

论文

邻胺基苯酚在Al-Ga-Sn-Mg/KOH环境中的抑氢作用

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摘要:

通过恒电流集气、稳态极化曲线、交流阻抗等电化学方法探讨了邻胺基苯酚在4mol/LKOH溶液中对Al-0.2Ga-0.1Sn-1Mg的自腐蚀抑氢作用,分析了其作用机理。结果表明:铝合金在强碱性介质中的自腐蚀析氢呈现出典型的正差异效应,自腐蚀严重。由于苯环、胺基、羟基等基团的存在使得邻胺基苯酚易在金属的表面吸附,减少了OH⁻与金属表面接触的机会,析氢量降低,自腐蚀程度减轻,但铝阳极的活性没有降低,正差异效应的规律也没有改变,是碱性介质中铝阳极的良好添加剂。

关键词: 铝合金阳极 邻胺基苯酚 抑氢作用 KOH溶液

Inhibiting H₂-evolution for O-aminophenol on the system of Al-Ga-Sn-Mg/KOH

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Abstract:

The effect of inhibiting H₂-evolution for O-aminophenol on Al-alloy anode in 4mol/L KOH was studied by galvanostatic gathering volumes of hydrogen evolution and stable state polarization curves and electrochemical impedance spectrum . The mechanism of inhibing H₂-evolution for O-aminophenol was studied also in this paper. The results show that the self-dissoution of Al-anode is very heavy, and the H₂-evolution quantity manifested typical "positive difference effect". O-aminophenol incuding phenyl ,amidocyanogen and hydroxyl absorbs easily on the surface of mental, which decreases the absorption quantity of OH⁻ on the surface of Al-anode, and decreases the volumes of hydrogen evolution. The performance of Al-Ga-Sn-Mg does not get poorer and the "positive difference effect" of Al-anode does not change, which manifestes O-aminophenol is an appropriate inhibitor in this system.

Keywords: Al-alloy anode O-aminophenol inhibiting H₂-evolution potassium hydroxide solution

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