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2D Materials and van der Waals Heterostructures for Optoelectronic Devices

Guest Editor:

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Deadline for manuscript
submissions:

closed (20 September 2024)

Message from the Guest Editor

Dear Colleagues,

2D layered materials such as graphene, black phosphorus, monolayer semiconducting transition metal dichalcogenides and hBN covers a great range of bandgap from 0 to 6 eV. Beyond this, heterostructures achieved by van der Waals stacking of these layered materials reveals more intriguing fundamental physical properties and attractive functionalities. The optical and electronic properties of 2D materials and their heterostructures can be further engineered, tuned, optimised, for example with strain, nanostructured substrate, surface chemistry and so on, which brings great opportunities in optoelectronics applications.

This Special Issue focuses on the latest theoretical and experimental developments in 2D materials and van der Waals heterostructures based optoelectronic devices. We invite authors to contribute original research articles and review articles covering the current progress in 2D materials and devices. We welcomes discussion of new ideas, as well as challenges, of using this family of nanomaterials for future applications and technologies.

Dr. Yue Wang
Guest Editor



mdpi.com/si/166058

Special Issue



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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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