Electrochemical Noise Analysis of Different Herbal Compounds for Copper Exposed to Chloride Media.

A. M. Nagiub

Chemistry Department, Faculty of Science, Al-Azhar University, Assuit-71524, Egypt.
E-mail: adham.nagiub@gmail.com

doi: 10.20964/2016.09.19

Received: 5 May 2016 / Accepted: 28 June 2016 / Published: 7 August 2016

Four different herbal compounds, Caraway (Carum Carvi), Cumin (Cuminum Cyminum), Anise (Pimpinella Anisum) and Hibiscus (Hibiscus Sabdarriffla) have been tested as green corrosion inhibitor for copper exposed to 0.5 M NaCl. The corrosion Inhibition has been studied using electrochemical noise (EN) and electrochemical impedance spectroscopy (EIS). The comparative analysis of the results obtained showed that EN is an effective tool for screening of new corrosion inhibitors. Polynomial trend removal method has been used to remove the trend in the potential and current fluctuations during the measurement periods. The results gathered showed very good inhibition efficiency. Generally, EN showed a good correlation with EIS in this study.

Keywords: Copper, EN, EIS, Herbal compounds

FULL TEXT

© 2016 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).