



ECOC 2018 – Special Edition

Dear Readers,

Welcome to the third edition of the L3MATRIX newsletter - ECOC 2018 Special Edition. For the Photonics Community September has been one of the distinguished months of the year due to the largest optical communication event in Europe: The European Conference and Exhibition on Optical Communication (ECOC). This year's ECOC in Rome, Italy from the 23th to the 27st of September 2018 is of particular importance for L3MATRIX since it gives us the opportunity to present proudly the highlights of the first half of the project. This third Newsletter is dedicated to our project's wide range of activities during ECOC 2018. L3MATRIX will be among the exhibitors at the conference and we will present the 6th International Symposium for Optical Interconnect in Data Centres on Tuesday the 26th.

We look forward to meeting you there!

Papers, Talks

M. Moralis-Pegios, N. Terzenidis, G. Mourgias-Alexandris, K. Vyrsoinos, N. Pleros, "Multicasting in a 256-port sub- μ sec latency Hippo switch architecture for disaggregated DataCenters", Eur. Conf. on Optical Comm. (ECOC) 2018, Mo3.H.3 , Rome, Italy, Sept. 2018

N. Terzenidis, M. Moralis-Pegios, G. Mourgias-Alexandris, K. Vyrsoinos, N. Pleros, "A 1024-port sub- μ sec latency Optical Packet Switch using the Hippo λ -routed modified Spanke switch architecture", Eur. Conf. on Optical Comm. (ECOC) 2018, We2.45 , Rome, Italy, Sept. 2018

N. Pleros, "Sub- μ sec latency 1000-port scalable Optical Switch Fabrics for Disaggregated Computing", ECOC WS14 Workshop, Rome, Italy, Sept. 2018

CMOS-Compatible Hybrid III-V/Si Photodiodes Using a Lateral Current Collection Scheme
Yannick Baumgartner [Switzerland]¹, Charles Caër [Switzerland]¹, Marc Seifried [Switzerland]¹, Gustavo Villares [Switzerland]², Daniele Caimi [Switzerland]¹, Jérôme Faist [Switzerland]³, Bert Jan Offrein [Switzerland]¹, Lukas Czornomaz [Switzerland]¹

@Booth

The L3MATRIX team will be welcoming you at the **Stand #300**.

6th International Symposium for Optical Interconnect in Data Centres

Co-Located with 44th European Conference on Optical Communication (ECOC 2018)

Date: Wednesday, 26th September 2018

Location: Iustina Room, Rome, ECOC Exhibition 2018

The focus of this symposium is the evolution of high-performance, low-energy and low-cost optical and photonic interconnect technologies for data communications. We intend to draw out and discuss the key technology enablers and inhibitors to widespread commercial proliferation of photonic interconnect in mega data centre environments and throughout the wider Internet of Things (IoT) all the way to the "Edge", and how the optical interconnect community can collectively help to address these. This technology evolution is already strongly reflected in the research, development and strategic activities of mainstream organisations in the data centre and broader IoT space and the emergence of a new technology eco-system.

The topics addressed will include passive and active embedded optical and photonic interconnect technologies for data centre and IoT including photonic integrated circuits (III-Vs, silicon, polymer, photonic crystals, plasmonics), optical circuit boards, optical transceivers and switches, sensors and the advanced data centre architectures, which these technologies enable.

6th International Symposium for Optical Interconnect in Data Centres - Program



08:30 **Registration**

We1I - Session 1: Enhanced Data Centre Architectures

09:00 **Plenary Talk**

09:15 **Una Buckley, Dell** Title: "Dell EMC Perspectives: Optical Connectivity for Enterprise Data Centres"

09:30 **Bert Offrein and Folkert Horst, IBM Zurich** Title: "Neuromorphic Systems and Photonic"

09:45 **Kobi Hasharoni, Dust Photonics** Title: "Chip I/O Disaggregation: Co-packaging a two-dimensional SiP Optical Interconnect with a Switch ASIC"

10:00 **Marco Fiorentino, HP Labs** Title: "Electrical and Optical Glass Interposer for the Packaging of Silicon Photonics Transceivers"

10:15 **Hitesh Ballani, Microsoft UK** Title: "Optics for the Cloud: Opportunities and Challenges"



10:30 – 11:00 **Coffee break**

We2I - Session 2: Advances in Chip Level Integrated Optics and Photonics

11:00 **Mark T. Wade, Ayar Labs** Title: "Monolithically Integrated Electronics-Photonics"

11:15 **Kazuhiko Kurata, PETRA / AICore** Title: "Multimode commercial PIC transceivers"

11:30 **Ronald Broeke, Bright Photonics** Title: "PIC design innovation with Nazca."

