Polarization-multiplexed Optoacoustic Information Storage in Chiral Photonic Crystal Fiber** Paper Oral Presenter: Linqiao Gan, Max Planck Institute for the Science of Light, Erlangen, Germany	16:45 - 17:00

Paper Session
SC 2: Discrete photonic devices and technologies
Tuesday, September 30, 2025, 15:30 - 17:00 Auditorium 11

Tu.04.02 - Passive Components 2

Chair: Yuriko Maegami, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

Tu.04.02.1	**Photonic Integrated Circuits using Perovskites** Invited Speaker: Anna Lena Schall-Giesecke, Fraunhofer IMS, Duisburg, Germany	15:30 - 16:00
Tu.04.02.2	**An Ultracompact Low-loss Multilevel Nonvolatile Phase Shifter with Rhomboidal Segments of Embedded Sb_2Se_3** Paper Oral Presenter: Yujun Liu, State Key Laboratory of Extreme Photonics and Instrumentation, College of Optical Science and Engineering, Zhejiang University, Hangzhou, China	16:00 - 16:15
Tu.04.02.3	**Fabrication-tolerant Silicon Four-mode (De)Multiplexer With Mode evolution based Devices at 2.1 µm Wavelength** Paper Oral Presenter: Taichi Muratsubaki, Hokkaido University, Sapporo, Japan	16:15 - 16:30
Tu.04.02.4	**Silicon Nitride TE-pass Polarizer for *E*+*S*+*C*+*L* Bands** Paper Oral Presenter: Abdulaziz E. Elfiqi, KDDI Research Inc., 2-1-15 Ohara, Fujimino-shi, Saitama, Japan	16:30 - 16:45
Tu.04.02.5	**Phase-Error-Correctable 4×4 Programmable Photonic Integrated Circuit Enabled by Dual-Functional Si PIN Waveguides as Phase Shifter and Transparent Power Monitor** Paper Oral Presenter: Tomohiro Akazawa, The University of Tokyo, Bunkyo, Japan	16:45 - 17:00

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Tuesday, September 30, 2025, 15:30 - 16:45 Auditorium 12

Tu.04.03 - Integrated transceivers

Chair: Marianna Pantouvaki, Microsoft Research, Cambridge, United Kingdom
Chair: Daniel Kuchta, NVIDIA (Principal Hardware System Architect; formerly IBM T. J. Watson Research Center; IEEE Photonics Society Fellow Evaluator), Yorktown Heights, NY, United States

Tu.04.03.1	**DWDM Link with Fully Integrated Silicon Photonic Transmitter and Passive Polarization Diversity Receiver** Paper Oral Presenter: Duanni Huang, Intel Corporation, California, Santa Clara, United States	15:30 - 15:45
Tu.04.03.2	**8-Channel Monolithic InP Transmitter PIC Integrating DFB and MZM Arrays, Capable of Operating 106 GBd PAM4 at 85 °C** Paper Oral Presenter: Armand Rundquist, Nokia, Sunnyvale, United States	15:45 - 16:00
Tu.04.03.3	**Silicon transceivers on BiCMOS technology** Invited Speaker: Lars Zimmermann, IHP GmbH – Leibniz Institute for High Performance Microelectronics and TU Berlin (Joint Lab Silicon Photonics), Frankfurt, Germany	16:00 - 16:30
Tu.04.03.4	**High Output Power, 128 GBaud Monolithic InP Integrated Transmitter Fabricated in an Open Access Foundry** Paper Oral Presenter: Alireza Shamsafar, SMART Photonics B.V., Eindhoven, Netherlands	16:30 - 16:45

Symposia
Multiple Topics
Tuesday, September 30, 2025, 15:30 - 17:00 Auditorium 15

Tu.04.04 - 100 Years of Bell Labs II

Join us for an exclusive, in-depth workshop to celebrate a century of world-changing innovations sparked by Bell Labs. This special three-hour event, split into two engaging sessions, will take you on a journey through the history and future of optical communications.

① The Origin of a Game-Changing Technology (60 minutes)
Hear from Sir David Payne from University of Southampton, Emmanuel Desurvire and R. Giles of Bell Labs— as they recount the thrilling origins of the Erbium-Doped Fiber Amplifier (EDFA).
② Bell Labs Alumni: Reflections on the ingredients of breakthrough innovations (90 minutes)
The second segment gathers ten distinguished Bell Labs alumni to share personal reflections on influential scientific papers they authored or co-authored.
③ Student Pitch Competition: The Bell Labs Centennial Prize (30 minutes)
In the concluding half-hour, future innovators take center stage in a fast-paced, three-minute pitch competition aimed at redefining what’s possible in optical communications.

Symposium Organiser: Sébastien Bigo, Nokia Bell Labs, Nozay, France
Symposium Organiser: René-Jean Essiambre, Nokia Bell Labs, Espoo, Finland
Symposium Organiser: Jean-Pierre Hamaide, Nokia Bell Labs, Paris, France
Symposium Organiser: Jelena Pesic, Nokia Bell Labs, Paris, France

Paper Session
SC 5: Optical transmission systems
Tuesday, September 30, 2025, 15:30 - 17:00 B3 M1-4

Tu.04.05 - Multi-band systems

Chair: Chiara Lasagni, University of Parma, Parma, Italy

Tu.04.05.1	**Reaching highest data rates in SMF by multi-band transmission** Invited Tutorial Speaker: Benjamin J. Puttnam, Microsoft – Azure Fiber, Romsey, United Kingdom	15:30 - 16:30
Tu.04.05.2	**Experimental Evaluation of Throughput Gains from Distributed Raman Amplification in Ultra-Wideband ESCL Transmission** Paper Oral Presenter: Divya Ann Shaji, National Institute of Information and Communications Technology, Tokyo, Japan	16:30 - 16:45
Tu.04.05.3	**Transfer-Learning-Driven Neural Network Equalization for Ultra-High-Capacity 254.7-Tb/s over 200-km SSMF** Paper Oral Presenter: Qingyu He, China Information Communication Technologies Group Corporation, Wuhan, China	16:45 - 17:00

Paper Session
SC 6: Architecture, modelling and performance of optical networks
Tuesday, September 30, 2025, 15:30 - 17:00 B3 M5-M8

Tu.04.06 - Multiband Networks and Digital Twins

Chair: Takehiro Tsuritani, KDDI Research Inc, Fujimino, Saitama, Japan

Tu.04.06.1	**Layered Multiband Network Architecture with Spatially Parallel Bypass for Selective and Cost-Efficient SDM Deployment** Paper Oral Presenter: Hayato Yuasa, Nagoya University, Aichi, Japan	15:30 - 15:45
Tu.04.06.2	**Training Time, Economics, and Energy for Distributed AI Training in the GenAI Era** Paper Oral Presenter: Venkata Virajit GARBHAPU, Optical Communication Technology Lab, Huawei France, Paris, France	15:45 - 16:00
Tu.04.06.3	**Expertise-Guided LLM Agent Realizing Autonomous Optical Power Optimization in Field-deployed Networks** Paper Oral Presenter: Qizhi Qiu, Shanghai Jiao Tong University, Shanghai, China	16:00 - 16:15
Tu.04.06.4	**Adjustable Robust Optimization Technique for P2MP Filterless Optical Networks under Parameter Uncertainty** Paper Oral Presenter: Mohammad M. Hosseini, Nokia, Munich, Germany	16:15 - 16:30
Tu.04.06.5	**Digital Twins Beyond C-band Using GNPy** Invited Speaker: Andrea D'Amico, NEC Laboratories America Inc., Princeton, United States	16:30 - 17:00

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Tuesday, September 30, 2025, 15:30 - 17:00 B4 M1-4

Tu.04.07 - Metro-access and DCI networks

Chair: Michela Svaluto Moreolo, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC/CERCA), Castelldefels, Spain

Tu.04.07.1	**8×225 Gbit/s PAM-8 Transmission Employing DFB Laser Array Source and Quantum-Dot SOA-PIN for Intra DCIs** Paper Oral Presenter: Ahmed Galib Reza, Dublin City University, Dublin, Ireland	15:30 - 15:45
Tu.04.07.2	**Net 282 Gb/s IM/DD Transmission in C-band over 3.1 km long NANF using Silicon Photonics TW-MZM** Paper Oral Presenter: Darja Cirjulina, Institute of Photonics, Electronics and Telecommunications, Riga Technical University, Riga, Latvia	15:45 - 16:00
Tu.04.07.3	**Extended Photonic Gateway Architecture for Port-Agnostic Accomodation of Dual-Fiber and Single-Fiber User Terminals in Metro/Access Converged All-Photonics Network** Paper Oral Presenter: Ritsuki Hamagami, NTT Access Network Service Systems Laboratories, NTT Corporation, Yokosuka, Kanagawa, Japan	16:00 - 16:15
Tu.04.07.4	**Adaptive Digital Compensation of Cascaded SOA Nonlinearities in Metro-Access Networks without Prior Parameter Knowledge** Paper Oral Presenter: Ryosuke Matsumoto, Eindhoven University of Technology (TU/e), Eindhoven, Netherlands	16:15 - 16:30
Tu.04.07.5	**Pairwise SDM transmission resolving fiber dispersion in up-to-200Gbps/lane multicore fiber IM-DD systems for edge and inter-datacenter networks** Paper Oral Upgrade Presenter: Paikun Zhu, National Institute of Information and Communications Technology, Koganei, Japan	16:30 - 17:00

Paper Session
SC 8: Sensing and microwave photonics
Tuesday, September 30, 2025, 15:30 - 17:00 B4 M5-8

Tu.04.08 - Advanced Fiber Sensing Methods II

Chair: Patryk Urban, West Pomeranian University of Technology in Szczecin (ZUT), Szczecin, Poland

Tu.04.08.1	**200km-Sensing-Range Distributed Acoustic Sensor Link using Enhanced Scattering Fibers** Paper Oral Presenter: Benyuan Zhu, Lightera Labs, Somerset, United States	15:30 - 15:45
Tu.04.08.2	**Covert Speech Detection via Polarization Dynamics in 10 Gbps IMDD Optical Fiber Links** Paper Oral Presenter: Hamze Ghorbani Koujani, Politecnico di Torino, Torino, Italy	15:45 - 16:00
Tu.04.08.3	**Mid-Span Optically Powered Remote Sensor Module Using Residual Raman Pump Light** Paper Oral Presenter: Patrick Iannone, Nokia Bell Labs, Murray Hill, NJ, United States	16:00 - 16:15

Tu.04.08.4	**End-to-End AI for Distributed Fiber Optics Sensing: Eliminating Intermediate Processing via Raw Data Learning** Paper Oral Presenter: Yue Tian, NEC Laboratories America, Inc., Princeton, United States	16:15 - 16:30
Tu.04.08.5	**Utilizing Distributed Acoustic Sensing with Telecom Fibers for Entomological Observations** Invited Speaker: Sarper Ozharar, NEC Laboratories America, Princeton, United States	16:30 - 17:00

Paper Session
SC 11: Quantum communications and quantum computing
Tuesday, September 30, 2025, 15:30 - 16:45 B5 M1-4

Tu.04.09 - Quantum Communications: Routing, Co-existence and Field Trials

Chair: Wenjia Zhang, Shanghai Jiao Tong University, Department of Electronic Engineering, Suzhou (Minhang District, Shanghai), China

Tu.04.09.1	**Experimental Demonstration of 47×800 Gbps Classical Communication and QKD Coexistence over 101.6 km HCF** Paper Oral Presenter: weiwen kong, China Telecom Research Institute, beijing, China Paper Oral Presenter: tianqi dou, China Telecom Research Institute, beijing, China	15:30 - 15:45
Tu.04.09.2	**Impact of Spontaneous Raman Scattering on SKR in Coexistence Transmission of C-band DV-QKD and O-band Coherent Classical Channels** Paper Oral Presenter: Shohei Beppu, KDDI Research, Inc., Fujimino, Japan	15:45 - 16:00
Tu.04.09.3	**Highly Resilient Heterogeneous QKD Systems Integrated into Live Carrier-grade C+L-band ROADM-based Links** Paper Oral Presenter: Hiroki Kawahara, NEC Corporation, Kawasaki, Japan	16:00 - 16:15
Tu.04.09.4	**Distributing, Routing and Multiplexing O-Band Polarization-Entangled Photons with C-Band Classical Light over an Operator's Metropolitan Fiber Network** Paper Oral Presenter: Thomas Rieser, Deutsche Telekom AG, Berlin, Germany	16:15 - 16:30
Tu.04.09.5	**Dynamic Rerouting of Quantum Key Distribution Links During Live Operation for Software-Defined Networks** Paper Oral Presenter: Jan Krause, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut, HHI, 10587 Berlin, Germany, Berlin, Germany	16:30 - 16:45

Special Events
Multiple Topics
Tuesday, September 30, 2025, 17:30 - 19:30 B5 M1-4

Tu.05.09 - Hack Your Research! Tools and Tricks for Today's Telecommunications Techies

► **Short description:** Join us at Hack Your Research for an exciting event featuring interactive demos of the most powerful tools and techniques used by expert researchers and professionals to simplify all aspects of optical communication research. Whether you are a student or a highly experienced researcher, everyone is welcome! Come and learn from the trial-and-error experiences of others, connect with peers and experts and engage in stimulating discussions, all while enjoying light food and drinks in a relaxed and fun environment.

Wednesday, October 1, 2025

Paper Session
SC 1: Novel fibres, fibre devices and amplifiers
Wednesday, October 1, 2025, 09:00 - 10:30 — Auditorium 10

W.01.01 - Effect of Coupling in SDM Fibers

Chair: Ivana Gasulla Mestre, iTEAM Research Institute, Universitat Politècnica de València (UPV), Valencia, Spain

W.01.01.1	**Coupling in Optical Fibers: A Review** Invited Tutorial Speaker: Luca Palmieri, University of Padova, Padova, Italy	09:00 - 10:00
W.01.01.2	**Experimental Characterization of Mode-Dependent Stimulated Raman Scattering in a 15-Mode Fiber** Paper Oral Presenter: Julian Schneck, University of Stuttgart, Stuttgart, Germany	10:00 - 10:15
W.01.01.3	**Investigation of Nonlinear Coupling and Parametric Interactions in Coupled Multi-Core Fibers** Paper Oral Presenter: Manish Raj, Photonics Lab, Chalmers University of Technology, Göteborg, Sweden	10:15 - 10:30

Paper Session
SC 2: Discrete photonic devices and technologies
Wednesday, October 1, 2025, 09:00 - 10:30 — Auditorium 11

W.01.02 - PCSELs, VCSELs and EML

Chair: Selina Farwell, Lumentum, Caswell, United Kingdom

W.01.02.1	**High-speed 200 Gbps 1060 nm Single-Mode Coupled-Cavity VCSEL Enabling 30 m OM4 Multimode Fiber Links** Paper Oral Presenter: Fumio Koyama, Institute of Science Tokyo, YOKOHAMA, Japan	09:00 - 09:15
W.01.02.2	**Optimization of an EML-SOA Structure for the Next-Generation PON 50G-PON** Paper Oral Presenter: Xing Dai, Almae Technologies, Marcoussis, France Paper Oral Presenter: Ngoc-Linh Tran, Almae Technologies, Marcoussis, France	09:15 - 09:30
W.01.02.3	**110 GHz Bandwidth Flip-Chip Bonded EML for High-Speed IM-DD Applications** Paper Oral Presenter: Mizuki Shirao, Mitsubishi Electric Corporation, Kamakura, Japan Paper Oral Presenter: Kei Masuyama, Mitsubishi Electric Corporation, Kamakura, Japan	09:30 - 09:45
W.01.02.4	**500-Meter Multimode Fiber Transmission with 106Gb/s 850nm Single-Mode VCSELs** Paper Oral Presenter: Qin Chen, Alibaba Cloud, Hangzhou, China	09:45 - 10:00
W.01.02.5	**Directly Modulated 1.55-µm-Wavelength Photonic-Crystal Surface-Emitting Lasers for Free-Space Optical Communications**	10:00 - 10:30

