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Micro and Nano-Structured Energy Harvesters and Thermal Generators

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

Thermal energy remains our primary driver accounting for over 95% of our total energy consumption. In this field, small-scale thermal generators and energy harvesters have the potential to convert unused, or wasted, thermal energy directly into electricity. New micro and nano-fabrication techniques for manufacturing generators and energy harvesters, along with recent developments in material synthesis, allow for more effective devices capable of powering autonomous systems, eliminating toxic batteries, improving device performance, and reducing the need for maintenance. Various trends in device optimization have improved energy yield and efficiency leading to more powerful devices and real-world applications. This includes structured and patterned device architectures for enhanced heat transfer, high aspect ratios for reduced thermal conductivity, and thin-film devices for flexible applications. Eventually, large-scale manufacturing and deployment of energy harvesting devices and generators can lead the way to a sustainable and free energy future.

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Message from the Editor-in-Chief

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