

## Special Issue

# Gel Polymer Electrolytes for Energy Storage

### Message from the Guest Editors

This Special Issue is dedicated to the synthesis, properties and applications of gel polymer electrolytes synthesis, characterization, and applications. Within this context, a broad range of subjects, including ionic conductivity, mechanical properties, electrochemical stability, and applications in various energy storage devices will be discussed. Gel polymer electrolytes (GPEs) are advanced polymer systems that play a critical role in developing efficient and safe energy storage devices. In practical applications, GPEs are used in batteries, supercapacitors, and fuel cells, where they enhance device performance by providing high ionic conductivity and mechanical stability. The precise control of the molecular structure and composition of GPEs enables their use in a wide range of technological applications, offering improvements in energy density, safety, and longevity of energy storage systems. This Special Issue will include a few representative examples, illustrating the multifaceted nature of the gel polymer electrolyte problem. It is hoped that the topics will stimulate new research and discoveries in the field of gel polymer electrolytes for energy storage.

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### Guest Editors

Dr. Peiyuan Guan

Prof. Dr. Shengshui Hu

Dr. Zhemi Xu

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### Deadline for manuscript submissions

31 March 2025



## Gels

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## About the Journal

### Message from the Editor-in-Chief

*Gels* (ISSN 2310-2861) is recently established international, open access journal on physical and chemical gel-based materials. The journal aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. General topics include but not limited to synthesis, characterization and applications of new organogels, hydrogels and ionic gels made either from low molecular weight compounds or polymers, composite and hybrid materials where a metal is by some means incorporated into the gel network, and computational studies of these materials in order to provide a better understanding of gelation mechanism. We cordially invite you to consider publishing with us and contribute with your own grain of sand to the advance in this fascinating field.

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### Editor-in-Chief

Prof. Dr. Esmail Jabbari

Biomimetic Materials and Tissue Engineering Laboratory, Department of Chemical Engineering, University of South Carolina, Columbia, SC 29208, USA

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