Special Issue

Quantum Materials for Electronic Devices

Message from the Guest Editors

The unprecedented advancements in quantum materials and nanomaterials have unlocked new possibilities in the realm of semiconductors and electronic devices. This proposal explores the intersection of nanoscience and nanotechnology to design and engineer nanostructures that exhibit novel transport phenomena, such as nonlinear dynamics and resistive switching, which are essential for next-generation energy-efficient devices. This Special Issue emphasizes the synthesis, characterization, and application of novel quantum materials and nanodevices, integrating experimental and computational approaches to understand their fundamental properties. A particular focus is placed on energy-efficient devices for bio-inspired computing paradigms, where human-brain-inspired mechanisms guide the development of intelligent systems based on quantum materials and nanomaterials. The inherent properties of these materials—such as scalability, enhanced conductivity, sensitivity to external stimuli, and adaptive behavior—are critical to advancing energy-efficient, high-performance devices.

Guest Editors

Prof. Dr. Jingsheng Chen

Department of Materials Science & Engineering, National University of Singapore, Singapore 117575, Singapore

Dr. Erbin Qiu

Department of Physics, Center for Advanced Nanoscience, University of California–San Diego, La Jolla, CA 92093, USA

Deadline for manuscript submissions

closed (20 April 2026)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 10.3
Indexed in PubMed

mdpi.com/si/233302

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 10.3
Indexed in PubMed

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, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank:

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

MDPI