EuroSciCon

2nd Edition of EuroSciCon Conference on

Chemistry

February 19-20, 2019
Prague, Czech Republic

J Org Inorg Chem 2019, Volume: 5
DOI: 10.21767/2472-1123-C1-021

PLANT EXTRACTS AS A GREEN AND SAFE CORROSION INHIBITOR FOR STEEL ALLOY IN AQUEOUS SOLUTIONS

Anees A Khadom[1] and Baker M Abod[2]

[1]College of Engineering-University of Diyala, Iraq
[2]Technical Engineering College-Middle Technical University, Iraq

Corrosion control of mild steel in saline water solution by pomegranate leaf extract (PLE) is investigated at different inhibitor concentration and temperature by using weight loss method. Inhibitor performance is enhanced with decrease of temperature and increases with the raise of inhibitor concentration. Adsorption follows Langmuir adsorption isotherm with negative values of adsorption heat, signifying a stable and spontaneous process of inhibition. Mathematical models were suggested to construct a relationship between the corrosion rate data and independent variables with high correlation coefficients. Quantum chemical parameters of inhibitor were calculated by using the AM1-SCF method to simulate the adsorption of the *PLE* molecules on steel surface.

aneesdr@gmail.com