



an Open Access Journal by MDPI

## Nanomaterials in CO<sub>2</sub> Capture

Guest Editors:

### Message from the Guest Editors

**Prof. Dr. Prashant Kumar**

Global Center for Clean Air  
Research (GCARE), School of  
Sustainability, Civil and  
Environmental Engineering,  
Faculty of Engineering and  
Physical Sciences, University of  
Surrey, Surrey GU2 7XH, UK

**Dr. Ming Zhao**

Division of Solid Waste  
Management, School of  
Environment, Tsinghua  
University, Beijing 100084, China

Deadline for manuscript  
submissions:

**closed (20 December 2018)**

Decarbonizing the global energy supply is a central challenge if the world is to achieve significant CO<sub>2</sub> emission reductions necessary to avoid the dangers of climate change. Carbon capture and sequestration (CCS) has been entrusted with about 20% of the reduction in anthropogenic CO<sub>2</sub> emission. CO<sub>2</sub> capture is essential for CCS, however, most of the current capture technologies are still on their way to commercialization. Nano-scale tuning of sorbent materials has been regarded as an approachable way to enhance the efficiency and cost effectiveness of CO<sub>2</sub> capture processes. The topics that would be covered in this Special Issue include, but are not limited to, nanomaterials (e.g., Calcium based; Magnesium based; Alkali zirconate; Alkali silicate; Hydrotalcite; MOFs; Carbon materials; Solid amine-based; Graphite/graphene-based; Zeolite-based; Silica-based; Polymer-based; Alkali metal carbonate-based; waste derived). Articles focusing on the environmental aspects related to nanomaterials, carbon capture or life cycle analysis will also be welcome.



[mdpi.com/si/12286](https://mdpi.com/si/12286)

# Special Issue



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Shirley Chiang**

Department of Physics, University  
of California Davis, One Shields  
Avenue, Davis, CA 95616-5270,  
USA

## 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.

## 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 - Q1 (*Physics, Applied*) / CiteScore - Q1 (*General Chemical Engineering*)

## Contact Us

*Nanomaterials* Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/nanomaterials](http://mdpi.com/journal/nanomaterials)  
[nanomaterials@mdpi.com](mailto:nanomaterials@mdpi.com)  
[X@nano\\_mdpi](#)