Effect of Ether Electrolyte on the Electrochemical Performance of Cu₂S

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With the widespread popularization of rechargeable portable devices, lithium-ion batteries have been researched in depth and have brought huge economic benefits. To improve the energy density and safety of lithium-ion batteries, research on new materials is urgent. Cu₂S has attracted the attention of researchers for its excellent physicochemical properties. It not only has an excellent reversibility of electrochemical lithium storage with high energy density but also has a low manufacturing cost. The electrolyte is responsible for transporting electrons and ions in the lithium battery. It is one of the important modules of the battery and has an important impact on the electrochemical performance of the battery. At present, there is very little research on the suitable electrolytes for Cu₂S. The effects of different types of ether electrolytes on the electrochemical performance of Cu₂S are studied in this paper. In addition, an activation process of the Cu₂S electrode material during the initial cycles is also studied.

Keywords: Cuprous sulfide, Electrolyte, Activation process

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