Tu2G-1 **Invited** **10:15-10:45**

Silicon-Based Heterogeneous Integrated Quantum Photonic Chips

Gong Zhang
Zhejiang University

Implementing quantum information systems traditionally relies on free-space optics or discrete fiber-optic components, which suffer from large size, low reliability, and limited scalability. This presentation will highlight the team's breakthroughs in heterogeneously integrated photonic quantum information chips, including a self-testing quantum random number generator (QRNG) chip, an integrated continuous-variable quantum key distribution chip, and on-chip key components.

Tu2G-2 **Invited** **10:45-11:15**

Continuous-Variable Entanglement-Assisted Quantum Communication and Quantum Chip

Xiaolong Su, Siyu Ren, Xuezhi Zhu, Meihong Wang
Shanxi University

We demonstrate the deterministic entanglement-assisted quantum communication based on continuous-variable entangled state over 20-km fiber channels and the deterministic generation of a continuous-variable multipartite entanglement with an integrated optical chip.

Tu2G-3 **11:15-11:30**

Fully Integrated PIC-Based Phase-Encoding QKD Transmitter Packaged in a CFP2 Module

Junsang Oh, Joong-Seon Choe, Byung-Seok Choi, Ju Hee Baek, Chun Ju Youn
Electronics and Telecommunications Research Institute

We present the first PIC-based QKD transmitter packaged in a CFP2 module for phase-encoding BB84, integrating a laser diode, a delay-line interferometer, variable optical attenuators, and a phase modulator, and experimentally demonstrate promising performance.

Tu2G-4 **11:30-11:45**

1.3 km Free-Space Entanglement-Based QKD with Polarization-Entangled Photons

Taewon Kim, Hyeokin Kang, Gibeen Gu, Jaeyoon Kim, Heonoh Kim, Young-Jin Kim
Korea Advanced Institute of Science and Technology

Quantum key distribution (QKD) enables cryptographic key distribution with unconditional security. We demonstrate a campus-scale 1.3 km free-space QKD link and a Sagnac-based polarization-entangled photon-pair source using a type-II PPKTP crystal, together with pumppower-dependent efficiency characterization. Building on this platform, we will perform full QKD operation.