Special Issue

Ceramic Membranes: Preparation, Modification and Multidisciplinary Applications

Message from the Guest Editors

Ceramic membranes are known for their exceptional thermal, chemical, and mechanical stability, making them ideal for water treatment, gas separation, and other demanding applications. Recently, research has expanded beyond traditional uses. Advances in nanostructured and hybrid materials, along with catalytic and electrochemical integration, have enabled new applications in energy and environmental fields. These include solid oxide fuel and electrolysis cells, membrane reactors for hydrogen, syngas, and methanol production, as well as CO_2 separation and utilisation. Artificial intelligence and digital modelling are also transforming membrane design and assessment. This Special Issue invites contributions that reflect both the established and emerging roles of ceramic membranes in energy and environmental sustainability. We welcome original research and reviews on topics including:

- Novel fabrication and characterisation
- Membranes in fuel cells and electrolysis
- Catalytic/electrochemical membrane reactors
- CO_2 separation and utilisation
- AI-driven design and sustainability assessments

Guest Editors

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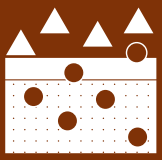

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About the Journal

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

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