

Special Issue

Biological Membranes In Silico –Unraveling Mechanisms Through Molecular Dynamics Simulations

Message from the Guest Editors

Molecular dynamics (MD) simulations have emerged as a powerful complementary tool, capable of capturing biological processes at atomic resolution and femtosecond timescales, all within a fully controllable virtual environment. MD simulations have provided valuable insights into membrane-associated phenomena, such as membrane protein dynamics; protein–lipid interactions; ion channel and transporter dynamics; membrane fusion and fission; and the biophysical properties of lipid bilayers. This Special Issue invites original research articles, reviews, and perspective pieces that highlight the latest advancements in MD simulations of biological membranes. Topics may include, but are not limited to, algorithmic innovations, force field development, hybrid modeling approaches, and integrative studies combining simulations with experimental data. Together, we aim to showcase how molecular dynamics is shaping the future of membrane biology.

Guest Editors

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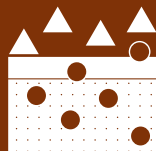
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About the Journal

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 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.

Editor-in-Chief

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