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Inhibition effect of jackfruit (*Artocapus heterophyllus*) leave extract on the corrosion of mild steel in 1 M HCl medium

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Effect of water extract of ripe jackfruit leaves as a green corrosion inhibitor for mild steel and the effect of temperature on inhibition efficiency of the extract in 1M HCl medium were studied using weight loss measurements. The behavior of the inhibitor was investigated using potentiodynamic polarization techniques. The inhibition efficiency of the extract increased with increasing concentration of the extract and decreased with increase in temperature. The adsorption of the inhibitor, water extract of ripe jackfruit leaves on mild steel surface obeys the Langmuir adsorption behavior, giving evidence that adsorption mainly takes place by chemisorption and it was verified from the estimated thermodynamic parameters of the process, equilibrium constant, K_{ads} and ΔG^0_{ads}. Investigation on effect of temperature on adsorption behavior discovered that the chemisorption of water extract of ripe Jackfruit leaves on mild steel surface is not activated. Potentiodynamic polarization studies revealed that the extract behaved as a mixed type inhibitor and the results are in good agreement with the results of weight loss measurements.

Key words: Adsorption, corrosion inhibitor, jackfruit leaf extract, Langmuir isotherm

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