Short Communication

Preparation and Electrochemical Performance of Various Morphologies Cobalt Oxide as Anode Materials for Lithium-ion Batteries

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Morphology controlled cobalt oxides are successfully prepared via hydrothermal reaction by monitoring the hydrothermal time. After that, the two different morphologies of cobalt oxide (CO-100, CO-130) are used as anode materials for lithium-ion batteries. The SEM and TEM images show that the CO-100 exhibits hollow sphere structure, while the CO-130 displays layered hollow sphere structure. The electrochemical results indicate that the CO-130 has more excellent cycle stability and capacity value than the CO-100. This phenomenon is ascribed to the novel structure of as-prepared CO-130, which could provide sufficient space for the electrolyte storage and wetting.

Keywords: Hollow sphere; Cobalt oxide; Capacity; Electrochemical performance

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