Special Issue

Artificial Intelligence (AI) for Advanced Nanomaterials and Energy Storage Technologies: Supercapacitor and Batteries

Message from the Guest Editor

Recent advancements in Artificial Intelligence (AI) have revolutionized the development of advanced nanomaterials for energy storage technologies, including supercapacitors and batteries. AI-driven approaches enable the design and discovery, structural optimization, and performance prediction of precise materials, leading to enhanced energy storage solutions. The integration of AI in material design facilitates the identification of novel high-performance nanomaterials. AI-based future sustainable energy material innovations and cost-effective energy storage solutions for renewable energy systems are a top priority. Subtopics of focus may include: Advanced energy storage materials;
Novel new dimensions: Carbon-based nanomaterials and their heteroatom-doped GO, RGO, CNT, CNFs;
Artificial Intelligence and future energy research;
Artificial Intelligence for energy storage materials discovery;
Solar-based and hybrid energy storage innovations and AI;
AI for supercapacitor development: merits and demerits;
AI for battery materials design;
Behind Li-ion batteries and alternative battery systems for safe EV batteries.

Guest Editor

Dr. Vediyappan Thirumal
School of Mechanical Engineering, Yeungnam University, Gyeongsan 38541, Republic of Korea

Deadline for manuscript submissions

25 October 2025

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/232703

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)