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New Trends in Bioinspired and Biomimetic Membranes

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Message from the Guest Editors

Bioinspired membranes, a key focus of this Special Issue, replicate nature's remarkable filtration mechanisms, closely mimicking the selective permeability and self-healing characteristics inherent in biological systems. Biomimetic membranes, the other pillar of our focus, closely replicate the intricate structures and functions of natural materials such as proteins and lipids. This Special Issue will also delve into the role of nanotechnology in membrane science. Molecular-scale engineering is now within reach, allowing for the meticulous tailoring of membrane properties. This breakthrough promises to elevate selectivity and overall performance to unprecedented levels, marking a significant milestone in this field. Furthermore, the integration of cutting-edge 3D printing and microfabrication techniques enables the creation of custom-designed membranes featuring intricate geometries.

The overarching purpose of this Special Issue is to provide a comprehensive overview of the latest trends and innovations in bioinspired and biomimetic membranes. Through a multidisciplinary lens, we aim to showcase the transformative potential of these technologies across various industries.





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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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