Paper Oral Upgrade Presenter: Takeshi Aoki, Sumitomo Electric Industries, Ltd., Yokohama, Japan

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Wednesday, October 1, 2025, 09:00 - 10:30 — Auditorium 12

W.01.03 - Low-power optical transmitters and receivers

Chair: Chin-Hui Chen, NVIDIA – Silicon Photonics / Optical Connectivity, Santa Clara, CA, United States
Chair: Niels Quack, University of Sydney – School of Aerospace, Mechanical and Mechatronic Engineering, Sydney, Australia

W.01.03.1 — **An All-Silicon 4x56 Gbit/s NRZ, 1pJ/bit Optical Receiver with Ge-on-Si PDs and 28nm CMOS TIA Array** — 09:00 - 09:15
Paper Oral Presenter: Cedric Bruynsteen, imec-Ghent University, Ghent, Belgium
Paper Oral Presenter: Bruno Govaerts, imec-Ghent University, Ghent, Belgium

W.01.03.2 — **Optical Chiplet with 0.75-pJ/bit Transmitter Using Membrane III-V Electro-absorption Modulators on Si and Differential CMOS Driver** — 09:15 - 09:30
Paper Oral Presenter: Tatsurou Hiraki, NTT Device Innovation Center, NTT Corporation, Kanagawa, Japan

W.01.03.3 — **60 Gbaud NRZ Transmission with 0.94 pJ/b Direct-Drive Optical Transmitter Using SM 1060 nm VCSEL Over 5 km SMF** — 09:30 - 10:00
Paper Oral Upgrade Presenter: Arijit Karmakar, IMEC-Ghent University, Ghent, Belgium

W.01.03.4 — **Picojule-per-bit silicon photonic transmitters** — 10:00 - 10:30
Invited Speaker: David Thomson, University of Southampton, Southampton, United Kingdom

Paper Session
SC 4: Signal processing for optical communication and computing
Wednesday, October 1, 2025, 09:00 - 10:00 — Auditorium 15

W.01.04 - Forward-error-correction

Chair: Bernhard Spinnler, Infinera, Munich, Germany

W.01.04.1 — **LDPC coding for bursty optical channels** — 09:00 - 09:15
Paper Oral Presenter: Han Cui, Chalmers University of Technology, Göteborg, Sweden

W.01.04.2 — **Lowering Error Floors for Hard Decision Decoding of OFEC Code** — 09:15 - 09:30
Paper Oral Presenter: Jasper Lagendijk, Eindhoven University of Technology, Eindhoven, Netherlands

W.01.04.3 — **Experimental Demonstration of Rate-Adaptation via Hybrid Polar-BCH Product Code for Flexible PON** — 09:30 - 09:45
Paper Oral Presenter: Bin Chen, Hefei University of Technology, Hefei, China
Paper Oral Presenter: Yifan Ye, Hefei University of Technology, Hefei, China

W.01.04.4	**Turbo Equalization for High-Speed PAM4 Bandwidth-limited IM/DD Transmission System** Paper Oral Presenter: Tianyuan Kong, Huawei Technologies Duesseldorf GmbH, Munich Research Center, Riesstr. 25, Munich, Germany	09:45 - 10:00

Paper Session
SC 11: Quantum communications and quantum computing
Wednesday, October 1, 2025, 09:00 - 10:30 B3 M1-4

W.01.05 - CV-QKD

Chair: Laurent Schmalen, Karlsruhe Institute ofTechnology (KIT) – Co-Head, Communications Engineering Laboratory (CEL), Karlsruhe, Germany

W.01.05.1	**Mode Mismatch Mitigation in Gaussian-Modulated CV-QKD** Paper Oral Presenter: Svitlana Matsenko, Technical University of Denmark, Kgs. Lyngby, Denmark	09:00 - 09:15
W.01.05.2	**Composable CVQKD Co-Propagated with 79 x 10 Gbaud 4PAM Channels in the C-Band on a 12.5 dB Loss Budget** Paper Oral Presenter: Hou-Man Chin, Technical University of Denmark, Copenhagen, Denmark	09:15 - 09:30
W.01.05.3	**Compact Continuous-Variable Quantum Key Distribution System Employing Monolithically Integrated Silicon Photonic Transceiver** Paper Oral Upgrade Presenter: Denis Fatkhiev, Eindhoven University of Technology, Eindhoven, Netherlands	09:30 - 10:00
W.01.05.4	**Short Blocklength Error Correction Codes for Continuous-Variable Quantum Key Distribution** Paper Oral Presenter: Kadir Gümüş, Eindhoven University of Technology, Eindhoven, Netherlands	10:00 - 10:15
W.01.05.5	**Early Termination of Low-Density Parity-Check Codes for Continuous-Variable Quantum Key Distribution** Paper Oral Presenter: Kadir Gümüş, Eindhoven University of Technology, Eindhoven, Netherlands	10:15 - 10:30

Paper Session
SC 6: Architecture, modelling and performance of optical networks
Wednesday, October 1, 2025, 09:00 - 10:30 B3 M5-M8

W.01.06 - Longitudinal Power Profile Monitoring I

Chair: Carmen Vázquez García, Universidad Carlos III de Madrid – Electronics Technology Department, Madrid, Spain

W.01.06.1	**Optical Transport Networks Supporting Integrated Communications and Sensing in 6G** Invited Speaker: Anna Tzanakaki, National and Kapodistrian University of Athens, Athens, Greece	09:00 - 09:30
W.01.06.2	**Extreme PPE Capability and Its Application for End-to-End Performance Diagnosis of Millisecond-Level Transients** Paper Oral Presenter: Junho Chang, Huawei Technologies Canada, Ottawa, Canada	09:30 - 09:45

W.01.06.3	**Impact of Carrier Phase Recovery on Longitudinal Power Monitoring** Paper Oral Presenter: Runa Kaneko, NTT, Kanagawa, Japan	09:45 - 10:00
W.01.06.4	**Robust Fibre Longitudinal Power Monitoring with Few Measurements using Two-stage Sparse Regularization** Paper Oral Presenter: Hiroyuki Ishihara, NTT, Yokosuka, Japan	10:00 - 10:15
W.01.06.5	**In-band Power Ripple Detection using Longitudinal Power Monitoring** Paper Oral Presenter: Junho Chang, Huawei Technologies Canada, Ottawa, Canada	10:15 - 10:30

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Wednesday, October 1, 2025, 09:00 - 10:30 B4 M1-4

W.01.07 - Very High Speed Passive Optical Networks

Chair: Rene Bonk, Nokia Bell-Labs, Stuttgart, Germany

W.01.07.1	**Super-Rated IM/DD PON Downstream Demonstration at 100G Net Rate using Line Rates up to 124 Gb/s** Paper Oral Upgrade Presenter: Michiel Verplaetse, Nokia Bell Labs, Antwerp, Belgium	09:00 - 09:30
W.01.07.2	**100-120G IM-DD PONs with 32 dB power budget and TDEC with DFE based reference receiver to ensure interoperability** Paper Oral Presenter: Vincent Houtsma, Nokia, Bell Labs, Murray Hill, United States	09:30 - 09:45
W.01.07.3	**Experimental Quantification of Stimulated Raman Scattering Penalties Induced by VHSP in PON Coexistence Scenario** Paper Oral Presenter: Gaël Simon, Orange Innovation, Lannion, France	09:45 - 10:00
W.01.07.4	**Integrated 200G Pre-amplified SC-PON Receiver** Paper Oral Presenter: Yuhao Fang, Westlake University, Hangzhou, China	10:00 - 10:15
W.01.07.5	**Downstream and Upstream Symmetric 120 GBd NRZ IM/DD Very High Speed PON Using BiDi Amplifier** Paper Oral Presenter: Robert Borkowski, Nokia Bell Labs, Murray Hill, NJ, United States	10:15 - 10:30

Paper Session
SC 9: Free-space optics and optical wireless technologies
Wednesday, October 1, 2025, 09:00 - 10:00 B4 M5-8

W.01.08 - FSO Channel Improvement

Chair: Anaëlle Maho, Thales Alenia Space, Toulouse, France

W.01.08.1	**Experimental Demonstration of Mid-Infrared Free-Space Optical Communication through Turbulence with Mode-Division Multiplexing of Two 1-Gbit/s OOK Channels** Paper Oral Presenter: Wing Ko, University of Southern California, Los Angeles, United States	09:00 - 09:15

W.01.08.2	**Hybrid Optical / RF Feeder for 6G Radio Access with Shared FSO / FR3 Aperture and ΣΔ-Modulation Switching** Paper Oral Presenter: Florian Honz, AIT Austrian Institute of Technology, Vienna, Austria	09:15 - 09:30
W.01.08.3	**14 Gb/s MWIR FSO Transmission using Directly Modulated QCL and an Uncooled UTC-PD at Room-Temperature** Paper Oral Upgrade Presenter: Zhidong Lyu, Zhejiang University, Hangzhou, China	09:30 - 10:00

Paper Session
SC 8: Sensing and microwave photonics
Wednesday, October 1, 2025, 09:00 - 10:15 B5 M1-4

W.01.09 - Advanced Photonic Technologies

Chair: Oskars Ozoliņš, RISE/RTU, Kista/Riga, Sweden

W.01.09.1	**Compact and High-Linearity Analog Optical Transmitter for Radio Over Fiber Based on Embedded Predistortion Circuits** Paper Oral Presenter: Zhi Hu, Huazhong University of Science and Technology, Wuhan, China	09:00 - 09:15
W.01.09.2	**Multi-Octave Modified Uni-Travelling Carrier Photodiode Packaging Exploiting a 100-500 GHz Waveguide Transition** Paper Oral Presenter: Shuya Iwamatsu, University of Duisburg-Essen, Duisburg, Germany	09:15 - 09:30
W.01.09.3	**Wireless Millimeter-Wave Electro-Optic Modulators on Thin-Film Lithium Niobate** Paper Oral Presenter: Aleksei Gaier, Hybrid photonic laboratory (HYLAB), EPFL, Lausanne, Switzerland	09:30 - 09:45
W.01.09.4	**Closed-Form Expressions for Nonlinearity Coefficients in Few-Mode Multicore Fibers** Paper Oral Presenter: Paolo Carniello, Technical University of Munich, Munich, Germany	09:45 - 10:00
W.01.09.5	**Field Trials of a Quantum-Inspired Correlated Light Monitoring System for Physical Layer Quality and Security Assurance** Paper Oral Presenter: Thomas Lyons, Aegiq Ltd, Sheffield, United Kingdom	10:00 - 10:15

.
Wednesday, October 1, 2025, 10:30 - 11:00

Coffee break

Poster Session
SC 1: Novel fibres, fibre devices and amplifiers
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 1: Novel fibres, fibre devices and amplifiers

W.02.01.01	**Experimental Characterization of Stimulated Raman Scattering in Field-Deployed Coupled-Core Multi-Core Fibers** Paper Poster Presenter: Giammarco Di Sciullo, University of L'Aquila,	

L'Aquila, Italy

W.02.01.02 **Pushing the Limits of Core Density in Multi-core Fibres for Data Centre Applications**
Paper Poster Presenter: Hiroki Takehana, Fujikura Ltd., 1440 Mutsuzaki, Sakura, Chiba, Japan

W.02.01.03 **Nitrogen dioxide contamination in as-drawn hollow-core fibre**
Paper Poster Presenter: Kerrianne Harrington, University of Bath, Bath, United Kingdom

W.02.01.04 **Bending-Induced Birefringence in Uncoupled-Core Multi-Core Fibers**
Paper Poster Presenter: Martina Cappelletti, University of Padova, Padova, Italy

W.02.01.05 **Factor of Two Improvement of Extended L-Band EDFA by Reflecting Out-of-Band ASE**
Paper Poster Presenter: Kasper Ingerslev, Lightera, Brondby, Denmark

W.02.01.06 **Fiber Optical Parametric Amplifier Tuneable across 590nm Range with Continuous Wave Output Power up to 4W**
Paper Poster Presenter: Vladimir Gordienko, Aston University, Birmingham, United Kingdom

W.02.01.07 **Digital Dispersion Pre-Compensation in Single Span Transmission Links Using Phase Sensitively Pre-Amplified Receivers**
Paper Poster Presenter: Junda Chen, Chalmers University of Technology, Gothenburg, Sweden

W.02.01.08 **CO_2 Elimination in Hollow-Core Fibre via Post-Processing**
Paper Poster Presenter: Yingying Wang, Linfiber Technology (Nantong) Co., Ltd., Guangzhou, China
Paper Poster Presenter: Yifan Xiong, Linfiber Technology (Nantong) Co., Ltd., Guangzhou, China

W.02.01.09 **Random and External Twisting Effect on Power Coupling in Bent Coupled Multi-Core Fibres**
Paper Poster Presenter: Shingo Ohno, NTT, Tsukuba, Japan

W.02.01.10 **157-nm High-gain, Low-noise S-, C-, and Extend L-band Amplifier Using Cascaded Discrete Raman and Bismuth-doped Fiber Amplification**
Paper Poster Presenter: lei shen, State Key Laboratory of Optical Fiber and Cable Manufacture Technology, Yangtze Optical Fiber and Cable Joint Stock Limited Company (YOFC), Wuhan, China
Paper Poster Presenter: zhaolong liao, State Key Laboratory of Optical Fiber and Cable Manufacture Technology, Yangtze Optical Fiber and Cable Joint Stock Limited Company (YOFC), Wuhan, China

Poster Session
SC 2: Discrete photonic devices and technologies
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 2: Discrete photonic devices and technologies

W.02.01.11 **Silicon Photonic CROW Filter for Integrated Carrier-extracted Self-coherent Receiver with Signal Guard Band Optimization**

Paper Poster Presenter: Haojie Zhu, Westlake University, Hangzhou, China

W.02.01.12 **Monolithically Integrated O-band Quantum Dot DFB Laser with a SOA Section**

Paper Poster Presenter: Evgenii Vostrikov, Innolume GmbH, Dortmund, Germany
Paper Poster Presenter: Stanislav Ročas, Innolume GmbH, Dortmund, Germany

W.02.01.13 **S-Band Variable-Confinement Semiconductor Optical Amplifiers for High-Capacity Multi-Band WDM Systems**

Paper Poster Presenter: Célia Cruz, III-V Lab, Palaiseau, France

W.02.01.15 **Monolithic Multi-Wavelength Mode-Locked DFB Laser Based on Waveguide Bragg Grating Microcavities**

Paper Poster Presenter: Mohanad Al-Rubaiee, James Watt School of Engineering, University of Glasgow, Glasgow G12 8QQ, UK., Glasgow, United Kingdom

W.02.01.16 **A Programmable and Reconfigurable On-Chip Photonic Filter for Next-Generation Multi-Channel DWDM**

Paper Poster Presenter: Simeng Zhu, University of Glasgow, Glasgow, United Kingdom

W.02.01.17 **Miniature Self-injection-locked Laser with 5.7 mHz Lorentzian Linewidth**

Paper Poster Presenter: Zhaoyi Wang, Tsinghua University, Beijing, China

W.02.01.18 **High-Power, Narrow-Linewidth Multi-Channel Interference Widely Tunable Lasers Based on Butt-Joint Regrowth**

Paper Poster Presenter: Jiajun Lou, Huazhong University of Science and Technology, wuhan, China

W.02.01.19 **Broadband Athermal Silicon Nitride Microring Resonators with Improved Stability**

Paper Poster Presenter: Xiaoyan Zhou, Tianjin University, Tianjin, China

W.02.01.20 **A Ultra-Stable Broadband Novel Comb Laser with Tunable Free Spectral Range and Spectra**

