

The influence of SiC particles on the corrosion resistance of electroless, Cu-P composite coating in 1 M HCl

Abstract

The present paper aims to compare the corrosion resistance of the electroless Cu-P-SiC with Cu-P composite coating on carbon steel in 1 M HCl solution by the weight loss, potentiodynamic polarisation and electrochemical impedance spectroscopic (EIS) techniques. The study reveals that, the corrosion current density (I_{corr}) and the double layer capacitance (C_{dl}) values decrease, the charge transfer resistance (R_{ct}) and inhibition of efficiencies ($IE\%$) increase with the incorporation of SiC particles in the Cu-P matrix indicating the improvement in corrosion resistance.