

Room G (Miami), 2F

Chair: Oskars Ozolins (Riga Technical University)

Th2G

July 2 (Thu), 2026

Nonlinear Active Devices

10:15-11:45

Th2G-1 Invited 10:15-10:45

Electro-Optic-Equalizer-Integrated Thin-Film Lithium Niobate Modulator for High Baud-Rate Signaling

Yuya Yamaguchi

National Institute of Information and Communications Technology

We review a thin-film lithium niobate (TFLN) modulator with an integrated electro-optic equalizer, enabling modulator bandwidth extension. The combination of an electro-optic equalizer and a TFLN is expected to enable ultra-high-speed baud-rate modulation in future optical fiber communications.

Th2G-2 Invited 10:45-11:15

Nonlinear Wavelength Conversion in a Thin-Film Lithium Niobate Waveguide

Haoran Li, Zejie Yu

Zhejiang University

We reported integrated nonlinear wavelength conversion, including efficient difference frequency generation and effective four-wave mixing on thin-film periodically poled lithium niobate waveguides using an adaptive poling method to overcome the thickness variations across long waveguides.

Th2G-3 11:15-11:30

Nanophotonic Electro-Optic Polarization Mode Converter on Periodically Poled Thin Film Lithium Niobate

Muhammad Adil¹, Tien-Dat Pham¹, Po-Hsiang Huang¹, Reinhard Geiss², Frank Setzpfandt^{2,3},

Yen-Hung Chen¹

¹National Central University, ²Fraunhofer Institute of Applied Optics and Precision Engineering, ³Friedrich Schiller University

We demonstrate an electro-optic polarization mode converter on periodically poled lithium-niobate-on-insulator nanophotonic platforms. A 2.64-mm device achieves fast TETM conversion with >20-dB conversion efficiency in the telecom band, enabling polarization control for photonic integrated circuits.

Th2G-4 11:30-11:45

1.28 Tb/s High-Speed Wavelength Conversion Leveraging the Transmission Directionality of Semiconductor Optical Amplifiers

Ye Tian, Tong Cao, Liao Chen, Chi Zhang, Yang Liu, Xinliang Zhang

Huazhong University of Science and Technology

We demonstrate a bidirectional all-optical wavelength converter that significantly enhances Q-factor and extinction ratio, outperforming conventional schemes and showing Tb/s potential.