Special Issue

Theory and Applications of Thermoelectric Materials and Devices

Message from the Guest Editors

The development and wide application of thermoelectric generation as a user-friendly, direct energy conversion technology are limited by two main factors: the relatively low conversion efficiency of thermoelectric generators (TEGs) and the limited availability of thermoelectric materials for large-scale production of high-performance TEGs for industrial applications. Thermoelectricity could be a future leader in waste heat recovery, with applications in two main domains. The first deals with the use of heat emitted from a radioisotope to supply electricity to various devices. Space exploration is the only area for which the application of thermoelectricity has been successful. In the second domain, a natural heat source is utilized for producing electricity; an example of this is seen in gas thermoelectric generators (TEGs), which are widely used for the cathodic defense of gas tube lines (in the northern areas of Russia, Canada, USA) and operate as autonomic energy stations.

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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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