

Room A (Grand Ballroom 1), 2F

Chair: Takuo Hiratani (Sumitomo Electric Industries, Ltd.)

We2A

July 1 (Wed), 2026

Advanced Lasers

13:15-14:45

We2A-1 Invited 13:15-13:45

Impact of Equalization-Enhanced Phase Noise on Tbps-Class Coherent Transceivers and Joint Optimization of Laser Phase Noise and DSP Compensation

Yo Nakamura, Tomoo Takahara, Shinsuke Tanaka, Hisao Nakashima
1Finity Inc.

High-baud-rate coherent transmission suffers from severe EEPN caused by digital dispersion compensation. We introduce an EEPN budgeting method and quantify the trade-off between laser phase noise characteristics and DSP configuration assuming a 1.6 Tbit/s system.

We2A-2 13:45-14:00

High-Power (500 mW) Narrow-Linewidth (11.5 kHz) Distributed Feedback Laser

Hao Song^{1,2}, Huasong Linfang^{1,2}, Ruikang Zhang^{1,2}, Hao Wang^{1,2}, Dan Lu^{1,2}

¹Institute of Semiconductors, Chinese Academy of Sciences, ²University of Chinese Academy of Sciences

We demonstrate a high-power, narrow-linewidth DFB laser. At 25 °C, the epi-down bonded DFB laser delivers 534 mW in continuous-wave (CW) operation with an intrinsic linewidth of 11.5 kHz.

We2A-3 14:00-14:15

Full S-Band Tunable Laser with a Trident Tapered Coupler

Dongwei Zhuang, Quanxin Na, Qijie Xie, Chunyang Ma, Ningli Chen, Li Wang, Mengqi Wu, Xiaomin Nie, Zhixue He, Lei Wang
Peng Cheng Laboratory

We demonstrate an external-cavity laser covering the full S-band with a 116.02 nm tuning range, a maximum output power of 13.54 dBm, an optimal SMSR of 68.74 dB, an intrinsic linewidth of 503 Hz, and RIN below -151.97 dBc/Hz.

We2A-4 14:15-14:30

Modulation Response of Photonic Crystal Lasers with Linear Dispersion

Christos Papapanos¹, Mariusz Drong¹, Md Ishfak Tahmid¹, Boubacar Kanté^{1,2}

¹University of California, Berkeley, ²Lawrence Berkeley National Laboratory

We theoretically study modulation dynamics in photonic crystal lasers with linear (Dirac) dispersion, showing that it enhances relaxation frequency scaling and enables significantly higher modulation bandwidth compared with conventional quadratic band edge devices.

We2A-5 14:30-14:45

Demonstration of a Novel Built-in Channel Waveguide (BCW) Laser Emitting at 1300nm

Ika Novitasari¹, Alfred Albert¹, Zih-Jie Sun¹, Akihiko Kasukawa^{1,2}, San-Liang Lee¹

¹National Taiwan University of Science and Technology, ²Ministry of Education Taiwan

A novel Built-in Channel Waveguide (BCW) laser with a wider channel width (>5 μm) is fabricated for the first time. It demonstrates high fabrication tolerance, single-mode operation, and high-power capability, showing significant potential for scaling.