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Studies on the reduced dissolution of stainless steel in industry environment- A laboratory approach

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Abstract: The reduction of dissolution of Stainless less steel 304 could be achieved by using 1,1-Diallyl-3-(2,3-dimethyl-6-quinoxaliny) thiourea (DDQT) as inhibitor in 5M Na₂SO₄. The computational quantum mechanical analysis for inhibition performance of the compound has been studied using values of E_{HOMO}, E_{LUMO}, ΔE and dipole moment, mass loss, gasometric and electrochemical studies. Potential-Current Curves manifested that the inhibitor follows mixed type of inhibition in industry environment. The adsorption of inhibitor on SS 304 surface obeyed Temkin's adsorption isotherm.

Keywords : Corrosion, potential, impedance, inhibition.

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