

## Special Issue

# Novel Physical Properties of Low-Dimensional Magnetic Materials

### Message from the Guest Editor

The emerging field of two-dimensional magnetic nanomaterials has garnered significant attention. These materials offer unique magnetic responses, enhancing the magnetic control capabilities of traditional charge-based devices. At the atomic scale, two-dimensional magnetic nanomaterials exhibit enhanced interactions among electron spins, charges, and lattices, leading to extraordinary physical properties. This Special Issue will focus on the latest advances in low-dimensional magnetic nanomaterials, particularly the exotic physical properties that arise from the coupling of magnetic order to quasi-particles. Potential topics include, but are not limited to, the following:

- Synthesis and characterization of low-dimensional magnetic materials;
- Theoretical calculations of band-structure in low-dimensional magnetic systems;
- Magneto-optical coupling in low-dimensional materials;
- Optoelectrical properties of low-dimensional magnetic materials and their interactions with magnetic states;
- Heterostructures involving low-dimensional magnetic materials;
- Applications in devices such as sensors, memory devices, spin transistors, and photovoltaic devices.

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### Guest Editor

Dr. Jia Shi

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### Deadline for manuscript submissions

closed (30 June 2025)



## Nanomaterials

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Impact Factor 4.3  
CiteScore 9.2  
Indexed in PubMed



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## About the Journal

### 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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### Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones  
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