Special Issue

Advanced Energy Conversion and Storage Microdevices

Message from the Guest Editor

Energy conversion and storage systems, the increasing demand for energy, and the environmental impacts of non-sustainable energy resources have attracted much attention over the past few decades. This has led to the development of photovoltaics, thermoelectrics, piezoelectrics, triboelectrics, batteries, fuel cells, supercapacitors, and many other technologies. Recently, advanced energy conversion and storage systems in a smaller form factor have received an immense amount of attention and been integrated into soft electronics, Internet of Things (IoT) devices, personal mobile devices, biomedical systems, and human-machine-interfaced wearable electronics. To drive such compact devices under constrained conditions, a sustainable energy supply is essential, as an example, to the long-term operation of wearable biomedical sensors for continuous monitoring. In addition, on-chip micro/nano technology has been integrated into photovoltaic devices and electrocatalytic devices based on nanostructured materials. Advanced energy conversion and storage systems in microdevices are the key to self-powered, compact electronics.

Guest Editor

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Deadline for manuscript submissions

closed (15 September 2021)

Micromachines

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Impact Factor 3.0
CiteScore 6.0
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