



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 life, 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

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