Short communication

Synthesis and Characterization of Mn_2O_3 nanorods as Anode Materials for Lithium Ion Batteries

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MnOOH nanorods were synthesized by a simple precipitation method employing manganese sulfate and potassium permanganate as raw materials and CTAB as surfactant and used as a precursor to prepare Mn_2O_3 nanorods. Comprehensive study of the structure and performance of the Mn_2O_3 nanorods was carried out by various physical and chemical experiments, such as ultrasound microscopy and electrochemical tests. According to X-ray diffraction, scanning electron microscopy and transmission electron microscopy observations, the Mn_2O_3 crystallizes very well and has a homogeneous rod morphology. The width and length of the nanorods were 200~300 nm and 2~4 μm , respectively. Further analysis of the electrode performance of the material revealed that it delivers a high second discharge capacity of 1005 $\text{mAh}\cdot\text{g}^{-1}$ at 0.1C when used as an anode material for lithium-ion batteries.

Keywords: MnOOH; Anode materials; Mn_2O_3 ; Lithium ion battery.

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