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Recent Advances in Silicon Photonics Design

Guest Editor:

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Deadline for manuscript submissions:
closed (20 November 2021)

Message from the Guest Editor

The unique structure of the slot waveguide has received an increasing amount of interest since it was first demonstrated. In this structure, the optical field is confined inside the low refractive index material (slot region) which is surrounded by a high refractive index material, usually silicon. Using this unique structure leads to a variety of advantages, such as a small beat length of the guided light and a strong confinement in the slot region that results in extremely low losses. Another benefit is that CMOS-compatible materials and technology can be used in slot-waveguide fabrication.

Thus, slot waveguide technology has become a significant subject of research and growth in the understanding of nanometer-scale photonic devices. It allows low-cost optical devices by using common semiconductor fabrication techniques and their relatively simple integration with microelectronic chips.

- Semiconductor-materials-based slot waveguide technology;
- Tapers and couplers for coupling light to nano-silicon chip;
- Multiplexer/Demultiplexer for o/c-band range;
- Power combiner/splitter;
- Multislot waveguide structurer;
- Amplifiers and lasers

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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