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Semiconductor Nanomaterials for Optoelectronic Applications

Guest Editor:

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Deadline for manuscript submissions:
closed (10 July 2024)

Message from the Guest Editor

In the past decades, nanotechnology has been applied to reduce the size or dimension of optoelectronic devices in which the quantum confinement of electron and hole carriers will practically optimize energy consumption. In this new trend of sustainable optoelectronic applications, high-quality semiconductor nanomaterials are convincing candidates for the fabrication of nanometer-sized optoelectronic devices. There are two methods of nanomaterial fabrication for nanodevices: the top-down and the bottom-up approach. The top-down lithographed approach (e.g., by EUV, FIB, e-beam writer) is the favorite for the manufacturing process, but the bottom-up self-assembling approach (e.g., MOCVD, MBE) is more advantageous when it comes to sample growth of defect-free and homogenous chemical composition. Both approaches benefit from the quantum effect of nanodevices derived from these semiconductor nanomaterials.

Therefore, we cordially invite professors and researchers to submit original manuscripts or reviewed articles to this Special Issue, including but not limited to the topics of methodology, fabrication, characterization, and properties for optoelectronic nanodevice applications.

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Editor-in-Chief

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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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