Special Issue

Development and Application of Advanced In Situ Microscopy and Spectroscopy Techniques for Functional Materials at the Nanoscale

Message from the Guest Editors

In recent decades, the fundamental understanding of static and dynamic processes at the nanoscale has greatly improved, owing to innovative experiments and theoretical approaches. We have seen rapid progress in the development and applications of advanced microscopy and spectroscopy techniques for nanoscale material characterization with high spatial, temporal, and energetic resolutions. In particular, radiation-based (light, X-ray and electron) and probe-based (atomic-, pizeo-, and magentic-force) microscopy and spectroscopy techniques have made fast strides and thus attracted considerable research interest. This Special Issue aims to focus on the latest theoretical developments and practical applications of novel microscopy and spectroscopy techniques that have been successfully established and applied on various nanoscale materials and devices. We aim to attract both academic and industrial researchers in order to pool together the current knowledge of nanoscale characterization of nanomaterials and to present new ideas for future applications and new technologies for advancing nanomaterial research.

Guest Editors

Prof. Dr. Zi'an Li
School of Physical Science and Technology, Guangxi University, Nanning, China

Prof. Dr. Ruibin Liu
School of Physics, Beijing Institute of Technology, Beijing 100081, China

Deadline for manuscript submissions

20 January 2026

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/220971

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

mdpi.com/journal/nanomaterials

MDPI

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/journal/nanomaterials

MDPI

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, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank:

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