



Current Challenges and Future Opportunities of Hydrogen Energy 2024

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Deadline for manuscript
submissions:

closed (25 July 2024)

Message from the Guest Editors

Dear Colleagues,

The scope of this Special Issue may include, but is not limited to, the following topics:

1. Hydrogen production techniques: this sub-theme focuses on methods for producing hydrogen, such as water electrolysis powered by renewable energy sources, solar-driven photolysis, and biological processes like bio-photolysis.
2. Hydrogen storage solutions: This sub-theme addresses the challenges of efficiently storing and transporting hydrogen.
3. Fuel cell technology: This sub-theme is dedicated to the development and optimization of hydrogen fuel cells, including Proton Exchange Membrane (PEM) fuel cells, Solid Oxide Fuel Cells (SOFCs), and others.
4. Integration of hydrogen in energy systems: This sub-topic explores the role of hydrogen in integrating and balancing renewable energy systems, such as solar and wind.
5. Economic and lifecycle analysis of hydrogen energy: This sub-theme focuses on the economic aspects and lifecycle impacts of hydrogen energy.
6. Safety, risk, and environmental impact of hydrogen: This sub-theme is dedicated to the safety aspects of hydrogen production, storage, and use.





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Message from the Editor-in-Chief

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