Paper Poster Presenter: Bahareh Marzban, ETHZ, Zurich, Switzerland

W.02.01.21 **Semiconductor Laser with Mode-Locking and Single-Longitudinal Bifunctional Operation**

Paper Poster Presenter: MOHANAD RUBAIE, James Watt School of Engineering, University of Glasgow, Glasgow, United Kingdom
Paper Poster Presenter: Jue Wang, James Watt School of Engineering, University of Glasgow, Glasgow, United Kingdom

W.02.01.22 **Ultra-high Linearity Silicon Dual-microring Modulator with High Extinction Ratio and High Bandwidth Based on DC Kerr Effect**

Paper Poster Presenter: Wei Chu, Zhangjiang Laboratory, Shanghai, China
Paper Poster Presenter: Xin Wang, Fudan University, Shanghai, China

W.02.01.23 **Energy-Efficient DWDM Transmitter for Silicon Optical I/O Enabled by FP-Cavity Modulators**
Paper Poster Presenter: Jin Xie, Zhejiang University, Hangzhou, China

W.02.01.24 **High-Speed Back Emitting VCSEL with HCG Meta Lens**
Paper Poster Presenter: Jiaxing Wang, Berxel Photonics Co. Ltd, Shenzhen, China

W.02.01.25 **An on-chip dual-tone source for photonic-based terahertz transmitters**
Paper Poster Presenter: Shima Rajabali, Harvard University, Cambridge, MA, United States

W.02.01.26 **High power wideband quantum dot comb laser with 200GHz mode spacing for short reach optical I/O applications**
Paper Poster Presenter: Bo Zhou, HUAWEI Technologies co. Ltd, wuhan, China
Paper Poster Presenter: Shiyong Zhang, HUAWEI Technologies co. Ltd, wuhan, China

W.02.01.27 **16-wavelength Comb Source Based on Integrated Multi-Wavelength DFB Lasers for Optical I/O Technology**
Paper Poster Presenter: Zhenxing Sun, Nanjing University, NanJing, China
Paper Poster Presenter: Jie Zhao, Nanjing University, NanJing, China

W.02.01.28 **Ultrasmall Mode Exchangers based on Mosaic Structure Designed by Gradient Direct Binary Search Method**
Paper Poster Presenter: Takeshi Fujisawa, Hosei University, Tokyo, Japan

W.02.01.29 **High-power REC-DFB Laser Array Integrated with Phase Compensators for Optical I/O Technology**
Paper Poster Presenter: Yue Zhang, Nanjing University, NanJing, China

W.02.01.30 **Broadband and High Efficiency Difference Frequency Generation in a Nanophotonic Lithium Niobate Waveguide**
Paper Poster Presenter: Haoran Li, Zhejiang University, Hangzhou, China

W.02.01.31 **Enhancing Non-Volatile and Reversible Phase Shift in Si-Rich SiN Waveguide**
Paper Poster Presenter: Yuriko Maegami, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

W.02.01.32 **InGaP-on-insulator Waveguides for Entangled Pair Generation**
Paper Poster Presenter: Lucas C. Ahler, Aarhus University, Aarhus, Denmark

W.02.01.33 **Highly Efficient All-Optical Control of Optomechanical Photonic Crystal Nanobeam Cavities via the Mechanical Kerr Effect**
Paper Poster Presenter: Mohanad Al-Rubaiee, James Watt School of Engineering, University of Glasgow, Glasgow G12 8QQ, UK., Glasgow, United Kingdom

Poster Session
SC 3: Photonic integrated circuits, assemblies and packaging
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 3: Photonic integrated circuits, assemblies and packaging

W.02.01.34 **A Fully Reconfigurable Integrated CWDM (de)multiplexer with a 250 nm Operational Bandwidth**

Paper Poster Presenter: Jiapeng Luan, The Chinese University of Hong Kong, New Territories, Hong Kong

W.02.01.35 **Hybrid Photonic Integrated Circuit for Tunable, Narrow-Linewidth mmWave to sub-THz Signal Generation**

Paper Poster Presenter: Tianwen Qian, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institute, HHI, Berlin, Germany

W.02.01.36 **Compact Detachable Optical Connector with Low Loss and High Stability for Co-Packaged Optics**

Paper Poster Presenter: Kengo Watanabe, Furukawa Electric Co., Ltd., Ichihara, Japan

W.02.01.37 **Thermally Accessible Low-Repetition-Rate Single Soliton Combs in Mode-Coupling-Engineered Microresonators**

Paper Poster Presenter: Yi Zheng, Technical University of Denmark, Kongens Lyngby, Denmark

W.02.01.38 **3D Silicon Nitride Waveguide Interposers for High-density Scale-up Chiplet Interconnects**

Paper Poster Presenter: Yuhao Huang, The University of Hong Kong, Hong Kong, Hong Kong
Paper Poster Presenter: Yu Xia, The University of Hong Kong, Hong Kong, Hong Kong

W.02.01.39 **An AI-accelerated Silicon Slow-light Modulator Chip for 400 Gbps PAM-4 with a Total Data Capacity of 3.2 Tbps**

Paper Poster Presenter: Yimeng Wang, Peking University, Beijing, China

W.02.01.40 **Reconfigurable Silicon Photonic Integrated Circuit-based Mode Repeater for Multi-Dimensional Free-Space Optical Communications**

Paper Poster Presenter: Seyedmohammad Seyedinnavadeh, Politecnico di Milano, Milan, Italy

W.02.01.41 **Monolithic Ring Laser for Optical Frequency Comb Generation**

Paper Poster Presenter: Yunyun ding, Eindhoven University of Technology, Eindhoven, Netherlands

W.02.01.42 **Exploring YOLO Inference using Digital–Analog Hybrid Photonic Processor**

Paper Poster Presenter: Deming Kong, DTU Electro, Technical University of Denmark, Lyngby, Denmark

W.02.01.43 **Ultra-high-capacity (288 channel, 30 Tbit/s) diverse space-division multiplexing (MCF, FMF, OAM) fiber-chip-fiber optical data transmission and signal processing system using 2D/3D heterogeneous integrated photonics chips**

Paper Poster Presenter: Kang Li, Wuhan National Laboratory for Optoelectronics and School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China

W.02.01.44 **Photonic Reservoir-Based Reinforcement Learning for Autonomous Mobile Robots Using Subcarrier Intermodulation Distortion**

Paper Poster Presenter: Hideaki Tanaka, KDDI Research, Inc., Fujimino, Japan

W.02.01.45 **Breaking the Bandwidth-Efficiency Trade-off of Soliton Microcombs via Strong Mode Coupling**

Paper Poster Presenter: Yang Liu, Technical University of Denmark, Kongens Lyngby, Denmark

W.02.01.46 **Demonstration of a 1-Tb/s Coherent Receiver Using Silicon Photonic Wavelength Demultiplexed 90° Optical Hybrid**

Paper Poster Presenter: Yan Fan, Southeast University, Nanjing, China

W.02.01.47 **Demonstration of Reconfigurable All-Optical Matrix-Matrix Multiplication Using Nonlinear Wave Mixing**

Paper Poster Presenter: Wing Ko, University of Southern California, Los Angeles, United States

W.02.01.48 **O-Band Self-Injection Locked Soliton Comb**

Paper Poster Presenter: Yuchen Yin, Shanghai Jiao Tong University, Shanghai, China

W.02.01.49 **Demonstration of ±0.5 GHz Lasing Frequency Stability of DFB-CAN with One-Chip Wavelength Monitor and Evaluation of 16QAM 40-km Fiber Transmission**

Paper Poster Presenter: Junichi Suzuki, Mitsubishi Electric Corporation, Kamakura, Japan

W.02.01.50 **First Demonstration of MRM on Low-loss SiN-SOI Platform for High-density and Low-power Optical Interconnection**

Paper Poster Presenter: Xu Wang, Huawei Technologies co. Ltd, China, Wuhan, China

W.02.01.51 **Fabrication-Tolerant Integrated Polarization-Independent Receiver for Coherent PONs based on LO SOP Tuning**

Paper Poster Presenter: Natalia Herguedas, Universidad de Zaragoza, Zaragoza, Spain

W.02.01.52 **Broadband Microwave Photonic Processor Based on Mach–Zehnder Interferometer Weight-Bank for Radio-Frequency Blind Interference Cancellation**

Paper Poster Presenter: Junwen Zhang, Fudan University, Shanghai, China
Paper Poster Presenter: Yuqin Yuan, Key Laboratory for Information Science of Electromagnetic Waves, Ministry of Education, Fudan University, Shanghai, China

W.02.01.53 **Silicon Photonic Integrated Millimeter-Wave Transceiver in Support of All-Optical Frequency Up-/Down-Conversion**

Paper Poster Presenter: Jiao Zhang, Purple Mountain Laboratories, NANJING, China

Poster Session
SC 4: Signal processing for optical communication and computing
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 4: Signal processing for optical communication and computing

W.02.01.54 **Unreplicated Successive Interference Cancellation for MDL Effect Mitigation and Fast Convergence Enabling Long-haul Few-mode Transmission**

Paper Poster Presenter: Tianyu Gao, Tianjin University, Tianjin, China
Paper Poster Presenter: Yanze Wang, Tianjin University, Tianjin, China

W.02.01.55 **Simple-Soft-Output MLSE Based on Bayesian Updating and Performance of Turbo Product Codes in High-Baudrate PAM4 Optical Transmission**

Paper Poster Presenter: Shuto Yamamoto, NTT Corporation, Yokosuka, Japan

W.02.01.56 **A New 5-bit/2D-symbol Modulation Format for Relative Intensity Noise-dominated IM-DD Systems**

Paper Poster Presenter: Felipe Villenas, Eindhoven University of Technology, Eindhoven, Netherlands

W.02.01.57 **MIMO for Joint Compensation of Mode Coupling, Frequency Offset and Carrier Phase Noise for Optical Carrier-Asynchronous SDM System via Frequency-Domain Pilot Tones**

Paper Poster Presenter: Linsheng Fan, Peng Cheng Laboratory (PCL), Shenzhen, China

W.02.01.58 **Neural Probabilistic Shaping: Joint Distribution Learning for Optical Fiber Communications**

Paper Poster Presenter: Mohammad Taha Askari, University of British Columbia, Vancouver, Canada

W.02.01.59 **Mixed-Signal Neuromorphic Hardware for Spiking Neural Network Equalizers in IM/DD Optical Transmission**

Paper Poster Presenter: Shuangxu Li, Huawei Technologies Duesseldorf GmbH, Munich, Germany

W.02.01.60 **Encoding Optimization for Low-Complexity Spiking Neural Network Equalizers in IM/DD Systems**

Paper Poster Presenter: Eike-Manuel Edelmann, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

W.02.01.61 **Hollow-Core Fiber Transmission: Impact of CO_2 Absorption and its Mitigation by Waveform Design**

Paper Poster Presenter: Flavio Nogueira Sampaio, Huawei Technologies France, Paris Research Center, Paris, France

W.02.01.62 **Mitigating Equalization-Enhanced Phase Noise Using Adaptive Time Interpolator**

Paper Poster Presenter: Cengizhan Kaya, Huawei Technologies Duesseldorf GmbH, Munich, Germany

W.02.01.63 **Joint Subcarrier Equalization-Enhanced Phase Noise Mitigation**

Paper Poster Presenter: Sebastian Jung, University of Stuttgart, Stuttgart,

Germany

W.02.01.64 **Linear Matrix Computation via a Silicon Photonic Feedforward Balanced Network Chip**
Paper Poster Presenter: Ying Zhu, National information optoelectronic innovation center, Wuhan, China

W.02.01.65 **Neural Demodulation-Aided Optimization of Discrete Eigenvalue Assignment Enabling Error-Free 4000-km Transmission**
Paper Poster Presenter: Daisuke Hisano, The University of Osaka, Osaka, Japan

W.02.01.66 **Hybrid Soft/Hard-Decision Iterative Decoding of Concatenated RS-BCH Codes**
Paper Poster Presenter: Alvin Yonathan Sukmadji, University of Toronto, Toronto, Canada

W.02.01.67 **Multi-layer Semantic-aware Loading for Short-reach Goal-oriented Optical Communication Systems**
Paper Poster Presenter: Geyang Wang, The Chinese University of Hong Kong, Hong Kong, Hong Kong

W.02.01.68 **Efficient phase noise compensation technique for FMCW LiDAR sensors with simplified complexity**
Paper Poster Presenter: Javier Pérez Santacruz, imec, Eindhoven, Netherlands

W.02.01.69 **Micro-Ring Resonator Based Reservoir Computer for Short-Reach WDM Signal Equalization**
Paper Poster Presenter: Mohammad Seifi Laleh, Kiel University, Kiel, Germany

W.02.01.70 **D-band Ultra-Long-Distance Wireless Transmission with Partial Over-the-Sea Link Using QuadConvNet Equalizer**
Paper Poster Presenter: Qinyi Zhang, Fudan University, Shanghai 200433, China, Shanghai, China

W.02.01.71 **Cost Effective and Robust Transmitter IQ skew Compensation Scheme for High Speed Coherent Digital Subcarrier Multiplexing System**
Paper Poster Presenter: Yongchao Jin, Harbin Institute of Technology, Shenzhen, China

W.02.01.72 **Asymmetrical Filtering Impairments Mitigation for Digital-Subcarrier-Multiplexing Transmissions Enabled by Multiplication-free K-State Reserved Complex MLSE**
Paper Poster Presenter: Hexun Jiang, ZTE corporation, Shenzhen, China

Poster Session
SC 5: Optical transmission systems
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 5: Optical transmission systems

W.02.01.73 **First Net 800 Gbps/λ 120 Gbaud DP-16 QAM C-Band Coherent**

Transmission System Enabled by a BTO IQM with Linear DSP Under the SD-20 FEC Threshold

Paper Poster Presenter: Benton Qiu, McGill University, Montreal, Canada

W.02.01.74 **Investigation of Nonlinear Impairments and their Compensation in Integrated SOA within High Bandwidth Coherent Driver Modulator**

Paper Poster Presenter: Xiaohui ZHAO, Politecnico di Milano, Milan, Italy

W.02.01.75 **A General Nonlinear Model for Arbitrary Modulation Formats in the Presence of Inter-Channel Simulated Raman Scattering**

Paper Poster Presenter: Bin Chen, Hefei University of Technology, Hefei, China
Paper Poster Presenter: Zhiwei Liang, Hefei University of Technology, Hefei, China

W.02.01.76 **Single-Step Digital Backpropagation for O-band Coherent Transmission System**

Paper Poster Presenter: Romulo Aparecido de Paula Junior, UCL (University College London), London, United Kingdom

W.02.01.77 **Low-Crosstalk Dual-Core Fibre for Co- and Counter-Propagating Trans-Oceanic Transmission**

Paper Poster Presenter: Arjun Kurur, Technical University of Denmark, DTU, Kgs. Lyngby, Denmark

W.02.01.78 **Evaluation Method of Adaptive SDM-MIMO Equaliser based on the Quantitative Coupled Channel Dynamics**

Paper Poster Presenter: Megumi Hoshi, NTT Network Innovation Laboratories, NTT Corporation, Yokosuka, Japan

W.02.01.79 **Integration of Optical Performance Monitoring and Distributed Sensing in Legacy Frame-based Coherent Communication**

Paper Poster Presenter: Maoqi Liu, The Hong Kong Polytechnic University, Hong Kong, Hong Kong

W.02.01.80 **255-Gb/s C-Band IM-DD over 75 km SSMF Based on Flexible Dispersion-Diverse Receiver with Low Dispersion Path**

Paper Poster Presenter: Ziheng Zhang, Shanghai Jiao Tong University, Shanghai, China

