We1E-1 Invited 08:30-09:00

Nonlinear Optics in Silicon-Based Photonic Devices

D. T. H. Tan, X. X. Chia, K. Y. K. Ong, J. W. Choi, B-. U. Sohn, G. F. R. Chen, A. Chowdury
Singapore University of Technology and Design

Photonic devices implemented on silicon-based platforms are advantageous owing to their compatibility with complementary metal oxide semiconductor processing and advantageous optical properties enabling high modal confinement, low loss and high optical nonlinearities. We report deterministic, reconfigurable generation of soliton crystals, further showcasing their higher comb line power compared to the single soliton state. The soliton crystals are experimentally demonstrated to be excellent vessels for high-speed data transmission.

We1E-2 09:00-09:15

Silicon Nitride 2 × 2 Thermo-Optic Switch with Pπ < 30 mW and Response Time < 20 μs

Luyang Liu, Haojie Xue, Yichen Zhang, Lei Zhang
Beijing University of Posts and Telecommunications

We report a 2 × 2 SiN Mach-Zehnder thermo-optic switch featuring folded waveguides. At 1550 nm, it achieves 25 mW Pπ, > 25 dB extinction ratio, and 18 μs switching time.

We1E-3 09:15-09:30

Monolithic Integration of Dual-Segment Electro-Absorption Modulators for Optical Single-Sideband Generation

Cheng-En Jiang[1], Shou-Ming Chen[1], Kun-Sian Lin[1], Bo-Hong Chen[2], Rih-You Chen[1], Yi-Jen Chiu[1]
[1]National Sun Yat-Sen University, [2]LandMark Optoelectronics Corporation

Monolithic dual EAMs integration for 20GHz optical single-side-band (OSSB) generation has been proposed and demonstrated. A titled micro-mirror integrated EAM enables efficient vertical emission and high-density packaging for optoelectronic sensing, achieving 8dB suppression.

We1E-4 Invited 09:30-10:00

Nonlinear Effects in High-Q Multimode Silicon Resonators

He Gao, Yaojing Zhang
The Chinese University of Hong Kong, Shenzhen

This paper explores nonlinear effects in high-Q multimode silicon resonators and observes TE0-mode-based Raman lasers, higher-order-mode-based Raman lasers, and RamanKerr frequency combs.