Short Communication

Biosynthesis and Characterization of LiFePO₄/C Composite Using Baker's Yeast

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Based on the biosynthesis method, an ellipsoidal LiFePO₄/C composite is successfully prepared by a simple and effective biomimetic hydrothermal method. Baker's yeast cells not only as structural templates but also as bio-carbon sources in the process of biosynthesis. As a result, the best LiFePO₄/C composite shows a very high capacity of 158.6mAh g⁻¹ at 0.1C, which is much higher than pristine LiFePO₄ material (124.7mAh g⁻¹ at 0.1C). Also, cyclic voltammogram and electrochemical impedance spectra measurement demonstrate that the LiFePO₄/C composites with Baker's yeast cells have excellent and reversible electrochemical performance. Therefore, biosynthesis would become an effective method for making high-power lithium ion batteries.

Keywords: LiFePO₄/C composite, biosynthesis, bio-carbon sources, Baker's yeast cells, electrochemical performance

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