

Special Issue

Advanced Polymer Electrolytes for Fuel Cell and Lithium-Ion Battery Applications

Message from the Guest Editors

Polymer electrolytes are at the forefront of innovation in electrochemical energy systems, offering unique advantages such as mechanical flexibility, a lightweight design, and tuneable ionic conductivity. As the demand for high-performance, safe, and sustainable energy technologies grows, polymer-based electrolytes have become essential components in fuel cells and lithium-ion batteries. This Special Issue aims to showcase recent advances in the design, synthesis, and application of polymer electrolytes tailored for these energy devices. We invite original research articles, reviews, and perspectives that explore novel polymer architectures, gel and solid-state electrolytes, nanocomposite systems, and interface engineering strategies. Contributions addressing ion transport mechanisms, thermal and electrochemical stability, and integration into flexible or wearable devices are particularly welcome. The Issue also encourages submissions on biopolymers and recyclable materials for green energy applications. It aims to serve as a platform for researchers to share insights and breakthroughs that drive the development of next-generation energy storage and conversion technologies.

Guest Editors

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Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 4.7.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Alexander Böker

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