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Distribution of copper deposited under forced-convection conditions at a contour cathode

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Abstract

The effect of hydrodynamic conditions and solution composition on the distribution of copper electrodeposited on a contour cathode (profile parameters: a cylindrical cavity 1.5–3 mm in diameter and 0.55–2.56 mm in depth) is studied. In the case of high stability of the intermediate reduction product, Cu(I), a purposeful decrease in the current efficiency for metal at Reynolds numbers 50 to 250 has a pronounced leveling effect. When reduction Fe(III) + e → Fe(II) occurs in parallel to the main cathodic process, the coating's uniformity significantly improves.

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