W.02.01.81 **2 Tb/s/λ 3-mode Transmission over 54-km Few-Mode Fiber with Blind Equalization Enabled by Digital Subcarrier Multiplexing**

Paper Poster Presenter: Aymeric Arnould, Fraunhofer Heinrich-Hertz-Institut, HHI, Berlin, Germany

W.02.01.82 **Single-Mode Transmission over Ultra-low-loss 0.1400 dB/km Few-mode Fibre for Data Centre Interconnects**

Paper Poster Presenter: Fabio Aparecido Barbosa, Optical Networks Group, University College London, London, United Kingdom

W.02.01.83 **The Case for a DNANF 1Pb/s Trans-Atlantic Submarine Cable**

Paper Poster Presenter: Pierluigi Poggiolini, Politecnico di Torino, Torino, Italy

W.02.01.84 **Observing the Worst- and Best-Case Line-System Transmission**

Conditions in a C-Band Variable Spectral Load Scenario

Paper Poster Presenter: Andrea D'Amico, NEC Laboratories America Inc., Princeton, United States

W.02.01.85 **C-band 350Gb/s 8.52-km Optical Interconnect enabled by Anti-Resonant Hollow-Core Fiber and PS-PAM16**

Paper Poster Presenter: Shouchuan Ma, Tsinghua University, Shenzhen, China

W.02.01.86 **Novel Polarization-dependence-free Optical Injection-locking Circuit using λ/4 Phase-shift-free HR DFB LD at 1.5 μm**

Paper Poster Presenter: Keisuke Kasai, Tohoku University, Sendai, Japan

W.02.01.87 **Partial-MIMO Application for Mode Groups Transmission over 15-Mode and 6-Mode Multi-Mode Fibers**

Paper Poster Presenter: Stefano Gaiani, National Institute of Information and Communications Technology, Tokyo, Japan

W.02.01.88 **Co-Transmission of OSCL-Band 4λ 240 Gb/s/λ PAM8 Signals over 6.2 km Anti-Resonate Hollow-Core-Fiber with Linear FFE**

Paper Poster Presenter: Chao Li, Pengcheng Laboratory, Shenzhen, China
Paper Poster Presenter: Songyuan Hu, Pengcheng Laboratory, Shenzhen, China

W.02.01.89 **Polarization Agnostic Frequency-Comb WDM Transmission Enabling Net 1.6 Tbps**

Paper Poster Presenter: Aleksandar Nikic, McGill University, Montreal, Canada

W.02.01.90 **Impact of Non-Uniform Fibre's Zero-Dispersion Wavelength on Four-Wave Mixing in 10-km IMDD LWDM Systems**

Paper Poster Presenter: Huijian Zhang, Opto-Electronics Business Department, Huawei Technologies co. Ltd, Beijing, China

W.02.01.91 **Single-Fiber Single-Wavelength Bidirectional Digital Subcarrier Point-to-Multipoint Coherent Systems for Beyond 5G Transport**

Paper Poster Presenter: Pablo Torres-Ferrera, Nokia, Munich, Germany

W.02.01.92 **Optimal Symbol Rate for Discrete Nonlinear Frequency Division Multiplexing Transmissions**

Paper Poster Presenter: Chuang XU, The Hong Kong Polytechnic University, Hong Kong, Hong Kong

W.02.01.93 **A Neural Network Equalizer for SOA Nonlinearities in Coherent Systems**

Paper Poster Presenter: Hamza Imtiaz, COPL, Université Laval, Québec, Canada

W.02.01.94 **Joint Localization and Monitoring of Multipath Interference in DMT Systems Using LFM Pilot**

Paper Poster Presenter: Chen Cheng, Huazhong University of Science and Technology, Wuhan, China
Paper Poster Presenter: Zhijin Zhao, Huazhong University of Science and Technology, Wuhan, China

Poster Session
SC 6: Architecture, modelling and performance of optical networks
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 6: Architecture, modelling and performance of optical networks

W.02.01.95 **Impact of SOA Nonlinear Impairments on Data Center Interconnect Link Performance and Optimization**
Paper Poster Presenter: Salma El Miz, Huawei Technologies France, Boulogne Billancourt, France

W.02.01.96 **QoT Impairments Induced by Statistical Filtering Variations with a Realistic Equalizer**
Paper Poster Presenter: Enrico Miotto, Politecnico di Torino, Turin, Italy

W.02.01.97 **Traffic-Interleaved Connectivity Provisioning for Cross-datacenter LLM Training over Optical Transport Networks**
Paper Poster Presenter: Qiaojun Hu, Beijing University of Posts and Telecommunications, Beijing, China

W.02.01.98 **Dynamic Risk-Aware Reconfiguration in Coherent P2MP Extended Access Networks Under Time-Varying Demands**
Paper Poster Presenter: Polyzois Soumplis, National Technical University of Athens, Athens, Greece

W.02.01.99 **Cross-Band vs Mono-Band Regeneration in C+L Optical Networks: Benefits and Trade-Off Analysis**
Paper Poster Presenter: Sanzhar Yergaliyev, Politecnico di Milano, Milan, Italy
Paper Poster Presenter: Memedhe Ibrahimi, Politecnico di Milano, Milan, Italy

W.02.01.100 **Digital Twin for Estimating QoT Statistics in Presence of PDL and Transceiver Imperfections**
Paper Poster Presenter: Ambashri Purkayastha, Nokia Bell Labs, Massy, France

W.02.01.101 **Experimental Demonstration of Improved Deconvoluted Correlation Based Longitudinal Power Monitoring**
Paper Poster Presenter: Peiyun Ge, State Key Laboratory of Information Photonics and Optical Communications, Beijing University of Posts and Telecommunications (BUPT), Beijing, China

W.02.01.102 **Availability Estimation of External IP-Optical Network Connections Using Bayesian Modeling**
Paper Poster Presenter: Filippos Christou, University of Stuttgart, Stuttgart, Germany

W.02.01.103 **Large-Scale Optical Networks Fast Routing: A Modified Contraction Hierarchy Approach for Path Recovery**
Paper Poster Presenter: Tianxu Zhang, Beijing University of Posts and Telecommunications, Beijing, China

W.02.01.104 **Comparison of Different Backward Raman Amplification Schemes for C+L Long-Haul Transmission Systems**
Paper Poster Presenter: Maha Bouhadida, Huawei Technologies France,

Boulogne Billancourt, France

W.02.01.105 **A Simple Fiber Anomaly Detection Approach via Band Power in S+C+L-Band Optical Transmission Systems**
Paper Poster Presenter: Shengnan Li, State Key Laboratory of Information Photonics and Optical Communications, Beijing University of Posts and Telecommunications (BUPT), Beijing, China

W.02.01.106 **Optimal Placement of Hollow-Core Fiber Spans to Realize Cost-Effective and High-Capacity Optical Transport Networks**
Paper Poster Presenter: João Pedro, Nokia, Carnaxide, Portugal

W.02.01.107 **On-Chip Physical Layer Optical Module Identification Using a Photonic Fingerprint Device**
Paper Poster Presenter: Taihang Qiu, Huazhong University of Science and Technology, Wuhan, China

W.02.01.108 **Localization and estimation of multiple PDL anomalies by monitoring a single SNR distribution at the receiver side**
Paper Poster Presenter: Emmanuel Seve, Nokia Bell Labs, Massy, France

W.02.01.109 **A Cost-Effective Multi-band OXC Architecture with Inter-band Wavelength Conversion on a Subset Ports**
Paper Poster Presenter: Gangxiang Shen, Soochow University, Suzhou, China
Paper Poster Presenter: Ningning Guo, Soochow University, Suzhou, China

Poster Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 7: Access, indoor and short-reach systems for data centres and mobile networks

W.02.01.110 **200G-PON based on 4x50Gbit/s NRZ LWDM Signals Coexisting with 50G-PON, XGS-PON and G-PON**
Paper Poster Presenter: Gaël Simon, Orange Innovation, Lannion, France

W.02.01.111 **A Co-Designed DC-Coupled 30-Gbps Burst-Mode Receiver and CDR with 3.2-ns Locking Time for Fast Optical Switching**
Paper Poster Presenter: Xin Wang, IDLab, INTEC, Ghent University – imec, Ghent, Belgium

W.02.01.112 **200Gbps PAM4 Transmission over 150-m OM5 fiber using a multimode 940nm VCSEL**
Paper Poster Presenter: Huijian Zhang, Opto-Electronics Business Department, Huawei Technologies co. Ltd, Beijing, China

W.02.01.113 **Nonlinear Signal Recovery Using Pruned Support Vector Machine for 150 - 210 Gb/s Bandwidth-Limited Flexible PON**
Paper Poster Presenter: Yanni Ou, State Key Laboratory of Information Photonics and Optical Communications, Beijing University of Posts and Telecommunications, Beijing, China
Paper Poster Presenter: Liyan Wu, State Key Laboratory of Information Photonics and Optical Communications, Beijing University of Posts and Telecommunications, Beijing, China

W.02.01.114 **Field Trial of 3×1 Distributed Fiber Wireless mmWave Xhaul with Coordinated Multi-Point Scheduling and Real-Time MEC**

Paper Poster Presenter: Chris Vagionas, Aristotle University of Thessaloniki, Thessaloniki, Greece
Paper Poster Presenter: Maria Vargemidou, Aristotle University of Thessaloniki, Thessaloniki, Greece

W.02.01.115 **Smartphone Camera Detection of ONU Identification Carried by Modulated 650 nm LED Integrated with ONU Optics**

Paper Poster Presenter: Gaël Simon, Orange Innovation, Lannion, France

W.02.01.116 **Two-dimensional photonic-switched high-speed interconnects for AI-driven data centre networks**

Paper Poster Presenter: RUI MA, University of Cambridge, Cambridge, United Kingdom

W.02.01.117 **Transmitter-Aware Fast FFE Coefficients Distribution for PAM4 Links in Sub-Microsecond Optical Switching Networks**

Paper Poster Presenter: boyang zheng, Eindhoven University of Technology and Eindhoven Hendrik Casimir Institute, Eindhoven, The Netherlands, Eindhoven, Netherlands

W.02.01.118 **DMT vs PAM: an Experimental Comparison over VCSEL-MMF Links for Intra-Datacenter Connections**

Paper Poster Presenter: Ann Margareth Rosa Brusin, Politecnico di Torino, Turin, Italy

W.02.01.119 **Low Power Consumption and Low Latency SFP112-LPO Transceiver with Real-time 20 km Transmission for Next-generation Fronthaul Networks**

Paper Poster Presenter: Xia Sheng, China Telecom Beijing Research Institute, Beijing, China

W.02.01.120 **19-dB DC Leakage Tolerance Improvement for 200G Coherent TDM-PON in Burst-Mode Upstream with Spectral Peak Removal**

Paper Poster Presenter: Yixiao Zhu, State Key Laboratory of Photonics and Communications, Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai, China

W.02.01.121 **Cell-free Massive MIMO Fronthaul with Point-to-Multipoint Data Transmission and Photonics-assisted Radio Carrier Distribution**

Paper Poster Presenter: Dongxu Zhang, Nokia Bell Labs, Shanghai, China

W.02.01.122 **Autonomous Transmitter-optical-power Levelling of ONUs for Energy-efficient PON Systems**

Paper Poster Presenter: Suguru Yamaoka, NTT Access Network Service Systems Laboratories, Yokosuka, Japan

W.02.01.123 **Optimization of Upstream XGS-PON Throughput by Adjusting Burst Preamble Length and Enabling Forward Error Correction**

Paper Poster Presenter: Gaël Simon, Orange Innovation, Lannion, France

W.02.01.124 **400 Gbps/λ Transmission Based on Linear Hybrid Receiver for Intra-Datacenter-Interconnects**

Paper Poster Presenter: Ziheng Zhang, Shanghai Jiao Tong University,

Shanghai, China

W.02.01.125 **Performance Assessment of 800G/λ Filterless Optical Metro-Access Network with SOA-based OADM nodes**
Paper Poster Presenter: Shiyi Xia, Eindhoven University of Technology, Eindhoven, Netherlands

W.02.01.126 **On-site Fiber Identification for PON Systems by using Reflection Power Measurement of Optical Signal and Test Light**
Paper Poster Presenter: Hiroyuki Iida, NTT Corporation, Tsukuba, Japan

W.02.01.127 **Efficient Dynamic Range Optimization for Coherent PONs via Burst-Mode Digital Signal Processing with Adaptive Power Rebalancing, and Guard Band Management**
Paper Poster Presenter: Haipeng Zhang, CableLabs, Louisville, United States

W.02.01.128 **Traceback-Assisted Simplified Soft-Output MLSE for 320 Gb/s PAM4 Transmissions**
Paper Poster Presenter: Xue Zhao, University of Electronic Science and Technology of China, Chengdu, China

W.02.01.129 **Real-Time Optical Wireless Architecture for Scalable Open RAN in 5G and Beyond Networks**
Paper Poster Presenter: Othman Younus, University of Cambridge, Cambridge, United Kingdom

W.02.01.130 **850 nm VCSELs Exceeding 40 GHz Bandwidth Enable 200 Gbps Transmission over 100 m Multimode Fiber Link**
Paper Poster Presenter: Jiaxing Wang, Berxel Photonics Co. Ltd, Shenzhen, China

W.02.01.131 **Synchronous Clock and RF Carrier Transmission for Radio Access Network Fronthaul**
Paper Poster Presenter: Kari Aaron Clark, University College London, London, United Kingdom

W.02.01.132 **112.5 Gbps PAM4 and 150 Gbps PAM8 Signals for 3.2 Tbps DCI Utilising Off-the-Shelf High Power Fabry-Pérot Laser**
Paper Poster Presenter: Lakshmi Narayanan Venkatasubramani, Dublin City University, Dublin, Ireland

Poster Session
SC 8: Sensing and microwave photonics
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 8: Sensing and microwave photonics

W.02.01.133 **Demonstration of 30.4-km 20-Gbps Terahertz Wireless Transmission Utilizing CR-MRC Algorithm for OFDM Signals**
Paper Poster Presenter: Jianjun Yu, State Key Laboratory of ASIC and System and Key Laboratory for Information Science of Electro-magnetic Waves (MoE), School of Information Science and Technology, Fudan University, Shanghai, China
Paper Poster Presenter: Mingxu wang, State Key Laboratory of ASIC and

System and Key Laboratory for Information Science of Electro-magnetic Waves (MoE), School of Information Science and Technology, Fudan University, Shanghai, China

W.02.01.134 **100 GHz Ultra-Wideband Mode-Hop-Free Tunable Laser with High Linearity for OFDR Applications**

Paper Poster Presenter: Haiwen Cai, Chinese Academy of Sciences, Shanghai, China

W.02.01.135 **300-GHz Photonic Wireless Link with 5.3 mW Output Power Using Waveguide-Combined UTC-PD/SiC Photomixers**

Paper Poster Presenter: Yoshiki Kamiura, Kyushu University, Fukuoka, Japan

W.02.01.136 **Real-time Integrated 1.37 Centimetres Range Resolution and 15.5 Gbps Communication in Long-rang Bidirectional Photonic-assisted Terahertz Band System**

Paper Poster Presenter: Qihang Wang, Fudan University, Shanghai, China

W.02.01.137 **Enhanced φ-OFDR Distributed Sensing using Code-Division Multiplexing Phase Error Compensation**

Paper Poster Presenter: Weilin Xie, Beijing institute of technology, Beijing, China
Paper Poster Presenter: Congfan Wang, Beijing institute of technology, Beijing, China

W.02.01.138 **Compensation for Spatial Resolution Degradation by Chromatic Dispersion and Fibre Disturbance in Relative Distance Measurement OFDR Setup**

Paper Poster Presenter: Tatsuya Okamoto, NTT Access Network Service Systems Laboratories, Tsukuba, Japan

