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Silicon Photonics Packaging: Connecting Photonic Integrated Circuits with the Outside World

Guest Editors:

Dr. Aleksandrs Marinins
Advanced Packaging Engineer at Nokia of America Corporation, Sunnyvale, CA, USA

Dr. Nouman Zia
Faculty of Engineering and Natural Sciences, Tampere University, Tampere, Finland

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Message from the Guest Editors

After decades of academic research, silicon photonic integrated circuits (PICs) are widely deployed in industry nowadays. Several foundries offer Si photonics multi-project wafer (MPW) runs, which makes the technology accessible not only to corporations, but also to small research labs and early stage startups. After wafer- and die-scale lab testing, PICs require packaging into a durable module that will connect them to the outside world and protect them from harsh environments. In the next step of Si PIC productization, the packaging technology should ensure reliable operation, high PIC performance, and low cost. Thus, there will be significant momentum in academia and industry for developing and standardizing robust packaging solutions for fast Si PIC introduction.

This Special Issue aims to highlight the current progress and recent state-of-the-art in Si PIC packaging.

Research areas may include (but are not limited to) the following: advanced fiber-to-PIC attachment (edge, grating, evanescent coupling), wafer-scale packaging, laser integration, micro-optics assembly, photonic MEMS packaging, electronic-photonic co-integration, and assembly thermal management.