

Corrosion resistance behavior of PVA/ZrO₂ composite in 3.5% NaCl

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Corrosion occurs on the walls of marine structures and leads to surface damage. The main cause of the corrosiveness are chloride ions. Every product created from metal due to its low cost and easy availability mild steel find its role. The polymer composites are having multiple adsorption sites for bonding with metal surface and provides higher inhibition efficiency than the corresponding monomers. In the present work, the corrosion inhibition of mild steel in 3.5% NaCl by PVA/ ZrO₂ composites were studied. The composite samples were characterized by using XRD, FTIR and SEM. Electrochemical impedance spectroscopic techniques were used to explore the enhanced corrosion resistance of composites. The corrosion inhibition efficiency of PVZr composites were found to increase with increase in concentration of ZrO₂.

Keywords: PVA, ZrO₂, XRD, FTIR, SEM, corrosion inhibition.