Short Communication

Study the Corrosion Inhibition of Carbon Steel in 1 M HCl Using Extracts of Date Palm Waste

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In this study, extracts of both treated and untreated date palm tree waste were used as inhibitors of carbon steel corrosion in 1 M HCl. The date palm wastes used were the fiber and leaflets of the plant, and the treatment process involved gum arabic solution. The electrochemical measurements showed that the extracts were efficient inhibitors. The treated wastes were more efficient inhibitors than untreated waste, and the leaflets were better inhibitors than the fibers. The effect of temperature on inhibition efficiency, thermodynamic parameters, and adsorption isotherms for the treated inhibitors were studied. It was found that the adsorption was endothermic, occurred spontaneously, and that the adsorption data fit Langmuir isotherm model.

Keywords: Carbon steel, Hydrochloric acid, Corrosion inhibition, Date palm, Adsorption

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