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Advanced Membranes for Gas Separations and CO₂ Capture

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Message from the Guest Editors

With a small footprint, high energy efficiency, and simplicity of operation, membrane technology has been recognized as an environmental friendly and effective approach for industrial gas separations and CO₂ capture from power plants. Nevertheless, advanced membrane materials are imperative to achieve superior gas separation efficiencies and reduce the capital and energy cost.

Gas separation membranes often suffer a ubiquitous trade-off between gas permeability and selectivity; namely, highly permeable membranes exhibit low selectivity and vice versa. The purpose of this Special Issue is to publish recent advances in membrane materials with both high permeability and high selectivity. The topics of interests include, but are not limited to, novel membrane materials (polymer, metal organic frameworks, carbon materials, zeolites, covalent organic frameworks, and mixed matrix materials) for various gas pair separation (including H₂/CO₂, CO₂/N₂, CO₂/CH₄, O₂/N₂, and olefin/paraffin), preparation and characterization of thin-film composite membranes or hollow fiber membranes, simulations and modellings of membrane performance and processes, etc.



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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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