



Advanced Flexible Membranes for Next-Generation Electrochemical Energy Devices

Guest Editor:

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Deadline for manuscript
submissions:

20 June 2024

Message from the Guest Editor

Dear Colleagues,

High-performance and robust membranes/separators are needed for the variety of electrochemical energy devices (EEDs). Depending on the type of EED, the design attributes and desired characteristics of an ideal membrane will vary. In particular, for next-generation EEDs (e.g., solid-state lithium batteries, metal–air batteries, hybrid flow batteries, and Li–CO₂ batteries), the development of highly conductive, selective, and stable membranes with high mechanical flexibility is of significant importance. Furthermore, some of these EEDs may need to be designed for portable/wearable electronics, which further limits the design domain for such membranes.

Considering the critical role of this class of flexible membranes in enabling next-generation EEDs, this Special Issue is dedicated to the application of these membranes in such devices. We also welcome the submission of recent works on the design and synthesis of novel and mechanically flexible membranes, as well as critical review papers from top and emerging research groups.

Dr. Yasser Ashraf Gandomi
Guest Editor





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Message from the Editor-in-Chief

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