Special Issue

Recent Advances in Functional Semiconductor Nanostructures: From Properties to Applications

Message from the Guest Editors

In the last decades, rapid progress has enabled the realization of semiconductor structures down to the nanometer scale, by using highly sophisticated nanoepitaxial growth techniques and nanofabrication. Today, low-dimensional heterostructures continue to receive attention due to unique properties. These systems are considered ideal building blocks for the fabrication of devices exhibiting novel functionalities. As such, they are pivotal to emerging technologies and applications in areas as diverse as photonics, nanoelectronics, sensing, photovoltaics, and quantum science. This Special Issue aims to collect advances on the comprehension of the fundamental properties, the methods for the synthesis/fabrication, the physical–chemical characterization of emerging nanostructures, along with novel applications. It focuses on the different semiconductor nanostructures, including zero-dimensional (quantum dots) and one-dimensional (nanowires) nanostructures, two-dimensional layered materials and related van der Waals heterostructures.
See more information
in: https://www.mdpi.com/si/170462

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

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