

Special Issue

Current Research in Nanocrystals and Their Implications for Electrochemical Energy Storage, Conversion, and Optoelectronic Applications

Message from the Guest Editors

This Special Issue aims to offer a thorough overview of the latest research trends, technological advancements, and future directions in the field of nanocrystals. By bridging fundamental science and practical applications, it seeks to inspire further innovation and collaboration among researchers, paving the way for the next generation of energy and optoelectronic technologies. We look forward to receiving your contributions and contributing to the discourse on this transformative topic. Key Highlights: (i) Advanced synthesis techniques for high-quality nanocrystals with controlled size, shape, and surface properties; (ii) Novel strategies to enhance the performance and stability of nanocrystal-based energy storage systems; (iii) Breakthroughs in nanocrystal catalysis for efficient electrochemical energy conversion; (iv) Innovations in optoelectronic devices leveraging the unique properties of nanocrystals; (v) Theoretical insights and computational models that deepen the understanding of nanocrystal behavior and guide experimental efforts.

Guest Editors

Dr. Atanu Jana

Division of Physics and Semiconductor, Dongguk University, Seoul 04620, Republic of Korea

Dr. Tarak Nath Mandal

Department of Chemistry, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu 603203, India

Deadline for manuscript submissions

12 September 2025



Nanomaterials

an Open Access Journal
by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed



mdpi.com/si/210237

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

[mdpi.com/journal/
nanomaterials](https://mdpi.com/journal/nanomaterials)





Nanomaterials

an Open Access Journal
by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed



[mdpi.com/journal/
nanomaterials](https://mdpi.com/journal/nanomaterials)



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.

Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

School of Geography, Earth and Environmental Science, University of
Birmingham, Birmingham B15 2TT, UK

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), PubMed, PMC, CAPIus / SciFinder, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Physics, Applied) / CiteScore - Q1 (General
Chemical Engineering)