



## Silicon and Silicon Nitride Integrated Photonics: Challenges and Opportunities

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### Message from the Guest Editors

This Special Issue explores the challenges and opportunities of silicon and silicon nitride integrated photonics. The Special Issue covers topics such as the design and fabrication of waveguides and other optical devices, the integration of nonlinear optics, and the development of integrated circuits for photonics. Thus, we encourage you to contribute review papers, original research short letters, or long articles on such topics as:

1. Silicon and silicon nitride passive waveguides and devices: design optimization, fabrication techniques, and characterization;
2. Silicon and silicon nitride active photonic devices: modulators, detectors, filters, switches, resonators, and amplifiers;
3. Integrated nonlinear optics including frequent combs and supercontinuum generation;
4. Integration of silicon and silicon nitride photonics with other material systems: 2D materials, III–V/II–VI semiconductor compounds, chalcogenide glasses, LiNbO<sub>x</sub>, VO<sub>x</sub>, magneto-optic materials, phase-change materials, etc.;
5. Applications of silicon and silicon nitride photonics, e.g., programmable photonics, mode manipulations, sensors, MIR photonics, on-chip spectrometers, etc.

