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Studies on Synthesis and Electrochemical Properties of Amorphous SnO-Based Anode Materials for Lithium Batteries

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Abstract: The SnO-based anode materials for lithium ion rechargeable batteries were synthesized through rheological phase reaction and pyrolysis of precursors at about 350°C. The products were characterized by XRD and electrochemical measurements. The results showed that the prepared samples, $\text{Sn}_{1.0}\text{Al}_{0.4}\text{B}_{0.6}\text{P}_{0.4}\text{O}_{3.5}$ (TABP) and $\text{Sn}_{1.0}\text{B}_{0.6}\text{P}_{0.4}\text{O}_{2.9}$ (TBP), were amorphous and they exhibited large lithium storage capacities. The electrochemical properties of TBP are better than that of TABP.

Key words: Tin-based composite oxides; Lithium ion batteries; amorphous material; rheological phase reaction