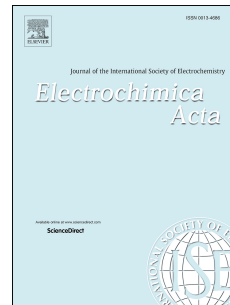


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## Electrodeposition of Manganese Thin Films on a Rotating Disk Electrode from Choline Chloride/Urea Based Ionic Liquids

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### Abstract

The electrodeposition behavior of manganese from the choline chloride/urea based deep eutectic solvent is studied on a rotating disk electrode. Additionally, the effect of the organic additive glycine is analyzed and the characteristics of deposited Mn films are examined. It is determined that Mn deposition will occur in this solvent at potentials below -1.2 V (vs. Ag), and is accompanied by one or more side reactions. Glycine is found to inhibit the deposition of Mn. In addition to an analysis of the potential dependent deposition behavior, this report studies the morphology of galvanostatic manganese deposits to determine the effect of the rate of Mn deposition.

### Keywords

metallic manganese, electrodeposition, deep eutectic solvents, glycine, choline chloride

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