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SULPHIDE BASED MATERIALS AS POTENTIAL ANODES IN LITHIUM ION CELLS

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Abstract

Sulphides based compounds PbS and SnS have been studied as possible anode material in lithium ion cell. PbS was prepared by the chemical bath deposition technique and SnS by the double decomposition method. Both samples were characterized by the powder X-ray diffraction technique and energy dispersive analysis of X-rays (EDAX). The room temperature electrical conductivity of PbS is $2.6 \times 10^{-4} \text{ S cm}^{-1}$ and SnS is $5.3 \times 10^{-7} \text{ S cm}^{-1}$ while at 90° C the electrical conductivity of PbS is $3.3 \times 10^{-4} \text{ S cm}^{-1}$ and SnS is $2.90 \times 10^{-6} \text{ S cm}^{-1}$. Cyclic voltammetry determined the potential anode ability of these materials in lithium ion batteries.

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