Electrochemical Studies on the Corrosion Behaviour of Reinforcing Steel in the Presence of Cyanoacetamide Derivatives as Corrosion Inhibitors

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Using techniques such as Tafel polarization, (EIS) electrochemical impedance spectroscopy and (EFM) electrochemical frequency modulation, this work explored reinforcing steel corrosion and its inhibition by cyanoacetamide derivatives in 2 M HCl solutions. As indicated by the electrochemical analysis, a reduced corrosion rate and corrosion current density as well as more positive corrosion potential values were obtained by adding and increasing the concentration of the cyanoacetamide derivatives. The orders of the inhibition efficiency (% η) of Cyanoacetamide derivatives are given: (1) > (2) > (3). Molecular docking was used to predict the binding between Cyanoacetamide derivatives with the receptor of 3tt8-hormone of crystal structure analysis of Cu Human Insulin Derivative.

Keywords: Reinforcing Steel, Cyanoacetamide, EIS, EFM, , Molecular docking

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