Special Issue

Two-Dimensional Materials and Metamaterials in Photonics and Optoelectronics (Second Edition)

Message from the Guest Editors

Compared to traditional materials, two-dimensional (2D) materials exhibit many unique and fascinating properties. Quantum confinement perpendicular to the 2D plane leads to new electronic and optical properties, such as relativistic carrier transport, indirect to direct bandgap transitions, and valley-polarized light coupling. The extremely small thickness allows for significant control of carrier density through electrostatic gating. The naturally passivated surfaces and weak interlayer bonding make it easy to integrate 2D materials with different types of systems. In this way, 2D materials have received widespread attention in optoelectronic and photonic applications. This present Special Issue of Nanomaterials is aimed at presenting the current state-of-the-art in application of 2D materials combined with metamaterials in photonics and optoelectronics, which includes the design and fabrication of materials and devices, experimental characterization and computational modelling studies, as well as exploitation in devices and practical applications.

Guest Editors

Prof. Dr. Zhihong Zhu
Prof. Dr. Chucai Guo
Dr. Qingwei Zhou

Deadline for manuscript submissions

15 December 2026

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/228824

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

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

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