Special Issue

Advances in Hydrogen Production and Hydrogen-Based Power Systems

Message from the Guest Editors

Hydrogen has emerged as a cornerstone of global decarbonization efforts, with transformative potential for clean energy transitions across industries, transportation, and power generation. Its versatility as a zero-carbon energy carrier supports renewable integration and the decarbonization of hard-to-abate sectors. Advances in electrolysis, pyrolysis, and hydrogen-based systems such as fuel cell hybrids and hydrogen-gas turbine integrations are redefining grid flexibility. However, key challenges remain, including improving electrolyzer efficiency, developing cost-effective storage, mitigating environmental impacts, and enhancing energy conversion and reliability. This Special Issue of *Energies* invites submissions on hydrogen production and hydrogen-based power systems, covering material science, thermal science, system integration, and related fields.

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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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