Aquilaria malaccensis as a Green Corrosion Inhibitor for Mild Steel in HCl Solution

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The methanolic extract from the leaf of Aquilaria malaccensis was confirmed to inhibit the corrosion of mild steel in 1 mol dm⁻³ HCl based on gravimetric and electrochemical methods, and the leaf extract was found to inhibit corrosion by as much as 94.49 % at the concentration of 1500 ppm. The leaf extract acted as a mixed-type, but predominantly cathodic inhibitor for the potentiodynamic polarization measurement. The adsorption of the leaf extract on the surface of mild steel was by a mixed-type, but predominantly physisorption process, fitting the best into the Langmuir adsorption isotherm model. The surface morphology analysis revealed a less damaged surface when the leaf extract was added.

Keywords: Aquilaria malaccensis, corrosion inhibitor, mild steel, HCl

FULL TEXT

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