Special Issue

Future Trends in Thermoelectric Performance and Applications of Materials

Message from the Guest Editor

Exactly 200 years ago, in 1821, Thomas J. Seebeck discovered the Seebeck effect, which opened a new door to generating electricity by scavenging waste heat, providing a promising carbon-neutral solution to the energy and environmental crisis. With the development of rigorous theory, sophisticated material synthesis techniques, and advanced characterization methods, in the past two centuries, and especially in the last three decades, thermoelectric materials have witnessed prominent improvement. Many new compounds have been discovered, motivated by the novel concept of "phonon glass electron crystal" and unconventional chemical bonding mechanisms. It is high time to collect some high-quality research work or reviews to highlight the cutting-edge development of thermoelectric materials and to discuss the future applications.

We welcome all kinds of research on thermoelectrics, including the discovery of new thermoelectric materials by high-throughput screening, optimization of thermoelectric properties by energy band and defects engineering, advanced characterization of microstructures in thermoelectrics, and design and fabrication of thermoelectric devices.

Guest Editor

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Deadline for manuscript submissions

closed (20 March 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/97611

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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