



Laser Processing and Advanced Manufacturing of Microscale Energy Storage Devices

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Message from the Guest Editors

With portable and miniaturized electronic devices becoming increasingly pervasive in our daily live, there is a growing demand for lightweight, flexible, and highly-efficient microscale energy storage devices. Nowadays, in-plane ultrathin microscale devices usually demonstrate a higher power density, but sacrifices energy density, owing to the fast 2D ion diffusion but a low mass utilization; additionally, the thicker pattern inversely improves energy density but limits power density. In a recent concept, 3D micro-battery designs based on micro- and nanostructured architectures could potentially double energy density by fully utilizing the limited available space.

This special issue is dedicated, but not limited to, the following aspects of electrode materials:

- laser processing including laser nanostructuring, laser cutting and laser 3D printing
- microstructure, spectroscopic, 3D and in-situ characterization
- electrochemical characterization
- modeling
- flexible Li-ion batteries, Na-ion batteries and metal-air batteries
- supercapacitors
- 2D materials



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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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