Short Communication

Synthesis of $\text{Li}[\text{Li}_{0.2}\text{Mn}_{0.54}\text{Ni}_{0.13}\text{Co}_{0.13}]\text{O}_2$ Cathode Material in Acetate System for Lithium-Ion Battery

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This paper adopted the co-precipitation method with acetate as raw material to prepare $\text{Li}[\text{Li}_{0.2}\text{Mn}_{0.54}\text{Ni}_{0.13}\text{Co}_{0.13}]\text{O}_2$ in acetic acid system, which was analyzed by XRD, SEM and electrochemical testing methods, studying the performance of the cathode material under different calcining temperature and calcine time. The results showed that the optimum calcines temperature and time of the sample were respectively 800°C and 8h; under the optimal calcine temperature and time, the first charge and discharge capacity was 161.788mAh/g and the discharge specific capacity was 92.242mAh/g at 0.1 C rate; after the 20 times cycle test, the charge and discharge efficiency of materials can be over 95%.

Keywords: Lithium-ion battery; Acetate system; Anode material; Calcine temperature; Calcine time

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