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Application of new azomethine as corrosion inhibitor on mild steel in acidic medium: Electrochemical, thermodynamic and SEM investigations.

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Abstract : 1-(4-Nitrophenyl-imino) -1 (phenylhydrazono) - propan-2-one (NOAM) was studied as a corrosion inhibitor for the protection of mild steel in 1 M HCl solution by means of weight loss, polarization and electrochemical impedance spectroscopy. The inhibition efficiency was found to increase with increasing inhibitor concentrations and decreases with increasing temperatures. Some thermodynamic and kinetic parameters were calculated and discussed. The adsorption of inhibitor on mild steel surface, obeyed the Langmuir adsorption isotherm. Polarization studies showed that inhibitor behave as mixed-type inhibitor. Scanning electron microscopy (SEM) was performed for surface analysis of the uninhibited and inhibited mild steel samples.

Keywords : corrosion, inhibition, electrochemical, SEM