Special Issue

Silicon Photonic Devices and Integration

Message from the Guest Editor

Silicon photonic devices and integration have been investigated widely for the unique features, such as compatibility with CMOS fabrication and potential to be monolithically integrated with microelectronic circuits. Rapid progresses have been made in design and fabrication of new concept devices, larger scale photonic integration, hybrid integration with other material platforms such as lithium niobate, III-V, two-dimensional material, and phase change material. Multiple new applications are enabled by the development of silicon photonics , such as optical phase arrays for Radar and Lidar systems, photonic neural networks for fast computing. Silicon photonic chips are expected to meet the ever-increasing demand of bandwidth, high integration density and low power consumption in existing and emerging systems. Accordingly, this Special Issue seeks to showcase research papers, and review articles that focus on novel designs, fabrication of photonic devices and chips, new developments of their applications in intra/inter-chip, short-reach and long-haul optical communications, high-frequency and broadband signal processing and optical computing.

Guest Editor

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