ECOC 2023 – Special Edition

Dear Readers,

Welcome to the first edition of the ALLEGRO newsletter - ECOC 2023 Special Edition.

For the Photonics Community, Autumn holds a special place in the calendar, and this year, it is particularly significant. We are thrilled to announce that ALLEGRO will be participating in the 49th European Conference on Optical Communications (ECOC) in Glasgow, Scotland, from October 1st to October 5th, 2023.

This event marks a pivotal moment for ALLEGRO, as it offers us a remarkable opportunity to showcase the exciting developments and achievements from the initial months of our project.

In this inaugural newsletter, we are dedicated to providing you with a comprehensive overview of ALLEGRO's extensive activities during ECOC 2023.

We invite you to join us at the 9th International Symposium for Optical Interconnect in Data Centres on Thursday the 3rd. and explore the innovative strides ALLEGRO is making in the world of optical communications.

Stay tuned for more updates and insights as we look forward to meeting you there!

ALLEGRO Booth

You can find us at **Booth #525**, where we will be eager to engage with you and share our progress.

Selected Contributions

Follow ALLEGRO Consortium Partners and their contributions in various sessions and platforms of ECOC 2023.

The following list consists contributions in the framework of ALLEGRO, and additionally contributions of other frameworks, which fall in the general scope of our project.

@Workshop:

Su.A.2 *Fingerprint in Optical Communications and Networks* [invited], Luca Poti, CNIT

Su.A.3 Workshop - Stimulated Raman Scattering – Will it Benefit or Harm High-Capacity Transmission? Co-Organiser: Vittorio Curri, Politecnico di Torino

Su.A.3 *Challenges and recent progress of quality of transmission modelling*, Pierluigi Poggiolini, Politecnico di Torino

Su.A.4 Workshop - Is Building a Multi-fiber Network as Simple as Stacking Single-fiber Networks? Co-Organiser: Raul Muñoz, Centre Tecnològic de Telecomunicacions de Catalunya

Su.A.4 *Control plane challenges for multi-granular multiband WDM over SDM networks*, Ramon Casellas, CTTC

Su.A.5 Workshop - How Flexible Should the Access Network Be? Co-organiser: Michela Svaluto Moreolo, CTTC

Su.A.5 *Transport network flexibility for vertical services support in fixed/mobile convergence*, Paola Iovanna, Ericsson

Su.B.2 Workshop - Special Session - MOPA Optics for Wireless Co-organiser: Fabio Cavaliere, Ericsson

Su.B.2 *MOPA Optics for Wireless*, Antonio Tartaglia, Ericsson

Su.B.3 Workshop - DSP Evolution for 2030 and beyond Co-organiser: Bernhard Spinnler, Infinera

Su.B.3 *Dynamic Optical Processors: Shaping the Next Generation of Digital Signal Processing*, Ana Gonzalez, iPRONICS

Su.B.5 Workshop - Intent-Based Autonomous Optical Networking: Is the Optical Community Ready for the Human-free Service Management Era? Co-organisers: Raul Muñoz, CTTC, Ricard Vilalta, CTTC

Su.B.5 *Main requirements and challenges for Transport Slicing*, Juan-Pedro Fernández-Palacios, Telefónica

Su.B.5 *Integration of Configuration, Control and Telemetry in Disaggregated Optical Networks*, Ramon Casellas, CTTC

Su.B.5 *Main requirements and challenges for Transport Slicing*, Jose Manuel Rivas et al., Telefónica

Su.B.6 Workshop - Quantum Network Beyond Security in Support of Distributed Quantum Computing and Distributed Quantum Sensing   Co-organiser: Reza Nejabati, University of Bristol

Su.B.6 *Critical networking aspects in distributed quantum computing*, Sima Bharani, University of Bristol

@Conference:

M.B.1.1 *Modulation Enhancement Through Resonant Microwave-Photonic Co-Design*, David Moor et al., ETH Zurich

M.B.5.5 *Real-Time Bidirectional Coherent Point-to-Multipoint Passive Optical Network*, Tobias Eriksson et al., Infinera

M.B.7.1 *Intent based AI model in packet-optical networks towards 6G* [invited], Paola Iovanna et al., Ericsson

Tu.A.6.2 *1800 km 16QAM Transmission With a 400G QSFP-DD Coherent Pluggable*, Warren Sande et al., Infinera

Tu.B.3.2 *Low-Power BTO on SiN MZI Weights for Neuromorphic Photonics*, Themistoklis Chrysostomidis et al. Aristotle University of Thessaloniki

Tu.B.5.3 *Field Trial of a Management Architecture for Advanced Smart Pluggable Transceivers in Diverse Hosts*, David Hillerkuss et al., Infinera