W.02.01.139 **Heterogeneous Integrated III-V-on-SOI Transmitter for 6G FiWi mmWave/FSO Integrated Sensing and Communication**

Paper Poster Presenter: Akeem Olalekan SAFIRIYU, Université Gustave Eiffel, CNRS, CNAM, ESYCOM, 292, rue Saint-Martin, 75003, Paris, France

W.02.01.140 **Blind Massive MIMO Signal Transmission by High Efficiency Compression IF over Fibre Using Cost-Effective EML-CAN**

Paper Poster Presenter: Junya Nishioka, Mitsubishi Electric Corporation, Kamakura, Japan

W.02.01.141 **Refractive Index Measurement Using FMCW LiDAR**

Paper Poster Presenter: Yuto Kusaka, Shimane University, Matsue, Japan

W.02.01.142 **Cost-Effective Frequency-Chirped Amplitude-Modulated Continuous-Wave LiDAR for Scalable High-Performance Ranging**

Paper Poster Presenter: Yi Hao, Tsinghua University, Shenzhen, China

W.02.01.143 **Record Real-time Integrated Unrepeatered Transmission and Sensing over 302km in Field Trial for OPGW Ice Monitoring**

Paper Poster Presenter: Jian Xu, Huazhong University of Science and Technology,, Wuhan, China

W.02.01.144 **Logarithm-based Nonlinear Quantized Digital-Analog Radio-over-Fiber Enables 20dB SNR Gain in Analog Mobile Fronthaul**

Paper Poster Presenter: Yu Xia, Huazhong University of Science and Technology, Wuhan, China

W.02.01.145 **Localization Enhancement of Forward Transmission Vibration Sensing by Using a Fiber Ring Structure**

Paper Poster Presenter: Yaxi YAN, The HK Polytechnic University, Kowloon, Hong Kong

W.02.01.146 **Simultaneous Transmission and Sensing Emulation Using Interconnected Counter-Propagating Recirculating Loops**

Paper Poster Presenter: Junyu Wu, Westlake University, Hangzhou, China

W.02.01.147 **Demonstration of Millimetre-Wave Antenna Distribution over IFoF System with TDD Timing-Aligned Remote Beam Control**

Paper Poster Presenter: Shinji Nimura, KDDI Research, Inc., Saitama, Japan

W.02.01.148 **Field Trial of Vibration Sensing on an Operational Telecom Fibre Network using Phase-Optical Time Domain Reflectometry**

Paper Poster Presenter: Vishal Chandraprakash Rai, Adtran Networks SE, Meiningen, Germany

W.02.01.149 **Backscattering of Crosstalk for Monitoring Power over Fiber Co-transmission with 5G NR Analog Radio Over Fiber and NRZ Signals over Multicore Fiber**

Paper Poster Presenter: Javier Barco-Alvárez, Universidad Carlos III Madrid, Leganes (Madrid), Spain

W.02.01.150 **Precise Localization of High-Voltage Breakdown Events using ϕ-Optical Time-Domain Reflectometry on an Optical Ground Wire**

Paper Poster Presenter: Konstantinos Alexoudis, Adtran Networks SE, 82152 Planegg, Germany

W.02.01.151 **Optimized signal processing for high-resolution FBG strain sensing using a dual-comb interrogator**

Paper Poster Presenter: Prince Anandarajah, Photonics Systems and Sensing Lab, Dublin, Ireland

W.02.01.152 **LFM Carrier Enabled Integrated Sensing and Communication in Self-homodyne Coherent Detection Transmission System**

Paper Poster Presenter: Shuyan Chen, Huazhong University of Science and Technology, Wuhan, China

W.02.01.153 **Demonstration of a 270 Gbps Entropy-Loading based IM/DD 2 × 2 MIMO THz Wireless Transmission System**

Paper Poster Presenter: Yuhao Fang, Westlake University, Hangzhou, China

Poster Session
SC 9: Free-space optics and optical wireless technologies
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 9: Free-space optics and optical wireless technologies

W.02.01.154 **High-Laser Linewidth-Tolerance Photonics-aided 300 GHz Terahertz Wireless Transmission System**

Paper Poster Presenter: Mingxu wang, State Key Laboratory of ASIC and

System and Key Laboratory for Information Science of Electro-magnetic Waves (MoE), School of Information Science and Technology, Fudan University, Shanghai, China
Paper Poster Presenter: Xiongwei Yang, Fudan University, Shanghai, China

W.02.01.155 **Integrated Ultra-Broadband Microwave Photonic Multi-Beamformer for Fast and Multi-band Beam Steering**
Paper Poster Presenter: Ziheng Ni, Shanghai JiaoTong University, Shanghai, China

W.02.01.156 **Outage Capacity of Mode-Division-Multiplexed Free-Space Optical Communications under Atmospheric Turbulence**
Paper Poster Presenter: Jonas Krimmer, Karlsruhe Institute of Technology, Karlsruhe, Germany

W.02.01.157 **Hybrid FSO/mmWave Industry 5.0 System Enabled by Ultra-Fast Tunable PZT-based External Cavity Laser**
Paper Poster Presenter: Evrydiki Kyriazi, School of Electrical & Computer Engineering,, Holargos, Athens, Greece

W.02.01.158 **WDM Operation of High-Flux Phosphor-Converted White LEDs for Joint Illumination and Visible-Light Communication**
Paper Poster Presenter: Bernhard Schrenk, AIT Austrian Institute of Technology, Vienna, Austria

W.02.01.159 **Programmable Lens Systems with Liquid Crystals Elastomers for High Capacity and Wide Steering Angle Wireless Optical Link**
Paper Poster Presenter: Vincent van der Doef, Eindhoven Hendrik Casimir Institute, Eindhoven, Netherlands

W.02.01.160 **B-Spline-based Hammerstein Nonlinear Equalizer for High-Sensitive VLC Systems using SiPM**
Paper Poster Presenter: Yinan Niu, School of Electronic and Information Engineering, Guangzhou, Guangdong, China

W.02.01.161 **Improved Sensitivity in SiPM-based VLC by Laser Linearization**
Paper Poster Presenter: Yee Hui Low, University of Cambridge, Cambridge, United Kingdom

W.02.01.162 **Channel Reciprocity-Driven Adaptive Optical Power Transmission for Turbulence Mitigation**
Paper Poster Presenter: Vitor Correia, Instituto de Telecomunicações of Aveiro, Aveiro, Portugal

W.02.01.163 **Self-aligned 10-Gb/s All-optical Infrared Wireless Using Crystal-based Multiplexed Holographic Beamsteering**
Paper Poster Presenter: Zhaoming Wang, Department of Engineering Science, University of Oxford, Parks Road, Oxford, OX1 3PJ, UK, Oxford, United Kingdom

W.02.01.164 **Long-Range, High-Capacity FSOC System for Rural Wireless X-Haul Using COTS Transceivers**
Paper Poster Presenter: Ozdal Boyraz, University of California, Irvine, Irvine, CA, United States

W.02.01.165 **Impact of Elevation Angle on 100Gbps Optical Coherent Uplink**

Transmission in Low Earth Orbit Satellite Communication

Paper Poster Presenter: Ognjen Jovanovic, Adtran Networks SE, Munich, Germany
Paper Poster Presenter: Mindaugas Jarmolovičius, Adtran Networks SE, Munich, Germany

W.02.01.166 **Experimental demonstration of 75 Gbps OAM multiplexing system using 1310 nm VCSEL transmitter**

Paper Poster Presenter: Rizwana Ahmad, University of Cambridge, Cambridge, United Kingdom

W.02.01.167 **Experimental Demonstration of Event-based Optical Camera Communication in Long-Range Outdoor Environment**

Paper Poster Presenter: Miu Sumino, Tokyo University of Agriculture and Technology, Tokyo, Japan

W.02.01.168 **Experimental Demonstration of Deep Joint Source-Channel Coding for Robust Image Transmission over Underwater VLC**

Paper Poster Presenter: Daisuke Hisano, The University of Osaka, Osaka, Japan

Poster Session
SC 10: Control and management of optical networks
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 10: Control and management of optical networks

W.02.01.169 **Field Demonstration of Digital Twin–enabled Launch Power Profile Optimization in a Submarine SDM Optical Network**

Paper Poster Presenter: Hanyu Gao, Sun Yat-sen University, Guangzhou, China
Paper Poster Presenter: Yongguang Xiao, Sun Yat-sen University, Guangzhou, China

W.02.01.170 **OptiMA: Collaborative Multi-Agent Framework for Modelling and Controlling Raman Amplifier in Intelligent Optical Networks**

Paper Poster Presenter: Yihao Zhang, Shanghai Jiao Tong University, Shanghai, China
Paper Poster Presenter: Siyuan Wu, Shanghai Jiao Tong University, Shanghai, China

W.02.01.171 **Online-Trained Adaptive OSNR Equalization in C+L-Band Optical Networks**

Paper Poster Presenter: Wu Liu, National Key Laboratory of Optical Communication Technologies and Networks, China Information Communication Technologies Group Corporation, Wuhan, China

W.02.01.172 **AI-Driven Hitless Network-Level Energy Optimization with Reliability-Aware Bandwidth Reservation Algorithm and Field Trial**

Paper Poster Presenter: Xinyu Chen, China Mobile Research Institute, Beijing, China

W.02.01.173 **Multi-Agent LLM-powered AI for Autonomous Optical Power Commissioning of OMS Links**

Paper Poster Presenter: Yujiao Hao, Huawei Technologies Canada, Kanata,

Canada

W.02.01.174 **Experimental Demonstration of Proactive Inline-EDFAs' Gain Degradation Detection and Localization in Optical Networks**
Paper Poster Presenter: Hongcheng Wu, Tsinghua University, Shenzhen, China

W.02.01.175 **Dynamic Multipoint-to-Multipoint Optical Networking with SDN-Controlled Flexible Digital Subcarrier Multiplexing**
Paper Poster Presenter: Margita Radovic, Scuola Superiore Sant'Anna, Pisa, Italy

W.02.01.176 **Beyond Performance: Explaining Non-Intuitive Deep Reinforcement Learning Actions in Elastic Optical Networks**
Paper Poster Presenter: Omran Ayoub, University of Applied Sciences and Arts of Southern Switzerland, Lugano, Switzerland
Paper Poster Presenter: Carlos Natalino, Chalmers University of Technology, Gothenburg, Sweden

W.02.01.177 **First Field-Trial Demonstration of L4 Autonomous Optical Network for Distributed AI Training Communication: An LLM-Powered Multi-AI-Agent Solution**
Paper Poster Presenter: Yihao Zhang, Shanghai Jiao Tong University, Shanghai, China

W.02.01.178 **GASTPipe: Resource-efficient Hybrid Parallelism Scheme for Distributed AI Training over Cross-DC Optical Networks**
Paper Poster Presenter: Dianxuan Fu, State Key Laboratory of Photonics and Communications, School of Information Science and Electronic Engineering, Shanghai, China

W.02.01.179 **Straggler-Aware Resource Allocation in Semi-Decentralized Federated Learning for Large-Scale Models over OTNs**
Paper Poster Presenter: Meng Lian, State Key Laboratory of Information Photonics and Optical Communications, Beijing University of Posts and Telecommunications, Beijing, China, Beijing, China

W.02.01.180 **Experimental Analysis of Adaptive ML Classifiers for Dynamic Detection of Emerging Physical-Layer Attacks**
Paper Poster Presenter: Aleksandra Knapińska, Chalmers University of Technology, Gothenburg, Sweden

Poster Session
SC 11: Quantum communications and quantum computing
Wednesday, October 1, 2025, 11:00 - 12:30

W.02.01 - SC 11: Quantum communications and quantum computing

W.02.01.181 **Classification on a Large-Scale Digital Photonic Quantum Processor**
Paper Poster Presenter: Haoran Ma, College of Information Science and Electronic Engineering, Zhejiang University, Hangzhou 310027, China, HANGZHOU, China

W.02.01.182 **39.5-Tb/s O-band Coherent Data Channels Coexistence with C-band DV-QKD and Bidirectional Service Channels**

Paper Poster Presenter: Shohei Beppu, KDDI Research, Inc., Fujimino, Japan

W.02.01.183 **Co-existence of Quantum-Key Distribution and Classical Transmission in Space-Division Multiplexed Fiber-Optic Systems: Modelling and Validation over Field-Deployed Multi-Core Fibers**

Paper Poster Presenter: Qi Wu, University of L'Aquila, L'Aquila, Italy

W.02.01.184 **SMF-Coupled Compact Ground Terminal with Advanced Filtering Towards Daylight C-Band Satellite QKD**

Paper Poster Presenter: Argiris Ntanos, National Technical University of Athens, Athens, Greece

W.02.01.185 **Modeling and Experimental Assessment of QKD Systems in Coexistence with QKD-Encrypted High-Capacity DWDM Transmission**

Paper Poster Presenter: Alessandro Gagliano, Politecnico di Milano, Milano, Italy

W.02.01.186 **Quantum Key Distribution over a 143 km Heterogeneous SMF-MCF Infrastructure with Co-existing Classical Traffic**

Paper Poster Presenter: Martin Clason, Linköping University, Linköping, Sweden

W.02.01.187 **Mode-Resolved Characterisation of Photonic Lantern-Based Quantum Links Using SPDC Photon Pairs**

Paper Poster Presenter: Rodrigo Amorim, Technical University of Denmark, Lyngby, Denmark

W.02.01.188 **Single-Photon Avalanche Diode with kHz Dark Count Rates at Room Temperature for O-Band QKD**

Paper Poster Presenter: Elisa Collin, Fraunhofer Heinrich Hertz Institute, HHI, 10587 Berlin, Germany

W.02.01.189 **Qubit-Based Clock Drift Correction for Resource-Efficient Quantum Key Distribution**

Paper Poster Presenter: Stephanie Renneke, Fraunhofer-Institut für Nachrichtentechnik, Heinrich-Hertz-Institut, Berlin, Germany

W.02.01.190 **Hexagonal Single Photon and Micro-Laser Source for Multicore Fiber Optical Link in Quantum Communication Networks**

Paper Poster Presenter: Henning Schröder, Fraunhofer IZM, Berlin, Germany

W.02.01.191 **Experimental demonstration of discretely modulated multi-user continuous-variable quantum key distribution**

Paper Poster Presenter: Runjia Zhang, Danmarks Tekniske Universitet, Lyngby, Denmark

W.02.01.192 **Tripartite continuous-variable quantum key distribution with squeezed states**

Paper Poster Presenter: Huy Nguyen, Technical University of Denmark, Kongens Lyngby, Denmark

W.02.01.193 **Field-test Quantum Key Distribution Over mixed Buried/Aerial Fiber Links with 16 km Aerial Fiber Segments**

Paper Poster Presenter: Persefoni Konteli, National and Kapodistrian

University of Athens, Athens, Greece

W.02.01.194 **High-Rate Composable Continuous-Variable Quantum Key Distribution using Discrete Modulation**
Paper Poster Presenter: Lu Fan, Beijing University of Posts and Telecommunications, Beijing, China

W.02.01.195 **Intelligent Maintenance Planning for Enhanced SKR Availability in Deployed Long-distance QKD Systems**
Paper Poster Presenter: Seyed Morteza Ahmadian, Chalmers University of Technology, Gothenburg, Sweden

W.02.01.196 **Utilizing Degeneracy in a Few-Mode Fiber to Demonstrate Entanglement Distribution**
Paper Poster Presenter: Tasbiha Rafiq, Fraunhofer Heinrich-Hertz Institute, Berlin, Germany

Special Events
Multiple Topics
Wednesday, October 1, 2025, 12:30 - 14:00 Plenary (Auditoria 10+11+12)

W.02.01 - Women in Photonics Lunch (in Treehouse)

► **Short description:** Join us for a dynamic workshop spotlighting the ingenious contributions of women in optics, photonics, and optical networks. This event features inspiring talks and a panel discussion with leading female researchers and innovators from around the globe. Gain firsthand insights into their scientific journeys, career-defining moments, and visionary outlooks for the next generation of women in STEM.
This workshop provides an inclusive platform for meaningful dialogue, together with valuable lessons on leadership, equity, and navigating the workplace.
The workshop is open to all ECOC attendees. A complimentary lunch, sponsored by OPTICA, will follow the session—don't miss this opportunity to connect and be inspired!

