Room F (Sicily), 2F Chair: Yuki Yamada (NTT, inc.)

Tu2F June 30 (Tue), 2026
Novel Photodetectors I 10:15-11:45

Tu2F-1 **10:15-10:30**

Bandwidth Enhancement for 200-Gbaud Photodiode Using Inductive Peaking Technique based on Coplanar Waveguide

Yusuke Araki, Yuki Yamada, Takuya Hoshi, Shohei Kosuga, Fumito Nakajima
NTT, inc.

This paper investigates the impact of inductive peaking on photodiodes (PDs) with high-impedance coplanar waveguides (CPWs) for bandwidth enhancement. We demonstrate InP/InGaAs PDs with the bandwidth extended over 100 GHz and 200-Gbaud operation.

Tu2F-2 **10:30-10:45**

Ultrahigh-Power Ge-on-Si Photodetector Employing Subwavelength Grating Waveguide

Xiaoyang Zhao[1], Shiao Zhao[1], Yu Zhang[1,2]
[1]Huazhong University of Science and Technology, [2]Optics Valley Laboratory

We report a side-coupled Ge-on-Si photodetector with ultrahigh saturation current exceeding 100 mA, attributed to an integrated subwavelength grating waveguide. Furthermore, 50 Gbps non-return-to-zero (NRZ) eye diagrams were successfully obtained under photocurrent of 40 mA.

Tu2F-3 **Invited** **10:45-11:15**

200-GHz Range Photodetector Technology for High-Baud Rate Optical Fiber Communication

Toshimasa Umezawa, Atsushi Matsumoto, Kouichi Akahane, Naokatsu Yamamoto
National Institute of Information and Communications Technology

We present ultra-broadband photodetectors (PDs) operating from DC to beyond 200 GHz based on a unitravelling carrier (UTC) PD structure. We demonstrate their fundamental performance for intensity-modulation direct-detection (IMDD) and phase-shifting keying (PSK) signal detection, targeting next-generation optical fiber communication systems.

Tu2F-4 **11:15-11:30**

High-Speed Si-Based GeSn Receiver for Extended-Wavelength-Band Optical Communication

Ruoyun Ji[1], Hui Cong[1,2], Caile Wang[1,2], Yue Li[1,2], Siqi Zhang[1,2], Fenghe Fu[1,2], Chunlai Xue[1,2]
[1]Chinese Academy of Sciences, [2]University of Chinese Academy of Sciences

Si-based GeSn photodetector with a record 3-dB bandwidth exceeding 50 GHz under a low bias of 2.4 V is demonstrated. This low-voltage operation prospers the first co-packaging integration of GeSn photodetectors with transimpedance amplifiers.

Tu2F-5 **11:30-11:45**

Simultaneous Bandwidth and Saturation Enhancement in Ge–Si Photodetectors through Via-Contact Engineering

Jian Wang, Can Hua, Guanyu Chen
Chongqing University

We show that via-contact engineering reduces series resistance in waveguide-integrated Ge-Si photodetectors, simultaneously improving 3 dB bandwidth and saturation photocurrent. Measurements on 40 devices validate a fabrication-compatible strategy for high-speed, high-power microwave-photonic link applications.