Electrochemical Evidence of Corrosion Resistance of Polyaniline Film on the Copper Surface

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The role of aniline and its derivative polymer films in the field of metal corrosion has attracted extensive attention. The anti-corrosion effect of aniline and its derivative polymer film on iron and its alloy has been reported in the literature. There are few reports on the corrosion protection of aniline and its derivatives to copper. The purpose of this paper is to study the electropolymerization of aniline on copper and its corrosion resistance. The results show that a change in aniline concentration has little effect on the durability of the aniline polymer film. The polyaniline film can only provide a short-term physical barrier to the base metal, and its effect decreases rapidly with increasing immersion time in a corrosive medium.

Keywords: Polyaniline Film; Copper; Sodium Oxalate; Electrodeposition; Open-Circuit Potential

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