

Room E (Sydney), 2F

Chair: Yi-Jen Chiu (National Sun Yat-sen University)

Tu2E

June 30 (Tue), 2026

Heterogeneous Integration for Silicon Photonics

10:15-11:45

Tu2E-1 Tutorial 10:15-11:15



Micro-Transfer Printing for Heterogeneous Silicon Photonics

Gunther Roelkens
Ghent University-imec

In this tutorial I will discuss micro-transfer printing technology and its use for heterogeneous silicon photonic integrated circuits. Next-generation silicon photonics will require the intimate and scalable integration of nonnative photonic components, such as LiNbO₃ modulators and III-V opto-electronic components (amplifiers, lasers). Microtransfer printing is a technology that enables such scalable integration without fundamentally changing the silicon photonics process flow. I will also illustrate the versatility of the technology through the demonstration of e.g. heterogeneous electronic/photonic integrated circuits & quantum photonics circuits based on micro-transfer printing.

Tu2E-2 Invited 11:15-11:45

Membrane InP-based Photonic Devices on Si for Optical Interconnects

Tatsuro Hiraki, Takuro Fujii, Takuma Aihara, Yoshiho Maeda, Tadashi Minotani, Norio Sato, Tomonari Sato, Shinji Matsuo
NTT, inc.

Membrane InP-based photonic devices on silicon provide strong optical confinement and small capacitance. We review high-speed membrane InP-based modulators and integrated lasers, demonstrate a low-power transmitter, and discuss future directions including wafer-level interconnects.