

Extraction of green inhibitor and study of their antioxidant effectiveness of ecological corrosion

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Abstract : Several methods are available to prevent or retard corrosion of metallic materials, the use of inhibitors is one of the best technique to ensure their protection in contact with aggressive media such as hydrochloric acid medium. The environmental toxicity of organic corrosion inhibitors has prompted the search for green corrosion inhibitors as they are biodegradable, do not contain heavy metals or other toxic compounds. As in addition to being environmentally friendly and ecologically acceptable, plant products are inexpensive, readily available and renewable. The objective of this work is the extraction of limonene from orange peels and study their effectiveness on the corrosion of X42 steel in HCl medium. The analysis of inhibitor was evaluated by chemical methods, and the electrochemical study shows that the addition of limonene to the medium induces a reduction in the corrosion rate of the steel in HCl medium. Other parameters may influence its inhibitory activity such as immersion time, concentration of inhibitor, the nature of media (acidic or basic).

Keywords : Metal and alloys; Acid medium; corrosion inhibitors; Green inhibitors; limonene