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A STUDY OF CORROSION INHIBITOR OF MILD STEEL BY CARBOXYMETHYLCHITOSAN IN 1 M hcl

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The inhibition effect of commercial carboxymethyl chitosan (CMC) on the corrosion of mild steel in 1 M HCl was studied by various techniques such as weight loss measurement, polarization and electrochemical impedance spectroscopy (EIS). It was found as the inhibition efficiency increase directly with the concentration of CMC. The highest inhibition efficiency for all tests was obtained at the concentration of 7×10^{-4} M. Polarization studies show that CMC behaves as mixed-type inhibitor and predominantly inhibit at the cathodic site. EIS technique revealed that the corrosion inhibition of mild steel was mainly controlled by charge transfer process. The values of activation energy (E_a) for mild steel corrosion inhibition and various thermodynamic parameters were also calculated. The adsorption nature of mild steel corrosion inhibition follows the Langmuir adsorption isotherm.

Keywords: CMC; chitosan; mild steel; corrosion inhibition.

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General differential transformation method for higher order of linear boundary value problem

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In this paper, we propose the generalization of differential transformation method to solve higher order of linear boundary value problem. Previous studies show that the differential transformation method is a powerful method to solve several lower order linear boundary value problems. In our study, we generalized the method so that one can solve