

Plenary Speakers



In-plane Semiconductor Membrane Lasers for Photonic Integrated Circuits

Prof. Shigehisa Arai

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Shigehisa Arai was born in Kanagawa Prefecture, Japan, in 1953. He received the B.E., M.E., and D.E. degrees in Electronics from the Tokyo Institute of Technology, Japan, in 1977, 1979, and 1982, respectively. During his Ph.D. work, he demonstrated room-temperature CW operation of 1.11–1.67- μm long-wavelength lasers fabricated by liquid-phase epitaxy. He joined the Department of Physical Electronics, Tokyo Institute of Technology, as a Research Associate in 1982, and joined AT&T Bell Laboratories, Holmdel, NJ, as a Visiting Researcher from 1983 to 1984. He became a Professor with the Research Center for Quantum Effect Electronics in 1994, and then with the Quantum Nanoelectronics Research Center (QNERC) in 2004.

He has been investigating low-power consumption DFB and DR lasers based on fine structure active regions as well as a thin semiconductor membrane structure for high-performance lasers and photonic integrated circuits.

Dr. Arai is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), the Institute of Electronics, Information and Communication Engineers (IEICE), and the Japan Society of Applied Physics (JSAP). He received prizes for science and technology including a Commendation for Science and Technology from the MEXT in 2008, an Electronics Society Award and an Achievement Award from the IEICE in 2008 and 2011, respectively.