Special Issue

Research Progress of Graphene-Based Photodetectors

Message from the Guest Editor

The increasing interest in developing and enhancing the performance of light detectors has led to the exploration of new materials that could replace traditional silicon-based photodetectors (PDs). In recent years, one of the most promising 2D materials has been graphene (Gr), which has attracted tremendous attention due to its electrical, mechanical, and thermal properties, which make it promising for a variety of applications such as solar cells, field effect transistors, and photodetectors. The integration of graphene with silicon to form heterojunctions is one of the strategies to improve the lifetime of the photogenerated carriers, leading to the development of high-performance optoelectronic devices. Recently, photodetectors based on graphene/Si heterojunctions have been developed, which exhibit high responsivity and detectivity. This Special Issue will present recent progress in the fabrication, design, understanding, and applications of graphene-based photodetectors, covering different fields from optoelectronics and healthcare to energy storage and material sciences.

Guest Editor

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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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