

## Special Issue

# Design and Modeling of Low Dimensional Atomically Thin Structures and Devices

### Message from the Guest Editor

The advancement of graphene-based electronic and optoelectronic devices critically depends on theory and modeling development. Graphene and other two-dimensional atomically thin materials allow building scalable devices on a chip. There are stringent requirements for material properties, such as electrical mobility, thermal conductivity, optical absorption, and modulation of electrical and optical properties. The current Special Issue solicits contributions on theory, modeling, and experiments on mechanical, electrical, and optical properties of graphene, 2D van der Waals materials, 1D carbon nanotubes, and their derivatives. The experimental and theoretical topics include but are not limited to graphene properties such as:

- Electrical transport;
- Thermal transport;
- Linear and nonlinear optical properties;
- Plasmons;
- Mechanical properties;
- Spintronic application with graphene;
- Twisted bilayer graphene;
- Superconductivity, Mott insulators, magnetic phenomena;
- 1D carbon nanotubes;
- 2D transition metal dichalcogenides.

Of particular interest are manuscripts on emerging quantum effects and devices with applications in quantum information science and technology.

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### Guest Editor

Prof. Dr. Vasili Perebeinos

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### Deadline for manuscript submissions

closed (30 July 2022)



## Applied Sciences

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## About the Journal

### Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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### Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo  
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