# Special Issue

# Proton Exchange Membrane Fuel Cells: Advancements in Materials, Performance, and Sustainable Applications

## Message from the Guest Editors

This Special Issue is dedicated to advancing the science and technology of Proton Exchange Membrane Fuel Cells (PEMFCs) by exploring key aspects such as material properties, system performance, degradation mechanisms, and innovative applications. It seeks to highlight research on the materials that form the core of PEMFCs, including membranes, catalysts, and electrodes, with a focus on improving their conductivity, durability, and chemical stability. This Special Issue delves into the performance of PEMFCs under various operational conditions, offering insights into efficiency, power output, and fuel utilization while identifying factors that impact these metrics. It also addresses the challenges related to degradation mechanisms, proposing strategies to enhance the longevity of PEMFCs. Additionally, this Special Issue examines system integration and optimization, emphasizing the role of PEMFCs in transportation, stationary power generation, and other applications while considering thermal and water management. The environmental and economic implications of PEMFCs, including life cycle analysis and sustainability, are also explored.

## Guest Editors


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## Deadline for manuscript submissions

closed (31 July 2025)


# Membranes

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Impact Factor 3.6
CiteScore 7.9
Indexed in PubMed

mdpi.com/si/215713

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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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