Speakers:
• **Aleksandra Kaszubowska-Anandarajah**, Trinity College Dublin, Ireland
• **Qian Li**, Peking University Shenzhen Graduate School, China
• **Christina Lim**, The University of Melbourne, Australia
• **Aleksandra Boskovica**, Corning Inc., USA

Chair: Anjali Sharma, University of Malta, Msida, Malta
Chair: Carmen Mas Machuca, Universität der Bundeswehr München, Technical University of Munich (TUM), Neubiberg, Germany
Workshop Speaker: Aleksandra Kaszubowska-Anandarajah, Trinity College, Dublin, Ireland
Workshop Speaker: Qian Li, Peking University Shenzhen Graduate School, Shenzhen, China
Workshop Speaker: Christina Lim, The University of Melbourne, Melbourne, Australia
Workshop Speaker: Aleksandra Boskovica, Corning Inc, Corning, New York, United States

.
Wednesday, October 1, 2025, 12:30 - 14:00

Lunch

Paper Session
SC 10: Control and management of optical networks
Wednesday, October 1, 2025, 14:00 - 15:30 Auditorium 10

W.03.01 - Reliable and secure optical networks

Chair: Marija Furdek Prekratic, Chalmers University of Technology – Associate Professor, Optical Networks Unit, Dept. of Electrical Engineering, Gothenburg, Sweden

W.03.01.1	**Cloud-Carrier Cooperation for Efficient and Reliable Optical Networks** Invited Speaker: Sifat Ferdousi, University of California, Davis – Department of Electrical and Computer Engineering, Davis, CA, United States	14:00 - 14:30
W.03.01.2	**SDN-enabled Flexible Quantum Channel Allocation for CV-QKD Coexistence with Programmable Sliceable Transceivers** Paper Oral Upgrade Presenter: Michela Svaluto Moreolo, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC/CERCA), Castelldefels, Spain	14:30 - 15:00
W.03.01.3	**Optical Transport Networks Enabling Security Features in 6G Systems** Paper Oral Presenter: Anna Tzanakaki, National and Kapodistrian University of Athens, Athens, Greece	15:00 - 15:15
W.03.01.4	**Resilience-Aware Dynamic Routing and Resource Assignment in WDM over SDM and WDM over WBDM Optical Networks** Paper Oral Presenter: Varsha Lohani, Centre Tecnològic de Telecomunicacions de Catalunya, Castelldefels, Spain	15:15 - 15:30

Paper Session
SC 2: Discrete photonic devices and technologies
Wednesday, October 1, 2025, 14:00 - 15:30 Auditorium 11

W.03.02 - Lasers and Combs

Chair: Romain Brenot, Huawei Technologies France, Optical Communication Technology Lab (Huawei Paris Research Centre), Boulogne-Billancourt, France

W.03.02.1	**Efficient Uncooled High-Power 1.31 µm DFB Laser Diode for Co-Packaged Optics** Paper Oral Presenter: Mikhail Buyalo, Innolume GmbH, Dortmund, Germany	14:00 - 14:15
W.03.02.2	**Scalable Multi-band Narrow Linewidth Operation by a Single-chip Tunable Laser with InP/Si Heterogeneous Integration** Paper Oral Presenter: Takuo Hiratani, Photonics Electronics Technology Research Association, Tokyo, Japan	14:15 - 14:30
W.03.02.3	**Ultrafast Tunable Photonic Integrated Pockels Extended-DBR Laser** Paper Oral Presenter: Anat Siddharth, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland	14:30 - 14:45
W.03.02.4	**Micro-transfer Printed Widely Tunable Membrane Laser on a SiN Platform** Paper Oral Presenter: Takuma Aihara, NTT Corporation, Atsugi-shi, Japan	14:45 - 15:00
W.03.02.5	**Single Soliton Comb Generation in SiC Microresonators via Thermal Compensation using Obliquely Polarized Pumping**	15:00 - 15:15

Paper Oral Presenter: Haoyang Tan, Technical University of Denmark, Kongens Lyngby, Denmark

W.03.02.6 **Broadband Microcomb Sources for Ultra-Dense Optical Data Transmission** 15:15 - 15:30

Paper Oral Presenter: Yi Zheng, Technical University of Denmark, Kongens Lyngby, Denmark

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Wednesday, October 1, 2025, 14:00 - 15:30 Auditorium 12

W.03.03 - Programmable and Tunable Photonics

Chair: Niels Quack, University of Sydney – School of Aerospace, Mechanical and Mechatronic Engineering, Sydney, Australia
Chair: Keijiro Suzuki, National Institute of Advanced Industrial Science and Technology (AIST), Electronics and Photonics Research Institute, Tsukuba, Japan

W.03.03.1 **A New Topology for Programmable Photonics with Large FSR Based on Low -Power Silicon Photonic MEMS** 14:00 - 14:15

Paper Oral Presenter: Ye Lu, State Key Laboratory of Extreme Photonics and Instrumentation, Center for Optical & Electromagnetic Research, College of Optical Science and Engineering, International Research Center for Advanced Photonics, Zhejiang University, Zijingang Campus, Hangzhou, China

W.03.03.2 **Four-state Optical Switches Fabricated by Patterned Integrations of Magneto-optical Materials** 14:15 - 14:30

Paper Oral Presenter: Shuyuan Liu, Zhangjiang Laboratory, Shanghai, China

W.03.03.3 **Photonic Integrated Processors for Free-Space Optical Communications and Sensing** 14:30 - 15:00

Invited Speaker: Francesco Morichetti, Politecnico di Milano, Milano, Italy
Invited Speaker: Andres Ivan Martinez, Politecnico di Milano, Milano, Italy

W.03.03.4 **Ultralow-Loss Silicon Optical Tunable Delay Lines Using Ridge Waveguides** 15:00 - 15:15

Paper Oral Presenter: Qingrui Yao, Centre for Optical and Electromagnetic Research State Key Laboratory for Modern Optical Instrumentation, Zhejiang University, Hangzhou, China

W.03.03.5 **Widely Tunable Silicon Photonics Optoelectronic Oscillator** 15:15 - 15:30

Paper Oral Presenter: Muhammad Imran, Scuola Superiore Sant'Anna, Pisa, Italy

Symposia
Multiple Topics
Wednesday, October 1, 2025, 14:00 - 17:30 Auditorium 15

W.03.04 - Celebrating Nobel Prize in Physics - merging machine learning and photonics

Join us for a special symposium bringing together leading experts to celebrate the 2024 Nobel Prize in Physics and explore the powerful intersections of machine learning and photonics.
From quantum and optical communication systems to nonlinear fibre optics, photonic computing, and machine learning–aided signal processing, the symposium highlights new insights, experiments, and approaches at the crossroads of light, information, and intelligence.

Symposium Organiser: Darko Zibar, Technical University of Denmark (DTU), Kongens Lyngby, Denmark
Symposium Organiser: Sergei Turitsyn, Aston University, Birmingham, United Kingdom

W.03.04.1	**The 2024 Nobel Prize in Physics** Invited Symposium Speaker: Göran Johansson, Nobel Prize Committee member, Chalmers University of Technology, Gothenburg, Sweden	14:00 - 14:30
W.03.04.2	**Introduction to the symposium: current status on machine learning for classical and quantum optical communication systems, and photonic sub-systems** Invited Symposium Speaker: Darko Zibar, Technical University of Denmark (DTU), Kongens Lyngby, Denmark	14:30 - 14:40
W.03.04.3	**New insights, new experiments, and new approaches to computation: the many synergies between machine learning and nonlinear fibre optics** Invited Symposium Speaker: John Michael Dudley, Université Marie et Louis Pasteur and Institut Universitaire de France, Besançon, France	14:40 - 15:15
	Break	15:15 - 15:45
W.03.04.4	**Recent advances on machine learning-aided DSP for short-reach and long-haul optical communications** Invited Symposium Speaker: Laurent Schmalen, Karlsruhe Institute ofTechnology (KIT) – Co-Head, Communications Engineering Laboratory (CEL), Karlsruhe, Germany	15:45 - 16:20
W.03.04.5	**Photonic linear computing: Principles, systems and information theory aspects** Invited Symposium Speaker: José Capmany Francoy, Polytechnic University of Valencia (Universitat Politècnica de València), ITEAM / Photonics Research Labs, Valencia, Spain	16:20 - 16:55
W.03.04.6	**On the possibility of a virtuous cycle of light, information, and intelligence** Invited Symposium Speaker: Logan Wright, Yale University — School of Engineering and Applied Science, New Haven, Connecticut, United States	16:55 - 17:30

Paper Session
SC 5: Optical transmission systems
Wednesday, October 1, 2025, 14:00 - 15:30 B3 M1-4

W.03.05 - HCF and wideband systems

Chair: Tomoyuki Kato, Fujitsu Laboratories Ltd. – Senior Researcher, Optical Communications, Kawasaki, Japan

W.03.05.1	**Ultra-wideband S+C+L Transmission of 137.6 Tb/s over 40.4 km of Support Tube Hollow Core Fiber using Bismuth Doped Fiber Amplifiers and Constellation Shaping** Paper Oral Presenter: Ruby Stella Bravo Ospina, Nokia Bell Labs, Massy, France	14:00 - 14:15
W.03.05.2	**Characteristics and Impacts of CO_2 Absorption Effects in Hollow Core Fiber (HCF) Transmission Systems** Paper Oral Presenter: Sai Chen, Alibaba Cloud, Hangzhou, China	14:15 - 14:30
W.03.05.3	**211.7-Gbit/s High-Order PAM Transmission over 11.1 km of Hollow-Core NANF in C-band** Paper Oral Presenter: Suttikarn Wantee, Optoelectronics Research Centre, University of Southampton, Southampton, United Kingdom	14:30 - 14:45
W.03.05.4	**6 × 2.3 Tb/s Net Rate Transmission over 20.2 km of Ultra-low loss Hollow Core Fiber Using DP-16QAM Signalling and High Power Doped Fiber Amplifier** Paper Oral Presenter: Haïk Mardoyan, NOKIA BELL LABS, MASSY, France	14:45 - 15:00
W.03.05.5	**1-Tb/s/λ Transmission over Record 10714-km AR-HCF** Paper Oral Presenter: Dawei Ge, China Mobile Research Institute, Beijing, China	15:00 - 15:15
W.03.05.6	**Measurement and Analysis of the Power Consumption of Hybrid-Amplified SCL-band Links** Paper Oral Presenter: Ronit Sohanpal, Optical Networks Group, University College London (UCL), London, United Kingdom	15:15 - 15:30

Paper Session
SC 6: Architecture, modelling and performance of optical networks
Wednesday, October 1, 2025, 14:00 - 15:30 B3 M5-M8

W.03.06 - Longitudinal Power Profile Monitoring II

Chair: Camille Delezoide, Nokia Bell Labs – Research Engineer, Optical/Data-Driven Networking, Paris-Saclay (Nozay), France

W.03.06.1	**Optical Network Tomography over Live Production Network in Multi-Domain Environment** Paper Oral Upgrade Presenter: Takeo Sasai, NTT, Yokosuka, Japan	14:00 - 14:30
W.03.06.2	**Spectrally-Sliced Longitudinal Power Profile Estimation** Paper Oral Presenter: Tarek Eldahrawy, Huawei Technologies France, Paris Research Center, Boulogne-Billancourt, France	14:30 - 14:45
W.03.06.3	**Pilot-tone Enabled QoT Awareness and Anomaly Localization in Dynamic Optical Transport Networks** Paper Oral Presenter: Yang Lan, Huawei Technologies Canada, Ottawa,	14:45 - 15:00

Canada

W.03.06.4 **Proactive Sensing of Environmental Events through Optical Data Networks: a Path to Intelligent Resilience** 15:00 - 15:30
Invited Speaker: Cecilia Clivati, Istituto Nazionale di Ricerca Metrologica - INRIM, Turin, Italy

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Wednesday, October 1, 2025, 14:00 - 15:15 B4 M1-4

W.03.07 - Novel Passive Optical Networks

Chair: Derek Nesset, Huawei UK, Ipswich, United Kingdom

W.03.07.1 **CD Pre-Compensated Tx with ODB Modulation and Direct Detection Rx for VHSP Downstream** 14:00 - 14:15
Paper Oral Presenter: Lorenzo Andrenacci, Politecnico di Torino, Torino, Italy

W.03.07.2 **Optical Frequency Excursion in the Context of VHSP-IMDD** 14:15 - 14:30
Paper Oral Presenter: Gaël Simon, Orange Innovation, Lannion, France

W.03.07.3 **Digital vs Analog Equalization in FEC supported 50G-PON** 14:30 - 14:45
Paper Oral Presenter: Gaël Simon, Orange Innovation, Lannion, France

W.03.07.4 **Coherent Point-to-Point Overlays over PON Using Off-the-Shelf Single-Laser Single-Carrier Pluggable Transceivers** 14:45 - 15:00
Paper Oral Presenter: Kovendhan Vijayan, Nokia Bell Labs, Murray Hill, United States

W.03.07.5 **Evaluation of 50G-PON FEC Tolerance to Receiver Impairments** 15:00 - 15:15
Paper Oral Presenter: Lucas Inglés, IMT Atlantique, Plouzané, France

Paper Session
SC 9: Free-space optics and optical wireless technologies
Wednesday, October 1, 2025, 14:00 - 15:30 B4 M5-8

W.03.08 - Satellite Communication

Chair: Hidenori Takahashi, KDDI Research, Inc. (Photonics Innovation Laboratory, Advanced Technology Laboratories), Fujimino-shi (Saitama), Japan

W.03.08.1 **Building an Optical Ground Station for GEO satellites from scratch: what you need to know** 14:00 - 15:00
Invited Tutorial Speaker: Géraldine Artaud, Centre National d'Études Spatiales (CNES), Paris, France

W.03.08.2 **Ultra-Low Crosstalk FSO Circulator for Full C-band WDM Bidirectional Satellite Communication** 15:00 - 15:15
Paper Oral Presenter: Takashi Kan, KDDI Research, Inc., Fujimino, Japan

W.03.08.3 **Coherent Free-space Optical Communication at the C-band using InP-based Photonic-crystal Surface-emitting Laser** 15:15 - 15:30
Paper Oral Presenter: Shota Ishimura, KDDI Research, Inc., Fujimino, Japan

.
Wednesday, October 1, 2025, 15:30 - 16:00
Coffee break

Paper Session
SC 10: Control and management of optical networks
Wednesday, October 1, 2025, 16:00 - 17:30 — Auditorium 10

W.04.01 - Open optical networks

Chair: Nguyen-Cac Tran, Genexis B.V., Eindhoven, Netherlands

W.04.01.1	**Demonstration of Multi-Provider Network and Cloud Service Provisioning with Blockchain Smart Contracts** Paper Oral Presenter: Jesse E. Simsarian, Nokia Bell Labs, Murray Hill, United States Paper Oral Presenter: Sarvesh Bidkar, Nokia Bell Labs, Murray Hill, United States	16:00 - 16:15
W.04.01.2	**PON Physical Twin: Enabling Third-party Research on FTTH Optimization with Open Datasets** Paper Oral Presenter: Lucas Inglés, IMT Atlantique, Brest, France	16:15 - 16:30
W.04.01.3	**Leveraging Shared Data and Models for ML-Based QoT Estimation: Toward Standardized and Generalizable Models** Paper Oral Presenter: Hassan Akbari, Fraunhofer HHI, Berlin, Germany	16:30 - 16:45
W.04.01.4	**Softwarization of 320 10G-EPON OLTs Serving 40,960 ONUs with Total 2.78-Tb/s Throughput for Fully Virtualized Central Offices** Paper Oral Presenter: Takahiro Suzuki, NTT Corporation, Yokosuka, Japan	16:45 - 17:00
W.04.01.5	**Vendor Neutrality Drivers and Hindrances - Optical Spectrum as a Service in Disaggregated and Open Networks** Invited Speaker: Kaida Kaeval, Tallinn University of Technology, Tallinn, Estonia	17:00 - 17:30

