

Room E (Sydney), 2F

Chair: Younghyun Kim (Hanyang University)

Mo2E

June 29 (Mon), 2026

Quantum & Intelligent Integrated Photonics

14:45-16:15

Mo2E-1

14:45-15:00

Wafer-Scale and Stable Single-Photon Sources on an 8-Inch Si₃N₄ Platform

Lingzhi Yuan¹, Baojie Hou¹, Zichao Zhao¹, Haoran Ma, Qishen Liang¹, Bin Zhang^{1,2}, Zhujun Wei¹, Huihui Zhu¹, Yuehai Wang¹, Jianyi Yang¹
¹Zhejiang University, ²Zhejiang Lab

We demonstrate scalable and highly stable singlephoton sources on an 8-inch silicon nitride platform by employing Pound-Drever-Hall locking to actively suppress resonance drift.

Mo2E-2

15:00-15:15

Ultra-Low Loss Optical Phase Shifter on a 200-mm LPCVD Silicon Nitride Platform

Huaqing Qiu, David Coenen, Jon Kjellman, Tangla David Kongnyuy, Mathias Prost, Joost Brouckaert, Roelof Jansen, Marcus S. Dahlem
imec

We demonstrate a high-performance silicon nitride optical phase shifter with measured 0.22 dB insertion loss and -19 dB back reflection, and with simulated 29 mW/ π power consumption and 5.5 kHz bandwidth.

Mo2E-3

Invited

15:15-15:45

Manufacturable Integrated Photonics for Fault-Tolerant Quantum Computing

Gyeongho Son
PsiQuantum Corp.

Fault-tolerant quantum computing requires manufacturable hardware with ultralow loss and scalable packaging. We review an integrated silicon photonics platform fabricated in a 300-mm foundry, demonstrating high-fidelity qubit operations and chip-to-fiber coupling losses as low as 52 mdB.

Mo2E-4

15:45-16:00

A WDM-MDM Photonic Chip for Matrix-Vector Multiplication

Qingrui Yao^{1,2}, Chengdu Cao¹, Qiaolv Ling¹, Yiwei Xie¹, Huan Li¹, Zejie Yu¹, Xiangxing Bai², Yaocheng Shi¹, Daoxin Dai¹
¹Zhejiang University, ²QIANYUAN Laboratory

We demonstrate an on-chip 8×8 matrix-vector multiplier using hybrid wavelength (2) and mode multiplexing (4) (WDM+MDM). Parallel multi-wavelength and multi-mode operation is achieved on a silicon photonics platform, verifying scalability processing capability.

Mo2E-5

16:00-16:15

On-Chip Optical Extreme Learning Machine via Supercontinuum Generation in Silicon Nitride Waveguides

Ruifeng Chen, Linanna Qi, Qian Li
Peking University

We demonstrate an integrated optical extreme learning machine utilizing supercontinuum generation in silicon nitride waveguides, achieving 87.5% accuracy for MNIST handwritten digit classification.