# Special Issue

# Advanced Membrane Technologies for Gas Capture and Clean Energy: Multiscale Insights and Applications

## Message from the Guest Editors

This Special Issue aims to bring together cutting-edge research on advanced membrane technologies for gas capture and energy-related applications. We welcome contributions that cover the entire development pipeline—from computational modeling and material design to experimental validation and field-scale implementation. Topics of interest include, but are not limited to, the following:

- Development of novel membranes with high selectivity and permeability
- Membrane materials for $CO_2$ capture, hydrogen purification, and biogas upgrading
- Integrated membrane systems for clean energy processes
- Simulation and machine learning approaches in membrane design
- Membrane performance under realistic or harsh operating conditions

## Guest Editors

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## Deadline for manuscript submissions

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# 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 accessjournal 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
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