

Room E (Sydney), 2F

Chair: Kristinn Gylfason
(KTH Royal Institute of Technology)

Tu4E

June 30 (Tue), 2026

Silicon Photonics for Sensing & Imaging

15:00-16:30

Tu4E-1 Invited 15:00-15:30

Silicon Photonics for Gas Sensing

Zhenzhou Cheng^{1,2}, Jiaqi Wang³, Zunyue Zhang^{1,2}, Tiegeng Liu^{1,2}

¹Tianjin University, ²Key Laboratory of Optoelectronic Information Technology, Ministry of Education, ³Shenzhen University

We presented our efforts in developing silicon devices for gas sensing, including suspended nanomembrane silicon (SNS) waveguides, microcavities, grating couplers, and photodetectors. Using the SNS waveguide devices, we demonstrate on-chip multiple-gas sensing.

Tu4E-2 15:30-15:45

Innovation-Driven Dual-Parameter Sensor for Wide-Range Temperature and Refractive Index Measurement

Xinzhe Xiong, Guanglian Cheng, Qiyuan Yi, Zhiwei Yan, Qiyuan Li, Zengfan Shen, Hanming Yuan, Xuchen Peng, Jiahao Xing, Qixin Xu, Lishen
Huazhong University of Science and Technology

We proposed a free spectral range (FSR) tracking method that converts FSR constraints into new sensing dimensions. By applying this method, we implemented a wide-range dual-parameter sensor for temperature and refractive index.

Tu4E-3 15:45-16:00

Inverse-Designed Silicon Nitride Computational Spectrometer with Sub-ångström Resolution

Kai Wang¹, Enge Zhang^{1,2}, Lei Zhang¹

¹Beijing University of Posts and Telecommunications, ²Ludong University

We present a silicon nitride computational spectrometer, leveraging inverse design to achieve a spectral resolution of 80 pm within the C-band.

Tu4E-4 Invited 16:00-16:30

Silicon Photonic Beam Steerers for Chip-Scale LiDAR and Microscopy

Chung-Yu Hsu¹, Hsun-Sung Chiu¹, Chieh-Chih Yu¹, Ping-Yen Hsieh¹, Li-Jun Tung¹, Yu Heng Hong², Hao-Chung Kuo^{1,2}, Chi-Wai Chow¹, You-Chia Chang¹

¹National Yang Ming Chiao Tung University, ²Hon Hai Research Institute

We present two silicon photonic beam steerers: one based on a metalens focal plane array, producing a collimated beam for LiDAR, and an optical phased array producing a focused beam steerable throughout a 3D volume.