Special Issue

Silicon Photonics: Synthesis and Applications

Message from the Guest Editors

Silicon photonics is expanding its frontiers towards new applications beyond Datacom, such as sensing, microwave photonics, neuromorphic computing, motion tracking, navigation and quantum information. Aiming to meet the requirements of these new applications, Si photonics is now exploring different novel strategies that include, among others, the use of different bulk and 2D materials, development of complex design strategies assisted by artificial intelligence, synthesis of nanostructured metamaterials/metasurfaces, multilayer waveguides for 3D photonic circuits, co-integration of electronics and photonics, and high-density optical packaging of silicon photonic chips, or the exploitation of alternative physical phenomena, e.g., Kerr nonlinearities or Brillouin optomechanical interactions. This Special Issue focuses on the latest research and development of silicon photonics, targeting novel design, fabrication and integration techniques, and emerging applications.

Guest Editors

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

Editor-in-Chief

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