Special Issue

Hydrogen Energy Storage: Materials, Methods and Perspectives

Message from the Guest Editor

Hydrogen is emerging as a pivotal player. As an abundant and versatile energy carrier, hydrogen offers solutions to the variability inherent to renewables. However, hydrogen's low volumetric density and potential explosivity pose challenges, especially concerning storage and transportation. We are inviting submissions on the following topics:

- **Materials Science:** Advancements enhancing hydrogen production, storage, and conversion.
- **Storage Techniques:** Innovative storage methods, from compressed gas and liquid hydrogen to solid-state and underground options.
- **Technological Insights**: Integration of hydrogen storage with renewables, grid management, and real-world usage.
- **Economic and Environmental:** Analyses of hydrogen storage's economic feasibility and environmental impact, considering the full hydrogen lifecycle.
- **Regulation and Market Dynamics:** Exploration of how policy, regulation, and market trends influence hydrogen energy storage's trajectory and its stakeholders.
- **Future Outlook:** Predictions and insights into hydrogen storage's future, covering potential breakthroughs and anticipated challenges.

Guest Editor

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Deadline for manuscript submissions

closed (5 June 2025)

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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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