Tu.B.5.4 *Field-Trial Demonstration of ML Deployment in Optical Networks Using Telemetry and AI Engine*, Sen Shen et al., University of Bristol,

Tu.C.5.5 *SDN Control of Amplification Stages in Multi-Band Optical Networks*, Margita Radovicet al., Scuola Superiore Sant'Anna

We.A.3.2 *Ultra-fast Multipixel SNSPD Arrays with Photon-number Capabilities for Quantum Applications*, Giovanni V. Resta et al., ID Quantique

We.A.4 Advanced Modulator Design, Presider: Ueli Koch, ETHZ

We.B.6 High Speed Transceivers for Short Reach, Presider: Michela Svaluto Moreolo, CTTC

We.C.1.T *Tutorial - Towards More and More DSP in Higher Speed PON Access Networks*, Roberto Gaudino, Politecnico di Torino

We.C.2.2 *Experimental Test of Closed-Form EGN Model over C+L Bands*, Yanchao Jiang et al., Politecnico di Torino

We.C.5.3 *Migration Strategies from C-Band to C+L-Band/Multi-FiberSolutions in Optical Metropolitan Area Networks*, Farhad Arpanaei et al., Universidad Carlos III de Madrid

We.C.7 Optical Wireless Communications for Mobile Networks, Presider: Volker Jungnickel, Fraunhofer HHI

We.D.5.5 *256 GBd Single-Carrier Transmission over 100km SSMF by a Plasmonic IQ Modulator*, Laurenz Kulmer et al., ETH Zurich

We.D.7.3 *Performance Evaluation of O-band OADM-based Optical Distribution Networks at 50 Gb/s and 100 Gb/s PAM-4*, Henrique Freire Santana et al., Eindhoven University of Technology

Th.A.1 Optical Network Programmability, Presider: Raul Muñoz, CTTC

Th.A.4.3 *Experimental Assessment of C- and L-band Photonic Integrated SOA-based-1x8 Wavelength Selective Switch*, Mohammad Mukit et al., Eindhoven University of Technology

Th.A.7 Photonics for Sub THz & THz Communications, Presider: Antonio D'Errico, Ericsson

Th.B.5.6 *TDECQ optimization of VCSEL-MMF nonlinear Digital Pre-Distorters using End-to-end Learning*, Leonardo Minelli et al., Politecnico di Torino

@Hack your Research:

Learn how to Reduce your Photonic Design Cycles and make your Prototypes Faster with Programmable Photonics, Daniel Perez-Lopez, David Sánchez, and Mikel Gutierrez, iPronics

@Poster:

P3 *Introducing End-to-End Location Awareness in Packet-Optical Networks*, Carlos A. Manso, CTTC

P22 *Demonstration of an O-band InP Monolithically Integrated 4x4SOA-based Broadcast and Select Optical Space Switch*, Marijn Rombouts, Eindhoven University of Technology

P35   *Real-time Full-Duplex 112Gbps PAM-4 Optical Wireless Transmission for Optical Wireless Data Center Networks*, Shaojuan Zhang, Eindhoven University of Technology

P60   *Photonic Integrated Nanosecond 1×2 Wavelength Selective Switch On 3-μm Silicon Platform*, Yu Wang, Eindhoven University of Technology

P70   *Leveraging Raman Amplification to Improve and Equalize the Performance of a 20-THz Multi-band Optical System*, André Souza, Infinera, Portugal

P72   *Model-Centric versus Data-Centric Machine Learning for Soft-Failure Cause Identification in Optical Networks*, Lareb Zar Khan, Scuola Superiore Sant'Anna

P75   *Cost-effective IPoDWDM Aggregation and Improved Router Bypass using P2MP Optics*, Ashwin Gumaste, Infinera

P90   *Toward Optimal Orchestration of Time-shared QKD Infrastructure*, Juan Carlos Hernandez-Hernandez Universidad Carlos III de Madrid

@Insights From The Experts: A Student-Mentor Session with Senior Professors and Industry Leaders
Dimitra Simeonidou, University of Bristol

@Market Focus:

Mon. 10:00   *Empowering the Future: Advancements in Programmable Photonics with iPronics' SmartLight Technology*, Ana González, iPronics

Tue. 14:20   *5G convergence and Future Challenges for Optical Networks*, Andrea Di Giglio, Telecom Italia

@ECOC Exhibition Industry Awards Finalists:

iPronics   finalist of *Most Innovative Product – Hybrid PIC/Optical Integration Platform Award*
Infinera   finalist of *Most Innovative PON/5G/FTTx Product Award*
Infinera   finalist of *Most Innovative Product Award – Chip-Scale Packaging/Optical Sub Assembly*