Paper Session
SC 2: Discrete photonic devices and technologies
Wednesday, October 1, 2025, 16:00 - 17:15 — Auditorium 11

W.04.02 - Passive Components and Photodiodes

Chair: Despoina Petousi, ADTRAN, Berlin, Germany

W.04.02.1	**Integrated Multi-Band Photonic Filter Based on MRR–SSG for Tunable Frequency Hopping** Paper Oral Presenter: Simeng Zhu, University of Glasgow, Glasgow, United Kingdom	16:00 - 16:15
W.04.02.2	**Ultra-Compact Leaky ReLU Nonlinear Function on IMOS** Paper Oral Presenter: Antonio Lechiara, Technische Universiteit Eindhoven, Eindhoven, Netherlands	16:15 - 16:30
W.04.02.3	**Inverse design of silicon nitride waveguide bend** Paper Oral Presenter: Keisuke Kojima, Boston Quantum Photonics, Weston, MA, United States	16:30 - 16:45

W.04.02.4	**InP-Based Polarization Independent LAN WDM Photodetector PIC** Paper Oral Presenter: Alexander Schindler, Fraunhofer Heinrich-Hertz-Institute, Berlin, Germany	16:45 - 17:00
W.04.02.5	**Comparative Bandwidth Response of GaInAs and GaInAsSb Uni-Traveling Carrier Photodiodes (UTC-PDs)** Paper Oral Presenter: Amirmohammad miran zadeh, ETH zurich, Zurich, Switzerland	17:00 - 17:15

Paper Session
SC 11: Quantum communications and quantum computing
Wednesday, October 1, 2025, 16:00 - 17:15 — Auditorium 12

W.04.03 - Advanced Quantum Communication Networks

Chair: Konrad Banaszek, University of Warsaw – Centre for Quantum Optical Technologies, Centre of New Technologies, Warsaw, Poland

W.04.03.1	**Integrated on-demand single photon emitters for Quantum Computing and Communication** Invited Speaker: Peter Lodahl, University of Copenhagen – Niels Bohr Institute, Quantum Optics and Director, Hybrid Quantum Networks (Hy-Q) Center, Copenhagen, Denmark	16:00 - 16:30
W.04.03.2	**Toward Quantum Data Centers: Noise Evaluation of Fiber-Based Interconnects through Distributed Algorithm Emulation** Paper Oral Presenter: Seyed Navid Elyasi, Chalmers University of Technology, Gothenburg, Sweden	16:30 - 16:45
W.04.03.3	**Leveraging a Commercial Source for Metropolitan-scale Entanglement-based Quantum Key Distribution** Paper Oral Presenter: Tomi Getselev, Fraunhofer Heinrich-Hertz-Institut, Berlin, Germany	16:45 - 17:00
W.04.03.4	**Quantum Entanglement Distribution Coexisting with Classical Communication over 18-km Hollow-Core Fibre Links** Paper Oral Presenter: Sheng Liu, China Mobile Research Institute, Beijing, China	17:00 - 17:15

Paper Session
SC 8: Sensing and microwave photonics
Wednesday, October 1, 2025, 16:00 - 17:30 — B3 M1-4

W.04.05 - Short haul DAS and photonic-aided links

Chair: Miguel Drummond, Instituto de Telecomunicações – Aveiro, specifically part of the Optical Sensors and Integrated Photonics group, Aveiro, Portugal

W.04.05.1	**0.25 ps RMS Time-frequency Synchronized WDM Fronthaul with 16.9 Tb/s Rate and 1-sample-per-symbol Coherent Detection** Paper Oral Presenter: Yixiao Zhu, State Key Laboratory of Photonics and Communications, Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai, China	16:00 - 16:15
W.04.05.2	**Field Trial of Distributed Acoustic Sensing in Point-to-Multipoint Topology Passive Optical Networks with Co-Propagating**	16:15 - 16:30

Commercial 25G-PON

Paper Oral Presenter: Michael Straub, Nokia, Stuttgart, Germany

W.04.05.3 **Field Demonstration of Full-Photonic Assisted Ultra-Reliable Hybrid FSO/MMW Transmission over 4.3 km based on Single Optical Coherent Receiver** 16:30 - 16:45

Paper Oral Presenter: Yinjun Liu, Key Laboratory for Information Science of Electromagnetic Waves (MoE), Fudan University, 200433, Shanghai, China., Shanghai, China

W.04.05.4 **Dual Comb Distributed Acoustic Sensing for PON Multi-Branch Monitoring at the Remote Node** 16:45 - 17:00

Paper Oral Presenter: Conor Russell, Tyndall National Institute, Cork, Ireland

W.04.05.5 **Photonics for Communications Satellites: a Perspective from Thales Alenia Space** 17:00 - 17:30

Invited Speaker: Michel Sotom, Thales Alenia Space, Toulouse, France

Paper Session
SC 4: Signal processing for optical communication and computing
Wednesday, October 1, 2025, 16:00 - 17:30 B3 M5-M8

W.04.06 - Optical signal processing

Chair: Élie Awwad, IP Paris, Paris, France

W.04.06.1 **Ultra-Broadband Photonic-Electronic Signal Processing Using Optical Frequency Combs** 16:00 - 17:00

Invited Tutorial Speaker: Christian Koos, Karlsruhe Institute of Technology (KIT), Institutes of Photonics and Quantum Electronics (IPQ) and Microstructure Technology (IMT), Karlsruhe, Germany

W.04.06.2 **Hybrid Optoelectronic Neuron for General Silicon Photonic Neural Networks** 17:00 - 17:15

Paper Oral Presenter: Jinlong Xiang, Shanghai Jiao Tong University, Shanghai, China

W.04.06.3 **Computation Stability Tracking Using Data Anchors for Fiber Rayleigh-based Nonlinear Random Projection System** 17:15 - 17:30

Paper Oral Presenter: Yue Tian, NEC Laboratories America, Inc., Princeton, United States

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Wednesday, October 1, 2025, 16:00 - 17:30 B4 M1-4

W.04.07 - Optical short-reach interconnects

Chair: Oded Raz, Eindhoven University of Technology (TU/e), Eindhoven, Netherlands

W.04.07.1 **The path of dual-polarization IM-DD high-speed TRx for intra-DC and optical access applications** 16:00 - 16:30

Invited Speaker: Christopher R. Doerr, loe Semiconductor, Middletown, New Jersey, United States

W.04.07.2 **Silicon Photonic Integrated Carrier-Extracted Self-Coherent** 16:30 - 16:45

	Detection Receiver based on a second-order CROW filter for Short-Reach Interconnects Paper Oral Presenter: Haojie Zhu, Westlake University, Hangzhou, China	
W.04.07.3	**Adaptive Removal of Multipath Interference in Short Reach 112 GBd PAM-4 IM/DD Systems** Paper Oral Presenter: Silas Oettinghaus, Kiel University, Kiel, Germany	16:45 - 17:00
W.04.07.4	**Net 400-Gb/s/lane O-band IM-DD Transmission Using 182-GBd PAM-6 with KP4+SFEC over 20-km SSMF** Paper Oral Presenter: Hiroki Taniguchi, NTT Network Innovation Laboratories, Yokosuka, Japan	17:00 - 17:15
W.04.07.5	**O-Band Plasmonic MZM enabling Single Carrier net 400 Gbit/s IM/DD over 1 km Fiber** Paper Oral Presenter: Laurenz Kulmer, ETH Zurich, Zurich, Switzerland	17:15 - 17:30

Paper Session
SC 9: Free-space optics and optical wireless technologies
Wednesday, October 1, 2025, 16:00 - 17:30 B4 M5-8

W.04.08 - Short range OWC

Chair: Eduward Tangdiongga, Eindhoven University of Technology, Electro-Optical Communication / Center for Wireless Technology, Eindhoven, Netherlands

W.04.08.1	**Attenuation-Resilient 1-Gbit/s OOK Underwater Free-Space Optical Communications Using a Longitudinally Structured Multi-kz Bessel Beam** Paper Oral Presenter: Wing Ko, University of Southern California, Los Angeles, United States	16:00 - 16:15
W.04.08.2	**Spectrum-Woven Flat-Narrow Twin Beams with Time-Domain Adaptation for Underwater Optical Wireless Communication** Paper Oral Presenter: Kiichiro Kuwahara, Kagawa University, Takamatsu-shi, Kagawa 761-0396, Japan	16:15 - 16:30
W.04.08.3	**Ultra-High Capacity Optical Wireless Communication Enabled by Steered Infrared Beams** Invited Speaker: Songyuan Hu, Pengcheng Laboratory, Shenzhen, China Invited Speaker: Chao Li, Pengcheng Laboratory, Shenzhen, China	16:30 - 17:00
W.04.08.4	**Optical Wireless Transmission of 8 Gbps Using Array of Large Grating Couplers on Silicon Photonics for Light Collection** Paper Oral Presenter: Mikołaj Wolny, Eindhoven University of Technology, Eindhoven, Netherlands	17:00 - 17:15
W.04.08.5	**Short Range Optical Wireless Communication at 67.8\,Gbit/s using a Multiaperture VCSEL** Paper Oral Presenter: Matthias Koepp, Fraunhofer HHI, Berlin, Germany	17:15 - 17:30

Thursday, October 2, 2025

Paper Session
SC 1: Novel fibres, fibre devices and amplifiers
Thursday, October 2, 2025, 09:00 - 10:30 B1 M4

Th.01.01 - Amplifiers for Special Applications

Chair: Kazuhide Nakajima, NTT Access Network Service Systems Laboratories, Tsukuba, Japan

Th.01.01.1	**High power amplifiers for free-space communications** Invited Speaker: Jeff Nicholson, Lightera, Somerset, United States	09:00 - 09:30
Th.01.01.2	**Performance of PM Holmium Doped Fiber Amplifiers with Hybrid Pumping at 1150nm and 1860nm** Paper Oral Presenter: Jean-Marc Delavaux, Cybel LLC, Bethlehem, United States	09:30 - 09:45
Th.01.01.3	**Distributed Parametric Amplifier in Standard Single-Mode Fibre with Gain up to 44 dB and bandwidth up to 30 nm in O-band** Paper Oral Presenter: Mariia Bastamova, Aston University, Birmingham, United Kingdom	09:45 - 10:00
Th.01.01.4	**Amplifier Technologies for Unrepeatered Systems** Invited Speaker: Hans BISSESSUR, Alcatel Submarine Networks, Les Ulis, France	10:00 - 10:30

Paper Session
SC 2: Discrete photonic devices and technologies
Thursday, October 2, 2025, 09:00 - 10:30 B2 M1-4

Th.01.02 - Amplifiers and Heterogeneous Integration

Chair: Seppo Honkanen, HyCom Core (CTO), Helsinki, Finland

Th.01.02.1	**High-gain Suspended Silicon Nitride Waveguide Amplifiers Enabled by Double-sided Er^{3+}:Al_2O_3 Coating** Paper Oral Presenter: Xiaoyan Zhou, Tianjin University, Tianjin, China	09:00 - 09:15
Th.01.02.2	**Heterogeneously Integrated III-V/Si DFB Laser Arrays for Dense Wavelength Division Multiplexing** Paper Oral Presenter: Torrey Thiessen, SCINTIL Photonics, Grenoble, France	09:15 - 09:30
Th.01.02.3	**Er Doped Photonic Integrated Circuits: From On-Chip Amplifiers, Tunable Low-Noise Lasers to Mode-Locked fs Sources** Invited Speaker: Tobias Kippenberg, Laboratory of Photonics and Quantum Measurements, Lausanne, Switzerland	09:30 - 10:00
Th.01.02.4	**Multi-functional Heterogeneously Integrated TFLN on Silicon Photonics Platform Enabling 540 Gbps/lane IMDD Transmission with 0.9 Vpp Driving Voltage** Paper Oral Upgrade Presenter: Jialin Jiang, Huawei Technologies co. Ltd, Wuhan, China	10:00 - 10:30

Paper Session
SC 4: Signal processing for optical communication and computing
Thursday, October 2, 2025, 09:00 - 10:30 B3 M1-4

Th.01.04 - Machine Learning aided DSP and Optical Link Monitoring

Chair: Fan Zhang, Peking University, School of Electronics, Department of Electronics; Institute of Information and Communication Technology; State Key Laboratory of Advanced Optical Communication Systems and Networks , Beijing, China

Th.01.04.1	**Novel Phase-Noise-Tolerant Variational-Autoencoder-Based Equalization Suitable for Space-Division-Multiplexed Transmission** Paper Oral Presenter: Vincent Lauinger, Karlsruhe Institute of Technology, Karlsruhe, Germany	09:00 - 09:15
Th.01.04.2	**Experimental Validation of Machine Learning-Aided Nonlinearity-Tailored Carrier Phase Estimation for Subcarrier Multiplexing Systems** Paper Oral Presenter: Ruben Luis, NICT, Tokyo, Japan	09:15 - 09:30
Th.01.04.3	**Advancing Intelligent Fiber Optic Link Monitoring: Innovations, Challenges, and Future Directions** Invited Speaker: Xian Zhou, University of Science and Technology Beijing, Beijing, China	09:30 - 10:00
Th.01.04.4	**Spatially resolved fiber link monitoring based on receiver DSP data** Invited Speaker: Johannes Fischer, Heinrich Hertz Institut, Berlin, Germany	10:00 - 10:30

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Thursday, October 2, 2025, 09:00 - 10:15

Th.01.03 - Integration of novel materials

Chair: Robert Halir, Universidad de Málaga, Department of Communications Engineering, Málaga, Spain
Chair: Anna Tzanakaki, National and Kapodistrian University of Athens, Athens, Greece

Th.01.03.1	**Graphene-based Athermal Optical Transmitter** Paper Oral Presenter: Zheng Wang, State Key Laboratory of Materials for Integrated Circuits, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai, China	09:00 - 09:15
Th.01.03.2	**Low Chirp and trimmable Push-pull Thin-Film Lead Zirconate Titanate Ring modulator** Paper Oral Presenter: Tao Shu, State Key Laboratory for Extreme Photonics and Instrumentation, College of Optical Science and Engineering, International Research Center for Advanced Photonics, HANGZHOU, China	09:15 - 09:30
Th.01.03.3	**A photonic integrated Erbium DBR laser via scalable manufacturing** Paper Oral Presenter: Grigory Lihachev, Swiss Federal Technology Institute of Lausanne, Lausanne, Switzerland	09:30 - 09:45
Th.01.03.4	**Design and Integration of a Two-Port C+L High Performance Amplifier in a Module** Paper Oral Presenter: Sheherazade Lamkadmi Azouigui, HUAWEI	09:45 - 10:00

Technologies France, Boulogne-Billancourt, France

Th.01.03.5	**A Si Photonic WDM Receiver with Micro-Ring Resonator Crosstalk Cancellation** Paper Oral Presenter: Seung-Jae Yang, Yonsei University, South Korea, Seoul, Korea, Republic of	10:00 - 10:15

Paper Session
SC 6: Architecture, modelling and performance of optical networks
Thursday, October 2, 2025, 09:00 - 10:30 B3 M5-M8

