Room F (Sicily), 2F | Chair: Toshimasa Umezawa (NICT)

Tu3F June 30 (Tue), 2026

Novel Photodetectors II

13:15-14:45

Tu3F-1 Invited 13:15-13:45

High-Speed Vertical-Illumination Photodiodes for beyond-200-Gbaud Applications

Yuki Yamada, Ikue Hiraoka, Yusuke Araki, Takuya Hoshi, Yoshiho Maeda, Shohei Kosuga, Takahiro Nakamura, Shoko Tatsumi, Fumito Nakajima
NTT, inc.

We present our recent work on high-speed verticalillumination InP/InGaAs photodiodes (PDs) with over 200-GHz bandwidth. Interference-based absorption enhancement yields a high responsivity of over 0.5 A/W. The inverted p-down structure ensures excellent reliability.

Tu3F-2 13:45-14:00

Ultrafast and Ultrahigh Extinction Ratio Optical Switch on a TFLT Platform

Zhengyuan Bao, Haoran Li, Taoran Yao, Zejie Yu, Daoxin Dai
Zhejiang University

We report an ultrahigh extinction ratio (>40 dB) and ultrafast (<20 ns) cascaded Mach-Zehnder interferometer electro-optic switch operating at 850 nm on a thin-film lithium tantalate platform.

Tu3F-3 14:00-14:15

Waveguide-Integrated Plasmonic Ge-on-Si Photodetector Achieving 1.53 A/W at 1550 nm

Wei Chen, Yu Yu, Xinliang Zhang
Huazhong University of Science and Technology

We demonstrate a photoconductive-gain-assisted waveguide-integrated plasmonic Ge-on-Si photodetector, achieving 1.53 A/W at 1550 nm under -1.5 V bias with GHzscale bandwidth, exceeding the quantum limit at low operating voltage.

Tu3F-4 14:15-14:30

Optoelectronic Third-order Intermodulation Distortion Measurement for Photodetectors

Kunqian Yang[1], Yunqi Liao[1], Xingbang Zhu[1], Jianbin Fu[2], Min Xue[1], Shilong Pan[1]
[1]Nanjing University of Aeronautics and Astronautics, [2]Newkey Photonics Information Technology Limited Liability Company

We propose and demonstrate a measurement method to characterize third-order intermodulation distortion in photodetectors. The third-order intercept point and spurious-free dynamic range of a high-speed commercial photodetector are experimentally obtained.

Tu3F-5 14:30-14:45

Bottom-Grating-Assisted Polarization-Sensitive Ge PD with Enhanced Response at 1.6 μm

Fenghe Fu[1,2], Hui Cong[1,2], Chi Xu[1,2], Ruoyun Ji[1], Huirong Zhou[1,2], Chunlai Xue[1,2]
[1]Chinese Academy of Sciences, [2]University of Chinese Academy of Sciences

A polarization-sensitive Ge photodetector operating at 1.6 μm was developed using a CMOS compatible selective epitaxial growth process. Polarization selectivity is introduced by a bottom-grating structure, yielding an extinction ratio of about 3.