

## Special Issue

# Nanomaterials for CO<sub>2</sub> 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 CO<sub>2</sub> capture and conversion. We welcome contributions across various topics, including but not limited to the following:

- Synthesis and characterization of novel nanomaterials for CO<sub>2</sub> capture and conversion;
- Mechanistic studies and theoretical modeling of CO<sub>2</sub> adsorption and conversion processes on nanomaterials;
- Development of advanced nanocomposites and hybrid materials for enhanced CO<sub>2</sub> capture efficiency and selectivity;
- Applications of nanomaterials in catalytic CO<sub>2</sub> conversion reactions, such as electrocatalysis, photocatalysis, and thermal catalysis;
- Integration of nanomaterial-based technologies into practical CO<sub>2</sub> 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 CO<sub>2</sub> capture and conversion, contributing to a more sustainable and greener future.

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### Guest Editors

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Department of Chemical and Biological Engineering, Iowa State University, Ames, IA, USA

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### Deadline for manuscript submissions

closed (6 June 2025)



## Nanomaterials

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## 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.

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### Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

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