Special Issue

Low-Frequency Vibration-Based Electromagnetic Energy Harvesters

Message from the Guest Editor

Energy harvesting is an important developing technology of the twenty-first century. It can be defined as the gathering of naturally available energy for local use. The most commonly used vibration-based EH mechanisms are electromagnetic (EM). The mechanical vibration sources contain a vibrating structure, a human body movement, water/air flow-induced vibration, etc. The features (nature, amplitude, and frequency) of the mechanical excitation depend on the vibration sources. Using low-frequency vibrations for EH is attractive due to its availability throughout the ambient environment. However, significant power generation at low-frequency vibrations at fixed acceleration amplitude is challenging because the frequency decreases with the decrease in power flow. This challenge can be overcome using frequency wideband mechanisms, for example, nonlinear springs, multi-frequency harvesters, harvester array, mechanical stoppers, and frequency tunable mechanisms. The Special Issue will present recent developments and analyze, model, and implement suitable and reliable mechanical vibration electromagnetic EHs to scavenge significant power from low-frequency vibrations sources.

Guest Editor

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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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