

## **Symmetry/Asymmetry and Novel Nanomaterials: Preparation, Characterizations, and Applications**

Guest Editor:

**Dr. Fariborz Tavangarian**

1. Mechanical Engineering  
Program, Pennsylvania State  
University, Harrisburg,  
Middletown, PA 17057, USA

2. Department of Biomedical  
Engineering, Pennsylvania State  
University, University Park, State  
College, PA 16802, USA

Deadline for manuscript  
submissions:

**31 May 2024**

### **Message from the Guest Editor**

Dear Colleagues,

We would like to invite you to submit your work to this Special Issue on “Symmetry/Asymmetry and Novel Nanomaterials: Preparation, Characterizations, and Applications”. Nanostructures and nanomaterials have received great attention in the fuel cell, aerospace, automotive, medical, and military industries due to their unique mechanical and physical properties. The physical properties (symmetry/asymmetry) of nanomaterials play an important role in influencing their mechanical, electrical, and chemical properties. Nanomaterials exhibit increased strength/hardness, enhanced diffusivity, improved ductility/toughness, reduced density, reduced elastic modulus, increased specific heat and surface, etc. The focus of this Special Issue is on the fabrication and characterization of nanomaterials and nanocomposites for different applications, such as automotive, paint, solar cell, and biomedical applications.

In particular, the topics of interest include, but are not limited to:

- Bioinspired nanomaterials and nanocomposites;
- Self-healing nanomaterials and nanocomposites;
- Smart structures with shape memory capabilities;
- ...



[mdpi.com/si/167685](https://mdpi.com/si/167685)

# Special Issue



an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Sergei D. Odintsov

1. Institució Catalana de Recerca  
i Estudis Avançats (ICREA),  
Passeig Luis Companys, 23,  
08010 Barcelona, Spain  
2. Institute of Space Sciences  
(ICE-CSIC), C. Can Magrans s/n,  
08193 Barcelona, Spain

## 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.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

**Journal Rank:** JCR - Q2 (*Multidisciplinary Sciences*) / CiteScore - Q1 (*General Mathematics*); Q1 (*Physics and Astronomy*); Q1 (*Computer Science*)

## Contact Us

Symmetry Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/symmetry  
symmetry@mdpi.com  
X@Symmetry\_MDPI