Special Issue

2D Materials and Heterostructures with Application in Optoelectronics

Message from the Guest Editor

Optoelectronic applications of 2D materials have been the focus of much of the research efforts performed on these systems, since the isolation of graphene. The unique structural and physical properties of these atomically-thick layers, and their strong interaction with light, make them indisputable candidates for their integration in devices designed to generate, detect, interact with, or control light. High mobility, fast response, and high photo-responsivity are among the targeted goals, and recently reported, for devices based on graphene, transition metal dichalcogenides, or black phosphorus. In addition, the dependence of the electronic properties on the number of layers (i.e., bandgap) or the possibility to externally tune them (i.e., by doping or by external field), further increases the potential application of 2D materials in optoelectronic devices. This Special Issue of *Nanomaterials* will cover recent advances in 2D materials and heterojunctions with applications in optoelectronics, including LEDs, lasers, photovoltaics, and photodetectors devices.

Guest Editor

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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.

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