Special Issue

Near-Membrane-Surface Effects During Membrane Distillation

Message from the Guest Editors

Membrane distillation (MD) has emerged as a promising membane-based thermal separation process, offering unique advantages in desalination, wastewater treatment, and chemical recovery. However, near-membrane-surface effects, including fouling, scaling, polarization effects, and vapor transport dynamics, intricately affecting heat and mass transfer across and along the membane, ultimately influencing the efficiency and feasibility of MD processes. This Special Issue seeks to compile cutting-edge research focused on understanding the near-membrane-surface effects in MD. Topics of interest include, but are not limited to, the following: Advances in membrane surface engineering;
Fouling and scaling phenomena and mitigation strategies;
Temperature polarization and concentration polarization near the membrane surface;
The modeling and simulation of near-membrane-surface behaviors;
Innovative approaches to enhancing interfacial transport properties.
This Special Issue aims to provide a comprehensive platform to advance our understanding of near-membrane effects in MD, providing new insights and fostering technological innovations in this field.

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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 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

Prof. Dr. Spas D. Kolev
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