Room F (Sicily), 2F — Chair: Yo Nakamura (Fujitsu)

We3F — July 1 (Wed), 2026

Coherent Communications & Novel Sources — 15:00-16:30

We3F-1 **Invited** **15:00-15:30**

Ultra-Compact Coherent Transmitters for NextGeneration Datacenter Interconnects

Erwan Weckenmann, Alireza Geravand, Jean-Michel Vallée, Farshid Shateri, Zibo Zheng, Simon Levasseur, Leslie A. Rusch, Wei Shi
Université Laval

We review our recent works on ultra-compact silicon photonic coherent transmitters, demonstrating record bandwidth density and energy efficiency. Our results, including multi-wavelength and super-channel demonstrations, highlight their scalability for nextgeneration datacenter interconnects.

We3F-2 **15:30-15:45**

Temperature Stabilization Technique for Si Micro-Ring-based Coherent QPSK Transmitter

oungkwan Jo[1,2], Yongjin Ji[1], Stefan Lischke[3], Christian Mai[3], Lars Zimmermann[3,4], Woo-Young Choi[1]
[1]Yonsei University, [2]Electronics and Telecommunications Research Institute, [3]IHP – Leibniz-Institut für innovative Mikroelektronik, [4]Technische Universität Berlin

A temperature stabilization technique is demonstrated for a Si micro-ring-based coherent transmitter operating at 25-Gbaud QPSK. The technique provides initial bias optimization and real-time bias tracking. Its operation is successfully verified through measurement under intentional temperature perturbation.

We3F-3 **15:45-16:00**

140-Gbaud Lumped-EML Submodule Using a Capacitive Wire-Bonding Pad and LC Resonance

Seok-Jun Yun[1,2], Young-Tak Han[1], Dong-Hoon Lee[1], Dong-Hyo Lee[1], Young-Kyu Choi[1], Hoon Kim[2], and Yongsoon Baek[1]
[1]Electronics and Telecommunications Research Institute, [2]Korea Advanced Institute of Science and Technology

We develop a lumped-EML submodule leveraging LC resonance and a capacitive wire-bonding pad to achieve >100-GHz modulation bandwidth. The fabricated submodule demonstrates successful 140-Gbaud PAM-4 and PAM-6 signal transmissions.

We3F-4 **16:00-16:15**

A Free-Space Optical Communication Link Enabled by Quantum Dot Comb Laser

Shujie Pan[1,2], Dingyi Wu[3],Shihao Ding[4], Junjie Yang[2], Xi Xiao[3], Chao Zhao[1,5], Siming Chen[1,5]
[1]Chinese Academy of Sciences, [2]HS Photonics Co., Ltd., [3]National Information Optoelectronics Innovation Center, [4]Shenzhen Technology University, [5]University of Chinese Academy of Science

We demonstrate a 64 Gbit/s/λ free-space optical link using a 100 GHz quantum dot mode-locked laser. This integrated multi-wavelength source is predicted to support distances exceeding 500 m, offering a cost-effective solution for next-generation terrestrial networks.

We3F-5 **16:15-16:30**

Lasing Characteristics of GaInAsP SCH-MQW High-Mesa LDs Grown on Hydrophilic Bonding InP/Si Substrate

Qiguang Jia, Zhehao Huang, Rong Le, Mizuki Holt, Koki Tominaga, Chaoke Ban, Ruiqi Zhang, Liang Zhao, Kazuhiko Shimomura
Sophia Universit

Successful lasing has been achieved in GaInAsP SCH-MQW laser diode of high-mesa structure grown on a hydrophilic bonding InP/Si substrate by MOVPE. The threshold current was comparable with the same structure on InP substrate.