Special Issue

Next-Generation Fuel Cells: Innovations in Materials and Performance

Message from the Guest Editor

The key to achieving the dual carbon goals is to actively develop green and low-carbon energy. Hydrogen energy, with its high calorific value, high conversion efficiency, and environmental friendliness, has significant potential in both traditional sectors like transportation, power generation, and heating, and emerging fields such as drones, robotics, and deep space and underwater exploration. This Special Issue aims to introduce the latest research advancements in novel fuel cell membrane electrodes, including materials, structure, state estimation, life prediction, and control strategies. The topics of interest include, but are not limited to, the following:

- High-temperature proton exchange membranes;
- Catalysts;
- Gas diffusion layers;
- Bipolar plate flow fields;
- Interface design;
- Membrane electrode assembly integration structures;
- Lightweight system design;
- Advanced characterization techniques;
- Advanced marine, land, and air application scenarios;
- Extreme environmental challenges and responses;
- Data/model-driven approaches;
- Fault diagnosis;
- Life prediction;
- Control strategies.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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