Corrosion Inhibition of Carbon Steel in Hydrochloric Acid by *Chrysanthemum Indicum* Extract

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Biodegradable and inexpensive plant extracts are one of the most promising materials for future metal pickling inhibitors. The corrosion inhibition performance of the *Chrysanthemum indicum* extract on carbon steel in 1 mol/L hydrochloric acid solution was evaluated by potentiodynamic polarization, EIS and SEM. Then, FTIR was applied for characterization of functional groups in the *Chrysanthemum indicum* extract. Electrochemical measurement results showed that the inhibition performance of 500 mg/L extract on carbon steel at 25 °C was up to 93%. The FTIR spectra showed that the extract contained O–H, N–H, C–H, C=C, C–N and C–O groups, which may be the characteristic group of excellent corrosion inhibitor. The adsorption of this inhibitor on the surface of carbon steel is Langmuir adsorption. This study provides an experimental supplement for the applied of plant extracts as metal pickling corrosion inhibitors.

Keywords: corrosion inhibitor, extract, carbon steel, electrochemical test

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