Special Issue

Advances in Marine Energy Storage Technology

Message from the Guest Editor

The accelerating global shift toward marine renewable energy systems necessitates innovative, robust, and sustainable energy storage solutions tailored to the unique challenges of aquatic environments. Marine Energy Storage Technology has emerged as a critical enabler for stabilizing offshore power grids, enhancing energy resilience, and unlocking the full potential of ocean-based renewables.

This Special Issue seeks to advance the frontiers of marine energy storage by curating high-impact research on technological innovations, cross-disciplinary synergies, and field-tested applications.

- Underwater compressed air energy storage
- Flexible gas/liquid storage technology
- Materials for low-permeability flexible gas storage membranes
- Underground/underwater reservoir dynamics and geomechanically modeling
- Corrosion-resistant materials and protective coatings for marine environments
- Pressure-adaptive energy storage modules and underwater containment structures
- Thermal management and waste heat utilization in offshore systems
- AI/ML-driven predictive maintenance and energy management systems
- Marine-compatible hydrogen storage and power-to-gas solutions.

Guest Editor

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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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