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## 2D Materials and Van der Waals Heterostructures: Physics and Applications

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### Message from the Guest Editor

Dear Colleagues,

The advent of graphene, and more recently of layered 2D materials, has opened new perspectives in electronics, optoelectronics, energy harvesting and sensing applications. Layered 2D materials can be fabricated with relatively inexpensive production methods, integrated into existing semiconductor technologies, and offer new physical, chemical and mechanical properties. Electrically they can behave as metals, semiconductors, insulators or even superconductors. Consisting of covalently bonded and dangling-bond free lattices, they can form heterojunctions with each other or with bulk materials, without the need of a close lattice matching. In these heterojunctions, the participant materials are held together by weak van der Waals forces, which do not introduce significant changes at the atomic scale and essentially maintain the original electronic structure of the materials.

For further reading, please follow the link to the Special Issue Website at:

[http://www.mdpi.com/journal/nanomaterials/special\\_issues/2d\\_](http://www.mdpi.com/journal/nanomaterials/special_issues/2d_)

Prof. Antonio Di Bartolomeo

*Guest Editor*



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# 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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