

Symposium Speaker

Full Name	Hiroshi Fukuda
Affiliation	NTT
Presentation Title	III-V on Si platform and its assembly technology

Biography

Hiroshi Fukuda Senior Research Engineer, Supervisor, NTT Device technology Laboratories. He received a B.E. and M.E. in nuclear engineering from Tohoku University, Miyagi, in 1993 and 1995 and a Ph.D. in materials engineering from the University of Tokyo in 2014. In 1995, he joined the NTT LSI Laboratories, Atsugi, Japan, where he engaged in research on fabrication technology of micro photonics devices. He is currently engaged in R&D of silicon micro-photonic devices. He is a member of the Japan Society of Applied Physics, IEICE, and IEEE.

200 words abstract

The current information explosion is one of the most serious concerns in the ICT industry. The situation calls for lower cost devices with higher performance, and silicon photonics technology is now gaining attention as a solution. However, the normal silicon photonics platform alone is not adequate for practical photonics because III-V devices are required in order to implement dedicated and essential functions such as light emission, optical amplification, and high-speed modulation. To meet to this requirement, we have developed a III-Von Si platform, with which we have demonstrated several functional devices, including a direct-modulation laser diode, high power light source, and high-efficiency and compact Mach-Zehnder modulator. To reveal the potential of the devices, we demonstrated flip-chip bonding with an LD array and driver IC and direct-fiber attachment technology. III-Von-Si technology is a promising platform for enabling compact and energy-efficient photonic devices.