

عنوان مقاله:

Evaluation Effect of Citrus Aurantium Peel Extract as an Environmentally Friendly Inhibitor for the Corrosion of
AISI-۱۰۳۰ in ۱ m Sulfuric Acid Media

محل انتشار:

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نویسنده:

خلاصه مقاله:

In this research, the corrosion inhibition of Citrus Aurantium peel extract as a green and environmentally friendly inhibitor on the corrosion of mild steel in ۱ M sulfuric acid media has been investigated. The studies were evaluated using weight loss (WL), electrochemical impedance (EIS) and potentiodynamic polarization (PDP) methods. And all the tests were in good agreement and showed that the efficiency increases with increasing concentration of inhibitor. EIS showed that the Citrus Aurantium peel extract formed a protective layer on the metal surface and a yield of ۹۸% was achieved using ۱۵۰۰ mg / L inhibitor. Polarization curves showed that the inhibitor affects both anodic and cathodic reactions and inhibitor is a mixed inhibitor. Thermodynamic and adsorption studies showed that the inhibitor adsorption on the surface follows the Langmuir adsorption isotherm model and the adsorption is spontaneous both physically and chemically. Also, the chemical properties of green inhibitor were investigated by FTIR, which shows the presence of O and N and aromatic groups in Citrus Aurantium peel as effective factors in corrosion inhibition. J. Damavand ۱, I. Danaee ۲*, H. Eskandari ۳ ۱ Senior Technical Inspector, Iran Oil Pipelines and Telecommunications Company, Bandar Abbas, Iran ۲ Professor, ۳Associate Professor, Abadan Oil College, University of Oil Industry, Abadan, Iran

کلمات کلیدی:

,Inhibitor, mild steel corrosion, Citrus Aurantium Peel Extract, green inhibitor, H_2SO_4 , AISI-۱۰۳۰
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