The Inhibition Effect of Polyaspartic Acid and Its Mixed Inhibitor on Mild Steel Corrosion in Seawater Wet/Dry Cyclic Conditions

Xiumin Ma^{1,*}, Bei Qian², jie zhang¹, Weichen Xu¹, Quantong Jiang¹, Meng Zheng¹, Fubin Ma¹, Baorong Hou¹

¹ Institute of Oceanology, Chinese Academy of Sciences, 7 Nanhai Road, Qingdao 266071, PR China

² Qingdao Agricultural University, Qingdao 266109, China

*E-mail: xma@qdio.ac.cn

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The inhibition effects of polyaspartic acid (PASP) and the mixed inhibitor (50mg/L PASP, 100mg/L Na₂WO₄, 100mg/L ZnSO₄·7H₂O) on mild steel corrosion in seawater wet/dry cyclic conditions were studied via weight loss and electrochemical methods. The polarization curves show that the inhibition efficiency is 72.4% in the presence of PASP, and rises up to 92.6% after the addition of the mixed inhibitor. Scanning electron microscopy (SEM), X-ray diffraction and Fourier transform infrared reflection were performed to study the corrosion inhibition effect. According to the results of SEM, the metal surface immersed in the mixed inhibitor was better protected than that in PASP due to the formation of a protective film.

Keywords: Mild steel, EIS, SEM, XRD, Neutral inhibition

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