

Special Issue

Emerging Trends in Energy Harvesting Materials and Technologies for Sustainable Energy

Message from the Guest Editors

Emerging energy harvesting technologies—such as micro-electromagnetic generators (micro-EMGs), piezoelectric generators (PEGs), thermoelectric generators (TEGs), and triboelectric nanogenerators (TENGs)—offer promising solutions to achieving long-term, stable, and maintenance-free power sources for these distributed sensors. To fully realize the potential of self-powered IoT systems, continued advancements are needed in material innovation, device miniaturization, energy conversion efficiency, and biocompatibility. Research into material modifications, performance optimizations, integration strategies, and reliable fabrication processes will play a pivotal role in pushing these technologies toward practical, scalable deployment. This Special Issue invites cutting-edge contributions from both academia and industry to address these challenges. It seeks original research articles, comprehensive reviews, and case studies that highlight new materials, novel device architectures, enhanced energy conversion mechanisms, and strategies for practical implementation.

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Deadline for manuscript submissions

15 June 2026



Energies

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 8.3



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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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