11:45 **Clint Schow, UCSB** Title: "Ultra-low power short-reach interconnects for 100G and beyond"

12:00 **Shinji Matsuo, NTT** Title: "Membrane lasers and photonic crystal lasers on Si substrate for datacom and computercom applications"

12:15 **Bogdan Sirbu, Fraunhofer IZM** Title: "L3MATRIX - Large Scale Silicon Photonics Matrix for Low Power and Low Cost Data Centers"

12:30 -13:30 **Lunch break**

We3I - Session 3: Advances in Board level Integrated Optics and Photonics

13:30 **Hideyuki Nawata, Nissan Chemicals** Title: "Advanced polymer materials for PIC interconnect"

13:45 **Marika Immonen, TTM Technologies** Title: "Embedded optical PCBs and substrates for PIC applications"

14:00 **Jean-Marc Boucaud, STMicroelectronics** Title: "Electrical and Optical Glass Interposer for the Packaging of Silicon Photonics Transceivers"

14:15 **Takaaki Ishigure, Keio University** Title: "Polymer Waveguide Enabling High-Density Board-Level and On-Chip Optical Wiring"

14:30 **Hideyuki Nasu, Furukawa** Title: "1.3-Tb/s VCSEL-based On-Board Transceiver Module for High-Density Optical Interconnects"

14:45 **Ségolène Olivier, CEA-LETI** Title: "COSMICC - Cmos Solutions for Mid-board Integrated transceivers with breakthrough Connectivity at ultra-low Cost"

15:00 – 15:30 **Coffee break**

We4I - Session 4: The Blue Sky

15:30 **Theoni Alexoudi, Aristotle Univ. Thessaloniki** Title: "ICT-STREAMS - Silicon Photonics Transceiver and Routing technologies for High-End Multi-Socket Server Blades with Tb/s Throughput interconnect interfaces"

15:45 **Elad Mentovich, MELLANOX** Title: "plaCMOS - Wafer-scale, CMOS integration of photonics, plasmonics and electronics devices for mass manufacturing 200Gb/s non-return-to-zero (NRZ) transceivers towards low-cost Terabit connectivity in Data Centers"

16:00 **Marco Romagnoli, CNIT** Title: "TeraBOARD - High density scalable optically interconnected Tb/s Board"

16:15 **Kostas Vyrosokinos, Aristotle Univ. Thessaloniki** Title: "MOICANA - Monolithic cointegration of QD-based InP on SiN as a versatile platform for the demonstration of high performance and low cost PIC transmitters"

16:30 **Pierpaolo Boffi, Politecnico di Milano** Title: "PASSION - Photonic technologies for programmable transmission and switching modular systems based on Scalable Spectrum/space aggregation for future agile high capacity metro Networks"

16:45 **Rafael Jordan, Fraunhofer IZM** Title: "European Photonic Innovation Hub for Optical Interconnects - PHOXLAB"

17:00 **END OF SYMPOSIUM**

Sponsors for Symposium:

H2020-L3MATRIX and H2020-ICT-STREAMS and H2020-COSMICC and H2020-PASSION and H2020-TERABOARD projects are supporting and sponsoring the 6th International Symposium for Optical Interconnect in Data Centres.

Follow L3MATRIX



www.l3matrix.eu



projekt.l3matrix@izm.fraunhofer.de



+49 30 46403 639



L3MATRIX project is funded under the EU Research and Innovation programme Horizon 2020 with Grant Agreement Nr. 688544, http://cordis.europa.eu/project/rcn/199186_en.html

© L3MATRIX All rights reserved.

Coordinator: Fraunhofer-Gesellschaft, Dr. Tolga Tekin, Fraunhofer Institute for Reliability and Microintegration IZM, Gustav-Meyer-Allee 25, 13355 Berlin, Germany.