

عنوان مقاله:

Investigation of Velocity Influence on Cathodic Polarization of Aluminum Alloys in ۳.۵% NaCl by Electrochemical Impedance Spectroscopy

محل انتشار:

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خلاصه مقاله:

Aluminum–magnesium alloys are specially used in high speed boats, submarines, desalination systems, etc. In this re-search the electrochemical impedance spectroscopy technique was utilized to study the flow accelerated pitting corrosion behavior of this alloy in ۳.۵% NaCl solution. To do so, impedance spectra of the samples after ۲۰h of exposure to the test solution at a rotation speeds were investigated. SEM (scanning electron microscopy) method was utilized to investigate the changes in the surface of the samples. Results indicated that under static and dynamic condition, the surface growth rate of the pits increases with time. Moreover, at -۰.۹ V upon altering the flow condition from static to dynamic, the surface growth rate of the pits and their surface fraction increases while the corrosion resistance of the passive layer is time dependent.

کلمات کلیدی:

Pitting Corrosion, Aluminum Alloys, EIS, Mansfeld's Model

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