Th.01.05 - Digital Twins and Photonics Networks

Chair: Vittorio Curri, Politecnico di Torino – Department of Electronics and Telecommunications, Turin, Italy

Th.01.05.1	**Leveraging Digital Twins for All-Photonics Networks-as-a-Service: Enabling Innovation and Efficiency (Tutorial)** Invited Tutorial Speaker: Hideki Nishizawa, NTT, Kanagawa, Japan	09:00 - 10:00
Th.01.05.2	**Combining Machine Learning and the GN Model for Fast NLI Prediction in Dispersion-Managed Links** Paper Oral Presenter: Emanuele Virgillito, Politecnico di Torino, Torino, Italy	10:00 - 10:15
Th.01.05.3	**Assessment of Energy-Saving Modes Based on Real User Traffic in Passive Optical Networks** Paper Oral Presenter: Mirco Börner, Technische Hochschule Mittelhessen, Giessen, Germany	10:15 - 10:30

Paper Session
SC 7: Access, indoor and short-reach systems for data centres and mobile networks
Thursday, October 2, 2025, 09:00 - 10:15 B4 M5-8

Th.01.07 - Fronthaul and cloud computing

Chair: Stefan Dahlfort, Ericsson, Kista, Sweden

Th.01.07.1	**Analog Optical Computing: Toward Sustainable Machine learn- ing models and Beyond** Invited Speaker: Francesca Parmigiani, Microsoft Research Cambridge, Cambridge, United Kingdom	09:00 - 09:30
Th.01.07.2	**Nanosecond Electro-optic Switching with Time Synchronisation for Fronthaul TSN Applications** Paper Oral Presenter: RUI MA, University of Cambridge, Cambridge, United Kingdom	09:30 - 09:45
Th.01.07.3	**C-band 2dir.×40λ×224 Gb/s Co-wavelength Bidirectional IM-DD Fronthaul over 10 km Low-latency Hollow-core Fiber** Paper Oral Presenter: Mingqing Zuo, China Mobile Research Institute, Beijing, China	09:45 - 10:00
Th.01.07.4	**Experimental Demonstration of Demand-Driven PON Configuration for Fixed-Mobile Convergence** Paper Oral Presenter: Lucas Inglés, IMT Atlantique, Brest, France	10:00 - 10:15

Paper Session
SC 4: Signal processing for optical communication and computing
Thursday, October 2, 2025, 09:00 - 10:30 B5 M1-4

Th.01.08 - DSP for coherent systems 1

Chair: Andrea Carnio, Nokia Corporation, ASIC Design Engineer, part of Nokia's optical communications, Vimercate, Italy

Th.01.08.1	**Single-carrier versus multi-carrier system design for next generation pluggables: a comparative analysis of pros and cons** Invited Speaker: Ahmad Awadalla, Cisco Systems, Inc., optical systems design and development, Ottawa, Canada	09:00 - 09:30
Th.01.08.2	**Impact of Equalizer-Enhanced Phase Noise for Coherent Pluggables** Invited Speaker: Hai Xu, Marvell Semiconductor Inc., Santa Clara, United States	09:30 - 10:00
Th.01.08.3	**Digital Subcarrier-Based Synthesis for On-Site Transceiver Calibration with Separate Tx/Rx Frequency Responses** Paper Oral Presenter: Masaki Sato, NEC Corporation, Kawasaki, Japan	10:00 - 10:15
Th.01.08.4	**Low-complexity Clock Recovery Scheme for Ultra-high-speed Digital Subcarrier Multiplexing Systems** Paper Oral Presenter: Chengbo Li, ZTE corporation, Shenzhen, China	10:15 - 10:30

Paper Session
SC 11: Quantum communications and quantum computing
Thursday, October 2, 2025, 09:30 - 10:30 B4 M1-4

Th.01.06 - Devices for Quantum Communications and Interconnections

Chair: Takeshi Umeki, NTT Research/Device Tech and Network Innovation Laboratories – Senior Distinguished Researcher, Tokyo, Japan

Th.01.06.1	**Polarization-independent 2.5-GHz Four-encoding / Two-decoy State BB84 QKD Systems Using Gated InGaAs SPADs** Paper Oral Upgrade Presenter: Hiroki Kawahara, NEC Corporation, Kawasaki, Japan	09:30 - 10:00
Th.01.06.2	**Highly Efficient Homodyne Cryogenic Readout Link Based on a Silicon-Organic Hybrid (SOH) Phase Modulator** Paper Oral Presenter: Adrian Schwarzenberger, Karlsruhe Institute of Technology, Karlsruhe, Germany	10:00 - 10:15
Th.01.06.3	**Branched DPS-QKD Employing a WDM-Compatible Silicon Micro-Ring Resonator as Shared Quantum State Analyser** Paper Oral Presenter: Florian Honz, AIT Austrian Institute of Technology, Vienna, Austria	10:15 - 10:30

.
Thursday, October 2, 2025, 10:30 - 11:00

Coffee break

Paper Session
SC 10: Control and management of optical networks
Thursday, October 2, 2025, 11:00 - 12:00 B1 M4

Th.02.01 - Multi-band optical networks

Chair: Yvan Pointurier, Huawei, Boulogne-Billancourt, France

Th.02.01.1	**LP-VAE: Real-Time and Parameters' Uncertainty-tolerant Launch-Power Optimization for UWB ISRS-Impaired Optical Links** Paper Oral Presenter: Zhuojun Cai, Tsinghua Shenzhen International Graduate School, Tsinghua University, Shenzhen, China	11:00 - 11:15
Th.02.01.2	**Generalizability of ML-Based Classification of State of Polarization Signatures Across Different Bands and Links** Paper Oral Presenter: Leyla Sadighi, Trinity College Dublin, Dublin, Ireland	11:15 - 11:30
Th.02.01.3	**Best Planning Practices for Ultra-High-Capacity Networks based on Multi-Band over Space Division Multiplexing** Invited Speaker: Farhad Arpanaei, University Carlos III of Madrid, Leganes, Spain	11:30 - 12:00

Paper Session
SC 3: Photonic integrated circuits, assemblies and packaging
Thursday, October 2, 2025, 11:00 - 12:15 B2 M1-4

Th.02.02 - Optical packaging

Chair: Chin-Hui Chen, NVIDIA – Silicon Photonics / Optical Connectivity, Santa Clara, CA, United States
Chair: Francesco Da Ros, Technical University of Denmark (DTU), Kongens Lyngby, Denmark

Th.02.02.1	**Advanced Packaging for Pluggable Transceivers at 800G and Beyond** Invited Speaker: Donald Pavinski, Nokia Bell Labs, Allentown, United States	11:00 - 11:30
Th.02.02.2	**High-Performance Heterogeneously Integrated Coherent Optical Sub-Assembly Enabling 130 Gbaud DP-QPSK Transmission** Paper Oral Presenter: Quan Cao, Wuhan Fisilink Microelectronics Technology Co., Ltd, Wuhan, China	11:30 - 11:45
Th.02.02.3	**Hybrid Integrated 1.6T 2xFR4 Transmitter PIC using a CMOS based Optical Interposer™** Paper Oral Presenter: Jinyu Mo, POET Technologies Ptv Ltd, Singapore, Singapore	11:45 - 12:00
Th.02.02.4	**Photonic Integrated Circuit CPO Module with Polymer Waveguides for Optical PCIe Transmission** Paper Oral Presenter: Megumi Oishi, KYOCERA Corporation, Seika-cho, Kyoto, Japan	12:00 - 12:15

Paper Session
SC 4: Signal processing for optical communication and computing
Thursday, October 2, 2025, 11:00 - 12:30 B3 M1-4

Th.02.04 - Space Division Multiplexing

Chair: Sjoerd van der Heide, EFFECT Photonics, Eindhoven, Netherlands

Th.02.04.1	**Real-time GPU-based 48-km 10-mode Transmission** Paper Oral Presenter: David Winter, Nokia Bell Labs, Murray Hill, NJ, United States	11:00 - 11:15
Th.02.04.2	**Vertically Coded Probabilistic Shaping Enabling MDL-tolerant Over-14.5-Tb/s/λ Spatial MIMO Transmission** Paper Oral Presenter: Akira Kawai, NTT Network Innovation Laboratories, NTT Corporation, Yokosuka, Japan	11:15 - 11:30
Th.02.04.3	**Enabling 448-Gbps-per-Wavelength Fiber Communications with Integrated Silicon Photonic Transceiver and Processor** Paper Oral Upgrade Presenter: Yeyu Tong, Hong Kong University of Science and Technology (Guangzhou), Guangzhou, China Paper Oral Upgrade Presenter: Wu Zhou, Hong Kong University of Science and Technology (Guangzhou), Guangzhou, China	11:30 - 12:00
Th.02.04.4	**Partitioned MIMO Equalization with Mode-Group Specific Interface Resolution for SDM Transmission over 58.9 km 15-mode Fiber** Paper Oral Presenter: Nicolas Braig-Christophersen, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut (HHI), Berlin, Germany	12:00 - 12:15
Th.02.04.5	**Rate-Adaptive Partial MIMO Equalization for Mode-Group Selective Transmission over Few Mode Fibers** Paper Oral Presenter: Ruby Stella Bravo Ospina, Nokia Bell Labs, Massy, France	12:15 - 12:30

Paper Session
SC 11: Quantum communications and quantum computing
Thursday, October 2, 2025, 11:00 - 12:30

Th.02.03 - TF and DV QKD

Chair: Konrad Banaszek, University of Warsaw – Centre for Quantum Optical Technologies, Centre of New Technologies, Warsaw, Poland

Th.02.03.1	**Twin Field QKD - Foundations of the Protocol, and Progress in Implementation** Invited Tutorial Speaker: Marco Lucamarini, University of York – Chair of Experimental Quantum Communications; Director, York Centre for Quantum Technologies, York, United Kingdom	11:00 - 12:00
Th.02.03.2	**Field Trial of Polarization-Encoded QKD Over 5G Backhaul and Fronthaul Fiber Links** Paper Oral Presenter: Argiris Ntanos, National Technical University of Athens, Athens, Greece	12:00 - 12:15
Th.02.03.3	**Field Demonstration of Quantum Key Distribution Coexisting with 110-Tb/s Classical Transmission over Multi-Core Fibers** Paper Oral Presenter: Qi Wu, University of L'Aquila, L'Aquila, Italy	12:15 - 12:30

Paper Session
SC 8: Sensing and microwave photonics
Thursday, October 2, 2025, 11:00 - 12:30 B3 M5-M8

Th.02.05 - Environmental and seismic sensing

Chair: Steinar Bjørnstad, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

Th.02.05.1	**Global Seismic Monitoring using Operational Subsea Cables** Invited Tutorial Speaker: Mikael Mazur, Nokia Bell Labs, New Jersey, United States	11:00 - 12:00
Th.02.05.2	**In-Field Demonstration of Multi-Tech Sensing on Terrestrial Optical Data Network using State Of Polarization and Phase Monitoring** Paper Oral Presenter: Emanuele Virgillito, Politecnico di Torino, Torino, Italy	12:00 - 12:15
Th.02.05.3	**Earthquake Distance and Magnitude Estimation via Calibrated Microwave Frequency Fiber Interferometry** Paper Oral Presenter: Stavros Deligiannidis, University of West Attica, Athens, Greece	12:15 - 12:30

Paper Session
SC 5: Optical transmission systems
Thursday, October 2, 2025, 11:00 - 12:30 B4 M1-4

Th.02.06 - High speed and long haul

Chair: Jérémie Renaudier, Nokia Bell Labs – Distinguished Member of Technical Staff, Optical WDM Transmission Systems, Paris-Saclay, France

Th.02.06.1	**Recent advances in high baud rate long haul transmission systems** Invited Speaker: Haïk Mardoyan, NOKIA BELL LABS, MASSY, France	11:00 - 11:30
Th.02.06.2	**SPC-Coded PS-QAM with Iterative Decoding for Long-Haul Transmission in a 3.68-THz WDM System** Paper Oral Presenter: Hussam George Batshon, Nokia Bell Labs, Murray Hill, United States	11:30 - 11:45
Th.02.06.3	**On the Feasibility of SCL-Band Transmission over G.654.E-Compliant Long-Haul Fibre Links** Paper Oral Presenter: Jiaqian Yang, Optical Networks Group, UCL (University College London), London, United Kingdom	11:45 - 12:00
Th.02.06.4	**IP over DWDM at Scale: Pluggable Transformation at Meta** Invited Speaker: Jeffrey Rahn, Meta Platforms, Menlo Park, CA, United States	12:00 - 12:30

Paper Session
SC 9: Free-space optics and optical wireless technologies
Thursday, October 2, 2025, 11:00 - 12:15 B4 M5-8

Th.02.07 - Terrestrial FSO

Chair: Volker Jungnickel, Fraunhofer Heinrich Hertz Institute, Berlin, Germany

Th.02.07.1	**Experimental Investigation of Availability in a 4.6 km Terrestrial Urban Coherent Free-Space Optical Communications Link**	11:00 - 11:15

Paper Oral Presenter: Vincent van Vliet, Eindhoven University of Technology, Eindhoven, Netherlands

Th.02.07.2	**Demonstration of Photodetector-Array-Based Reconfigurable Mode-Division-Multiplexing Coherent Receiver for Spatial Modes Varying Two Indices** Paper Oral Presenter: Wing Ko, University of Southern California, Los Angeles, United States	11:15 - 11:30
Th.02.07.3	**Secure FSO Transmission System Based on Y-00 Protocol Using Optical Decryption Incorporated into Coherent Receiver** Paper Oral Presenter: Ken Tanizawa, Tamagawa University, Tokyo, Japan	11:30 - 11:45
Th.02.07.4	**Coherent Modulation for Free-Space Optical Communications: Impact of Turbulence and Link Optimization** Invited Speaker: Douglas McDonald, Fraunhofer IOSB, Ettlingen, Germany	11:45 - 12:15

Paper Session
SC 4: Signal processing for optical communication and computing
Thursday, October 2, 2025, 11:00 - 12:30 B5 M1-4

Th.02.08 - DSP for coherent systems 2

Chair: Fatih Yaman, NEC Laboratories America, Inc., Princeton, United States

Th.02.08.1	**Algorithm and Architecture for Short-Reach Coherent-Lite Optics** Invited Speaker: Yixiao Zhu, State Key Laboratory of Photonics and Communications, Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai, China	11:00 - 11:30
Th.02.08.2	**FPGA-Based Hardware Realization of PTBC DSP for 100 Gbps 16-QAM Transmission in Coherent-Lite Optical Network** Paper Oral Presenter: Hae Young Rha, Miro&I Co., 13-8, Eungubinam-ro 33beon-gil, Daejeon, Korea, Republic of	11:30 - 11:45
Th.02.08.3	**Block-Wise MLSE Utilizing Periodic Pilot Symbols for Parallel Implementation on Digital Coherent Receiver** Paper Oral Presenter: Yukinobu Nakajima, NTT Corporation, Yokosukashi kanagawa, Japan	11:45 - 12:00
Th.02.08.4	**Characterization of MIMO Matrices in a Comb-Based Colorless Coherent WDM Transmitter** Paper Oral Upgrade Presenter: Di Che, Nokia Bell Labs, Murray Hill, New Jersey, United States	12:00 - 12:30

.
Thursday, October 2, 2025, 12:30 - 14:00

Lunch

PD Session
Multiple Topics
Thursday, October 2, 2025, 14:00 - 15:30 B1 M4

Th.03.01 - PD - Session

PD Session
Multiple Topics
Thursday, October 2, 2025, 14:00 - 15:30 B2 M1-4

Th.03.02 - PD - Session

PD Session
Multiple Topics
Thursday, October 2, 2025, 14:00 - 15:30

Th.03.03 - PD - Session

Closing Ceremony
Closing Ceremony
Thursday, October 2, 2025, 15:45 - 16:30

Closing Ceremony