

Electrochemical Studies of Some Schiff Bases on the Corrosion of Steel in H₂SO₄ Solution

Authors : Ahmed A. Farag, M. A. Hgazy

Abstract : The influence of three Schiff bases (SB-I, SB-II, and SB-III) on the corrosion of carbon steel in 0.5 M H₂SO₄ solution was studied by potentiodynamic polarization and electrochemical impedance spectroscopy (EIS) techniques. The inhibition efficiency increases with the concentration of the Schiff bases and follow the trend: SB-III > SB-II > SB-I. Tafel polarization measurements revealed that the three tested inhibitors function as anodic inhibitors. The thermodynamic parameters K_{ads} and ΔG°_{ads} are calculated and discussed. The Langmuir isotherm equation was found to provide an accurate description of the adsorption behaviour of the investigated Schiff bases. Depending on the results, the inhibitive mechanism was proposed.

Keywords : Schiff bases, corrosion inhibitors, EIS, adsorption

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