Special Issue

Mechanics and Physics of Low-Dimensional Materials and Structures

Message from the Guest Editor

Low-dimensional materials are those that have at least one dimension small enough at the nanoscale. Their geometrical characteristics and mechanical performances, along with rich mechanical–physical–chemical coupling mechanisms have opened up new applications ranging from electronics and energy harvesting to drug delivery. By manipulating their structural or geometric patterns, low-dimensional materials can be further engineered or assembled into low-dimensional structures. Notable examples include defect-engineered 2D materials and twisted van der Waals layered structures. Due to the dimensional constraints, their mechanical performances exhibit drastic contrast with bulk materials. This Special Issue aims to present comprehensive research progress on the understanding and application of the mechanics and the physics of low-dimensional materials and structures, as well as the rational design strategies to create or enable their novel functionalities. Original research articles or review articles covering theoretical analysis, computation, and experimental approaches are all welcomed.

Guest Editor

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Deadline for manuscript submissions

closed (25 August 2025)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/226395

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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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