Special Issue

Thermoelectric Thin Films, Thick Films, and Composites: From Materials to Devices

Message from the Guest Editor

Thermoelectric materials have long attracted significant attention due to their direct thermal-to-electrical energy conversion capability without moving parts or harmful emissions. Recent advancements in material synthesis, structural engineering, and performance optimization have further expanded their potential for wearable power generation, micro-scale cooling, and other niche applications where lightweight, flexible, and micro/nanoscale materials are essential.

Key Research Areas

- Synthesis and fabrication techniques—approaches for preparing thin films, thick films, and composite thermoelectric materials, including diverse printing methods.
- Characterization of structural, electrical, and thermal properties—advanced experimental techniques to evaluate and optimize performance.
- Fundamental electronic and thermal transport phenomena and mechanisms—understanding the physics governing thermoelectric behavior through both experimental and simulation studies.
- Device-level studies—prototype fabrication, performance evaluation, and potential applications in energy harvesting, wearable electronics, and IoT devices.

Guest Editor

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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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