

Special Issue

Novel Membranes for Carbon Capture and Conversion

Message from the Guest Editors

Membranes play a critical role in carbon capture and conversion processes, especially in technologies like CO₂ electrolysis, CO₂ separation, and CO₂ reduction reactions (CO₂RR). These membranes are responsible for facilitating selective ion transport, enhancing reaction efficiency, and ensuring the separation of different chemical environments during the conversion of CO₂ into valuable products. Membranes directly influence both process efficiency and economic feasibility, progress in membrane materials, design, and fabrication methods is essential for overcoming current challenges and enabling the large-scale deployment of CO₂ utilization systems. This is an interesting area of research, with substantial potential to mitigate CO₂ emissions and contribute to the development of a sustainable circular carbon economy. We are excited to invite you to contribute papers that address advances in materials, mechanisms, and systems related to membranes used in carbon capture and conversion, that advance our understanding of membrane structure, performance, processes, and applications in the context of carbon capture and conversion.

Guest Editors

Dr. Jieyuan Liu

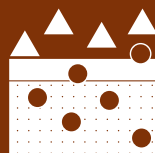
Department of Mechanical and Industrial Engineering, University of Toronto, Toronto, ON, Canada

Dr. Naiying Du

Clean Energy Innovation Research Center, National Research Council Canada, Ottawa, ON, Canada

Deadline for manuscript submissions

31 August 2026



Membranes

an Open Access Journal
by MDPI

Impact Factor 3.6
CiteScore 7.9
Indexed in PubMed



mdpi.com/si/226924

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

[mdpi.com/journal/
membranes](https://mdpi.com/journal/membranes)





Membranes

an Open Access Journal
by MDPI

Impact Factor 3.6
CiteScore 7.9
Indexed in PubMed



[mdpi.com/journal/
membranes](https://mdpi.com/journal/membranes)



About the Journal

Message from the Editor-in-Chief

You are cordially invited to contribute a research article or a comprehensive review for consideration and publication in *Membranes* (ISSN 2077-0375). *Membranes* is an international, peer-reviewed open access journal of membrane technology published monthly online by MDPI. The journal covers the broad aspects of the science and technology of both biological and non-biological membranes, including membrane dynamics and the preparation and characterization of membranes and their applications in water, environment, energy, and food industries. Articles contributing to better understanding of transport processes in all types of membranes are also welcome. The scientific community and the general public have unlimited and free access to the content as soon as it is published. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Spas D. Kolev
School of Chemistry, The University of Melbourne, Melbourne, VIC
3010, Australia

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), Ei Compendex, PubMed, PMC, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Polymer Science) / CiteScore - Q1 (Chemical Engineering (miscellaneous))