Short Communication

Controllable Fabrication of LiFePO_4 Cathode Materials with Multiple Morphologies for Lithium Ion Batteries

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Pure LiFePO_4 with multiple morphologies, such as nanoplate, nanocubes, and self-assembled rose-like structures, were synthesized via hydrothermal process employing surfactant CTAB as soft-template. The addition of surfactant is the key factor for controlling the crystal growth of the particles. Among these products, LiFePO_4 nanoplates with preferential direction of *b*-axis delivers the highest capacity at 0.1 C, and the most stable cycle performance, indicating a great advantage of shape-control chemistry in nanomaterials preparation, and showing an enormous potential as cathode materials for high-performance lithium ion batteries.

Keywords: LiFePO_4 , Cathode materials, Hydrothermal method, Morphology control, Lithium ion batteries.

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