عنوان مقاله:

Melilotus officinalis Extract as Green Corrosion Inhibitor for Carbon Steel in Hydrochloric Acid Solution

محل انتشار:

نهمین سمینار ملی شیمی و محیط زیست ایران (سال: 1398)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Ali Babaei - *Department of Chemistry, University of arak, arak, I.R. IRAN*

Maryam Iranpour - *Department of Chemistry, University of arak, arak, I.R. IRAN*

خلاصه مقاله:

Natural inhibitors are considered because of the absence of harmful environmental effects. Melilotus officinalis is a member of the Fabaceae family. It is a biennial herb, native in Europe and Asia. Melilotus officinalis contains coumarinand related compounds such as melilotic acid and o-coumaric acid, flavones, volatile oils, resins and tannins. When dry they have a bitter taste and hay like smell due to coumarin. Since these compounds have anticorrosive properties, melilotus officinalis Extract (MOE), was investigated as a green corrosion inhibitor for carbon steel in 0.5 M HCl solution using weight loss, potentiodynamic polarization, electrochemical impedance spectroscopy (EIS). Observed results showed a decrease in cathodic and anodic reactions rate in Tafel plots. Also, EIS data showed charge transfer resistance was increase. Polarization curves reveal that the investigated extract is a mixed type inhibitor. The inhibition efficiency was found to increase with increase in the investigated extract concentration. Our electrochemical results showed that concentration of 800 ppm of MOE can achieved to high inhibition efficiency in 0.5 M HCl.

کلمات کلیدی: