

## Special Issue

# Preparation of Mixed-Matrix Membranes and Their Application for Gas Separation

### Message from the Guest Editors

Mixed-matrix membranes (MMMs) have garnered significant attention in recent years due to their unique combination of properties from a continuous polymer matrix embedded with discrete inorganic particles, offering a formidable solution for gas separation processes. This issue delves into the preparation methodologies of MMMs, emphasizing the importance of filler dispersion, polymer-filler compatibility, and membrane processing techniques. Furthermore, the extensive applications of MMMs in gas separation such as carbon capture, hydrogen purification, and natural gas processing are highlighted along with their potential in addressing energy and environmental challenges. The significance of MMMs in gas separation lies in their ability to overcome the limitations of traditional polymeric membranes, improving thermal and chemical stability, enhancing mechanical strength, and extending operational lifespan. This Special Issue aims to provide a comprehensive overview of the latest advancements in the preparation of MMMs and their application in gas separation, serving as a valuable resource for researchers seeking to harness the potential of MMMs for gas separation.

### Guest Editors

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### Deadline for manuscript submissions

closed (30 April 2025)



## Membranes

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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 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.

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### Editor-in-Chief

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