Short Communication

Preparation of (MnO₂/RGO)/Li₇La₃Zr₂O₁₂/LiCoO₂ Solid State Lithium Ion Batteries and Theirs Electrochemical Performance

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Lithium ion batteries (LIBs), also known as energy conversion and storage systems, can provide much greater energy density and power density, and superior cycle life, but they are still limited by the safety issue which arises from their combustible organic electrolytes. Here, a novel all solid state lithium ion batteries (ASSLIBs) have been prepared using Li₇La₃Zr₂O₁₂, MnO₂/RGO and LiCoO₂ as the solid Li electrolytes, the active anode and cathode material, respectively. A coating method is used for the LIBs preparation. As a result, the novel type LIBs exhibit superior electrochemical performance, impressive cycling stability and better safety. It is indicated that the promising synthetic method used in this work can pave the way for designing safety LIBs with excellent electrochemical performance.

Keywords: Lithium-ion batteries, All solid state, Li₇La₃Zr₂O₁₂, Electrochemical performance

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