



Inhibition Effect of 4-[[4-(dimethylamino)benzylidene]amino]-5-methyl-4H-1,2,4-triazole-3-thiol on the Corrosion of Maraging Steel in 1.5M HCl

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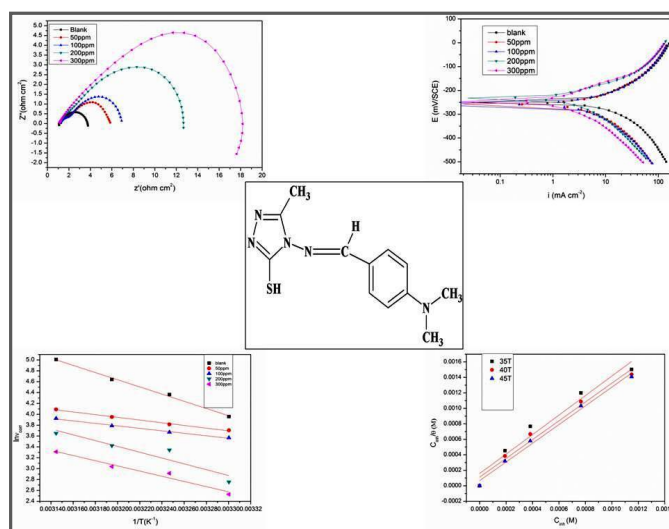
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ABSTRACT

The inhibition effect of the synthesized Schiff base, (4-[[4-(dimethylamino)benzylidene]amino]-5-methyl-4H-1,2,4-triazole-3-thiol)[DBAMTT] on corrosion of maraging steel in 1.5M HCl was evaluated using electrochemical techniques such as potentiodynamic polarization and electrochemical impedance spectroscopy (EIS). Results showed that, with increase in temperature and concentration of the inhibitor there was an increase in inhibition efficiency. DBAMTT acts as a mixed type inhibitor. Adsorption of the inhibitor on the metal surface follows Langmuir adsorption isotherm. Corrosion activation and thermodynamic parameters were calculated. Scanning electron microscope technology with Energy dispersive X-ray spectroscopy (SEM-EDX) was used to study the surface morphology of maraging steel.

Graphical Abstract



Keywords: : Corrosion inhibition, Maraging Steel, Schiff base, Hydrochloric acid Potentiodynamic polarization, EIS.