

Special Issue

Materials and Devices for Advanced Thermal Energy Harvesting and Management

Message from the Guest Editor

The ever-increasing demand for energy, coupled with concerns about climate change and greenhouse gas emissions, urgently obliges us to find more sustainable energy resources. Annually, approximately 70% of global energy consumption dissipates as waste heat, predominantly from industrial processes, commercial buildings, residential sources, and transportation. This makes waste heat one of the largest, yet largely unexploited, energy sources. Recovering even a fraction of this waste heat, alongside developing clean energy generation and thermal management techniques, could profoundly transform our energy future. Accordingly, this Special Issue invites research papers and review articles focusing on (1) novel design, fabrication, processing, and applications of thermoelectric materials and devices; (2) advanced thermal energy harvesting techniques, including thermoelectric, thermomagnetic, and pyroelectric materials and devices; and (3) advanced solid-state cooling and thermal management techniques, such as Peltier coolers, thermal capacitors, thermal rectifiers, and thermal diodes.

Guest Editor

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Editor-in-Chief

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