Corrosion inhibition of 6061Al-Si alloy by using Metronidazole in 0.1M HCl Medium

A. S. Fouda^{1*}, F.I. Al desoky², W.T. Elbehairy¹, A.El mohamad¹

¹ Department of Chemistry, Faculty of Science, El-Mansoura University, El-Mansoura-35516, Egypt,

² Department of Chemistry, Faculty of Science, Port Said University, Egypt

*E-mail: asfouda@hotmail.com, asfouda@mans.edu.eg

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The corrosion behavior of 6061Al-Si alloy in 0.1M HCl in the being present of Metronidazole(MNZ) compound has been observed using open circuit potential(OPC), AC impedance (EIS), Tafel diagrams, electrochemical frequency modulation (EFM)and weight reduction (WR) methods. The protective efficacy (IE) rises by raising the Metronidazole extent (MNZ) and diminished by raising the temperature. Tafel diagram has shown that the Metronidazole acts as a mixed-kind inhibitor. MNZ adsorption on the alloy surface was obeying Temkin isotherm. The surface analysis of Al alloy was performed by scanning electron microscope (SEM), AFM (atomic force microscopy) and Fourier transform infrared spectra (FT-IR).

Keywords: Corrosion, Adsorption, Al alloy, HCl, SEM, AFM, FTIR

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