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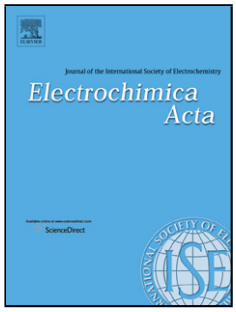

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Bi-material Anode Based on Porous Graphitic Carbon for $Li_4Ti_5O_{12}$-PGC/$LiFePO_4$ Hybrid Battery Capacitor

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Abstract

Porous graphitic carbons (PGC) are synthesized to be used in internal parallel hybrid devices. The hybrid devices are assembled with a $LiFePO_4$ cathode, and an anode based on a mixture of PGC and $Li_4Ti_5O_{12}$. Then the hybrid devices are characterized by galvanostatic charge/discharge, rate charge/discharge and cycle performance testing. The results show that PGC hybrid devices possess better performance than the commercial activated carbon hybrid device. Moreover, the internal parallel hybrid device with 25% PGC, denoted as T3P1F, exhibits an optimal performance with high energy density, high power density and stable cycling performance.

Keywords

Porous graphitic carbon, internal parallel hybrid, petroleum coke, lithium-ion battery, supercapacitor

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