Special Issue

Nanomaterials for CO_2 Capture and Conversion

Message from the Guest Editors

This Special Issue of *Nanomaterials* aims to provide a platform for sharing cutting-edge research and advancements in nanomaterial utilization for CO2 capture and conversion. We welcome contributions across various topics, including but not limited to the following:

- Synthesis and characterization of novel nanomaterials for CO2 capture and conversion;
- Mechanistic studies and theoretical modeling of CO2 adsorption and conversion processes on nanomaterials;
- Development of advanced nanocomposites and hybrid materials for enhanced CO2 capture efficiency and selectivity;
- Applications of nanomaterials in catalytic CO2 conversion reactions, such as electrocatalysis, photocatalysis, and thermal catalysis;
- Integration of nanomaterial-based technologies into practical CO2 capture and utilization systems.

Submissions can encompass experimental and theoretical perspectives, along with interdisciplinary approaches that merge materials science, chemistry, engineering, and environmental science. Through this collaborative effort, we aim to advance our understanding and utilization of nanomaterials for CO2 capture and conversion, contributing to a more sustainable and greener future.

Guest Editors

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Deadline for manuscript submissions

closed (6 June 2025)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/201300

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mdpi.com/journal/nanomaterials

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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

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