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# An experimental approach towards anticorrosive potential of Areca fat species at aluminum/test solution (HCl/NaOH) interface

N. Raghavendra\*, J. Ishwara Bhat

\*Department of Chemistry, Mangalore University, Mangalagangothri, Karnataka 574199, India.

**Abstract :** In the present investigation, we extracted Areca fat species from dry arecanut seed by using hexane as a solvent through soxhlet extraction apparatus. Weight loss and Tafel techniques were employed to study the inhibition role of Areca fat species on aluminum (Al) metal in both acid (0.5 M HCl) and base (0.1 M NaOH) systems. Weight loss (mass loss) studies indicated that, loss in the weight of Al decreases with increasing the amount of Areca fat species, which is due to adsorption of inhibitory (Areca fat) species to an electrode (Al) surface and obeys Langmuir adsorption mode. Mechanism of inhibition property of Areca fat species on the Al surface was discussed by kinetic and thermodynamic parameters. The nature of inhibition (type of inhibitor) was further confirmed by Tafel curves. Further, Scanning electron microscopy (SEM) and atomic force microscopy (AFM) techniques were used in order to confirm the chemical (weight loss) and electrochemical (Tafel curve) results.

**Keywords :** Areca fat species; Aluminum; Weight loss; Tafel curves; Scanning electron microscopy.

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