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Extracts of olive inflorescence flower pre-anthesis, at anthesis and grain pollen as eco-friendly corrosion inhibitor for steel in 1M HCl medium

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Abstract

This work is devoted to examining the effectiveness of aqueous extracts of olive flower pre-anthesis, anthesis and grain pollen olive (*Olea europaea* L.) on corrosion of mild steel in 1 M HCl solution; The weight loss measurements, polarization curves and electrochemical impedance spectroscopy (EIS) infrared spectroscopy methods were employed to evaluate corrosion rate and inhibition efficiency. The corrosion inhibition efficiencies of olive flower inflorescence pre-anthesis, anthesis and grain pollen are achieved 94%, 95.9%, and 94.8% in 1 M HCl, respectively. The inhibition efficiency is greatly reduced as the temperature is increased; the experimental results show that corrosion inhibition efficiency increases with concentration of the sample extract; polarization studies show that olive flower inflorescence pre-anthesis, anthesis and grain pollen extracts acts as a mixed inhibitor. © 2018 by CEE (Center of Excellence in Electrochemistry).

Author Keywords

Corrosion; HCl solution; Inhibitor; Olive flower; Steel

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