

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.