Special Issue

Process Intensification, Multiscale Simulation, and Optimization in Membrane Reactor Engineering

Message from the Guest Editors

Recent advances in membrane reactor systems have opened new avenues for integrating reaction and separation processes, significantly enhancing efficiency, selectivity, and energy savings. This Special Issue on "Process Intensification, Multiscale Simulation, and Optimization in Membrane Reactor Engineering" aims to collect high-quality contributions focused on the design, modelling, and performance optimization of membrane reactors for chemical, environmental, and energy applications. We welcome original research and review articles in the following areas (including, but not limited to):

- Process intensification strategies via catalytic and non-catalytic membrane reactors;
- Multiscale simulation (molecular to process scale) of transport and reaction phenomena;
- Advanced materials for membrane reactors: dense, porous, dual-phase, or mixed matrix membranes;
- Integration of reaction engineering with membrane separation for hydrogen, syngas, CO2, or ammonia-related processes;
- Dynamic modelling, control, and optimization in hybrid systems and reactive separations;
- Techno-economic analysis and lifecycle assessments of intensified membrane processes.

Guest Editors

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Message from the Editor-in-Chief

You are invited to contribute either a research article or a comprehensive review for consideration and publication in *Processes* (ISSN 2227-9717). *Processes* is published in open access format – research articles, reviews, and other content are released on the internet immediately after acceptance. The scientific community and the general public have unlimited, free access to the content. As an open access journal, *Processes* is supported by the authors and their institutes through the payment of article processing charges (APCs) for accepted papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

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