Special Issue

Advances in Hybrid Energy Harvesting: Materials, Structures and Applications

Message from the Guest Editors

Hybrid energy harvesting can be defined as a procedure in which wasted ambient energy from various sources, such as light, heat, movement, vibration, or electromagnetic signals, is captured and converted to electric energy through transduction mechanisms such as photovoltaic, thermoelectric, pyroelectric, piezoelectric, and electromagnetic. Compared to conventional energy-harvesting devices, hybrid systems possess a significant advantage in that they can produce energy continuously, regardless of the environmental conditions. For example, a hybrid harvester consisting of a photovoltaic panel and a thermoelectric generator (TEG) can produce electric power during the day, mainly due to solar energy conversion. However, at night, TEGs continue to provide energy, taking advantage of temperature differences. Therefore, hybrid energy harvesters continuously provide stable, constant energy. As such, hybrid energy-harvesting systems could represent promising alternatives, especially for replacing batteries in low-power electronic devices and wearables, making them an important technology for achieving a sustainable society in the future.

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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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