

ELECTRODEPOSITION OF SCANDIUM FROM AN IONIC LIQUID SOLUTION

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Abstract

In the present study the electrodeposition of scandium from ionic liquids is researched, as an alternative to high temperature molten salts electrolysis. Initially the dissolution of Sc in a form of a chloride salt in the ionic liquid is studied. The solutions prepared are characterized in terms of conductivity and viscosity and the reduction of Sc from the solution prepared is researched by cyclic voltammetry, which showed a cathodic loop at -2.7V vs Fc/Fc+(Fig. 1) attributed to Sc reduction. Moreover the solution was used under potentiostatic polarization at -2.9V for a total duration of 24h on an Cu cathode and the deposit was identified by SEM –EDS and XPS analysis and metallic Sc was proved to be electrodeposited.