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Corrosion Inhibition of Aluminium in Hydrochloric Acid Using *Bacopa monnieri* Leaves Extract as Green Inhibitor

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Abstract : The inhibitive action of *Bacopa monnieri*(Brahmi)leaves extract on corrosion of aluminium in hydrochloric acid solution was investigated through weight loss, potentiodynamic polarization and electrochemical impedance spectroscopic (EIS) methods.The effect of inhibitor concentrations on different acid concentrations was investigated. The present study revealed that the percentage of inhibition efficiency (I.E.) is enhanced with increase of inhibitor concentration and decrease with rise in temperature. The inhibitive action of the extract is discussed in view of adsorption of *Bacopa monnieri* molecule on the metal surface. It was found that the adsorption follows Langmuir adsorption isotherm. Tafel plots of polarization study indicate that the *Bacopa monnieri* leaves extract acts as a mixed type inhibitor. Maximum I.E. of *Bacopa monnieri* leaves extract was found 91.85% at 1.2 g/L inhibitor concentration in 0.75M HCl solution.

Key words : Corrosion, Aluminium, *Bacopa monnieri*, HCl, inhibition, Polarization, EIS.

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