Special Issue

Silicon Nanodevices

Message from the Guest Editors

Nanodevices have attracted great attention in recent years due to their low power consumption and fast operation in electronics and photonics as well as high sensitivity in sensor applications. As an example, in following Moore's law, the CMOS has undergone an evolution in design and architecture in integrated circuits. In principle, scaling down of the device structure can be performed by using advanced processing, but there are always different issues, e.g., concerning contact resistance, defects, and reliability, which can affect device performance. The current technology developments drive nanodevices towards 3D integration, and the merging of electronics and photonics is inevitable. Such designs will be the ultimate goal of nanotechnology in the future. This Special Issue creates unique knowledge for the readers in nanoscale physics, device processing, and material properties.

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Deadline for manuscript submissions

closed (31 January 2022)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/69306

Nanomaterials
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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.

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