Short Communication

Effect of Mixed Bacteria on Corrosion Properties of Zn-Al-Cd Sacrificial Anode

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In this paper, the mixed microorganism (sulfate reducing bacteria and *Shewanella* algae) on corrosion behavior of Zn-Al-Cd sacrificial anode has been studied using electrochemical impedance spectroscopy (EIS), scanning electron microscopy (SEM) and fluorescence microscopy. The EIS results showed that the corrosion rate of mixed bacteria samples has experienced a process of increasing first and then decreasing as the test time is extended. SEM and fluorescence microscopy results showed that bacteria have undergone a process from mass propagation to the formation of a layer of biofilm on the surface of the sample. This layer of biofilm formed by bacteria, corrosion products and bacterial metabolites protects the sample, avoiding contact of corrosive media with the sample, thereby reducing the corrosion rate of the sample.

Keywords: Electrochemical impedance spectroscopy; Microbiologically influenced corrosion; Zn-Al-Cd sacrificial anode; Fluorescence microscopy

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