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PROCEEDINGS

Additive Manufacturing of Energy Storage Devices

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ABSTRACT

With the ever-growing demand for miniature electronics and portable devices, the need for new types of micro-sized, low-cost and high-performance electrochemical energy storage devices becomes a cutting-edge research frontier. Advanced manufacturing technology (such as 3D printing) has brought broad application prospects and new opportunities to the construction of advanced electrochemical energy storage materials and devices. With a focus on "advanced manufacturing of new energy storage materials and devices", we carried out interdisciplinary research on 3D/4D printing of wearable miniature batteries and supercapacitors, integrable energy devices and systems. Notably, a universal 3D printing approach towards advanced electrochemical energy storage materials and devices has been realized, and corresponding excellent electrochemical performance has been obtained [1-3]. In addition, the construction of soft system-level energy system is preliminarily realized, and a reliable application using self-powered energy storage systems is explored [4,5]. The intrinsic electrochemical energy storage mechanism is in-depth studied as well.

KEYWORDS

3D printing; energy storage devices

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