Special Issue

Symmetry and Asymmetry in Spintronics: Foundations and Implications

Message from the Guest Editor

Spintronics holds the potential to revolutionize the electronics industry by addressing the limitation of conventional semiconductor technologies. Spintronic devices offer advantages such as non-volatility, higher speed, and lower power consumption, positioning them as a promising alternative.

This Special Issue is dedicated to examining the crucial roles that symmetry and asymmetry play in spintronics, seeking to compile cutting-edge research exploring spin transport, spin–orbit coupling, magnetoelectric effects, spin transfer torque, and more. Given that spintronics is a multidisciplinary field that integrates principles from quantum mechanics, solid-state physics, and advanced materials to develop next-generation electronic devices, this Special Issue will significantly contribute to *Symmetry*'s mission to advance knowledge in innovative technologies and promote interdisciplinary collaboration.

Topics of interest include, but are not limited to, the following:

- Symmetry and asymmetry-related phenomena in spintronics;
- Characterization of novel spintronic materials;
- Device applications and engineering;
- Experimental techniques and methodologies.

Guest Editor

Dr. Yuzan Xiong

Department of Physics and Astronomy, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599, USA

Deadline for manuscript submissions

closed (31 May 2025)

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/214931

Symmetry
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
symmetry@mdpi.com

mdpi.com/journal/symmetry

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About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

Prof. Dr. Sergei Odintsov
1. ICREA, 08010 Barcelona, Spain
2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

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