@9th International Symposium for Optical Interconnect in Data Centres

09:00   *Co-packaged optics for radio access networks: opportunities and challenges*, Antonio Tartaglia, Ericsson
15:30   *Enabling ultra-low energy and secure optical networks*, Ana Gonzalez, iPronics

9th International Symposium for Optical Interconnect in Data Centres

Date: Thursday, 3rd October 2013   **Location**: HALL 1, SEC Glasgow, Scotland
08:00   Registration
08:30   **Welcome** by Carol Monaghan MP (UK Parliament)

Session 1: OPTICAL MIGRATION IN HYPERSCALE   Session Chair: Richard Pitwon

08:40   Craig Thompson (NVIDIA) *The impact of AI/ML on the optical transceiver market*
09:00   Antonio Tartaglia (Ericsson) *Co-packaged optics for radio access networks: opportunities and challenges*
09:20   Keren Bergman (Columbia University) *Petascale photonic connectivity for energy efficient scaling of AI computing*
09:35   Xin Chen (Huawei) *The high baudrate InP integrated platform for optical interconnect application*
09:50   Roshene McCool (Corning) *Emerging fiber and cable requirements in data center application*

10:05 – 10:30 Coffee Break

Session 2: PIC N MIX   Session chair: Lidia Galdino

10:30   Nick Psaila (Intel) *Detachable Optical Chiplet Connectors for High-bandwidth Optical Compute Interconnects*
10:50   Helene Debregeas (Almae Technologies) *High-speed 100 to 200 Gb/s transmitters for datacom*
11:10   Anna O'Dowd (Vector Photonics) *Photonic Crystal Surface Emitting Lasers (PCSELs): Innovation through simulation*
11:25   Adam Carter (OpenLight) *The benefits of heterogeneous integration of III-V actives for next generation optical interconnects*
11:40   Kazuhiko Kurata (AIO Core) *Reliable silicon photonics optical transceiver "IOCore" in high temperature operation and immersion cooling systems*
11:55   Marylise Marchenay (Scintil Photonics) *Advanced photonic fully integrated circuits relying on the heterogeneous integration of lasers on the back side of standard silicon photonics: benefits for Direct and Coherent detection communications*

12:10 – 13:30 Lunch Break

Session 3: QUANTUM AGE OF DATA CENTRES   Session Chair: Anke Lohmann
13:30   Catherine White (BT) *Quantum secured data centre interconnect - feasibility and roadmap*
13:50   Segolene Olivier (CEA Leti) *QPICs*
14:10   Michael Geiselmann (Ligentec) *Low loss PICs for quantum: every photon counts*
14:25   Ryan Vallance (Senko) *Metallic Fiber-Optic Connectors for Quantum PICs*
14:40   Claudia Hössbacher (Polariton) *New Tricks with Light: Advancements in Plasmonics and Silicon Photonics*
14:55   Charlotte Ovenden (Aegiq) *Quantum light for next generation optical communication*
15:10   15:30   Coffee Break
Session 4: LIGHT IN THE BOX   Session Chair: Richard Pitwon
15.30   Ana Gonzalez (IPRONICS) *Enabling ultra-low energy and secure optical networks*
15:45   Robert Palmer (Huawei) *Project ADOPTION – Advance co-packaged optics enabling high-efficiency cloud computing*
16:00   Katherine Bryant (VTT) *Silicon photonics-based fast tunable laser development in the Horizon Europe DYNAMOS project*
16:15   Pawel Wiatr (Infinera) *XR Technology in datacentres*
16:30   Cyriel Minkenberg (Lumiphase) *BTO enabling high-speed IMDD and coherent optical communications*
16:45   Christian Reimer (Hyperlight) *Integrated Photonics in Thin-Film Lithium Niobate*
17:00   Takaaki Ishigure (Keio University) *Polymer optical waveguides for high-density 3-D optical packaging*
17:15   Lewis Johnson (NLM Photonics) *Transatlantic partnerships for hybrid electro-optic modulation*
17:30   End of Symposium

Organising Committee: Tolga Tekin (Fraunhofer IZM, Germany), Richard Pitwon (Resolute Photonics, United Kingdom), Alison McLeod (Technology Scotland, United Kingdom) Nikos Pleros (AUTH, Greece), Dimitris Apostolopoulos (ICCS / NTUA, Greece), Paraskevas Bakopoulos (NVIDIA, Greece)
Supporters: ADOPTION EU Project, DYNAMOS EU Project, ALLEGRO EU
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