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Electrodeposition and Corrosion Analysis of Zn-Fe Alloy Coatings

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ABSTRACT

Zn–Fe alloys were electrodeposited on mild steel plates and their morphology were evaluated. Electrodeposition was carried out using electrolytic sulphate bath with glycine as an additive. The composition of the electrolytic bath, experimental parameters and current density was optimized using Hull cell. The corrosion properties of developed coatings were evaluated in 3.5% NaCl solution using potentio-dynamic polarization and electrochemical impedance spectroscopic techniques. Zn-Fe alloy coatings at 4 A dm^{-2} presented a remarkable corrosion resistance performance due to morphology changes in the alloy.

Keywords: Zn-Fe alloy, SEM, Corrosion resistance.

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