

Special Issue

Semiconductor-Based Nanomaterials for Catalytic Applications

Message from the Guest Editors

In recent years, semiconductor-based nanomaterials have been the object of extensive research. These types of nanomaterials can be employed as catalysts in a number of applications of heterogeneous photocatalysis, such as air and water treatment, the synthesis of organic compounds in mild conditions, hydrogen production from water splitting, and CO₂ transformation. This Special Issue is devoted to the formulation of new semiconductor-based nanomaterials, their chemical–physical characterization via traditional and innovative experimental techniques, and their performances in photocatalytic reactions. Research and review papers related to the preparation and characterization of nanomaterials with semiconductor properties and their applications in UV-, visible-, or solar light-driven photocatalytic reactions are welcome in this Special Issue.

Guest Editors

Dr. Vincenzo Vaiano

Department of Industrial Engineering, University Salerno, via Giovanni Paolo 2, 132, I-84084 Fisciano, SA, Italy

Dr. Antonietta Mancuso

Department of Industrial Engineering, University Salerno, via Giovanni Paolo 2, 132, I-84084 Fisciano, SA, Italy

Deadline for manuscript submissions

20 November 2026



Nanomaterials

an Open Access Journal
by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed



mdpi.com/si/231352

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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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)