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Synergistic Influence Of Sodium Meta Vanadate On Corrosion Inhibition Efficiency Of 1-Benzyl-3-Hydroxy-1-H-Indazole On Mild Steel In Aqueous Medium Containing 60 ppm Cl^- Ion

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Abstract : The inhibition efficiency of 1-Benzyl-3-Hydroxy-1-H- Indazole (BHI) –Zn^{2+} system and the synergist sodium meta vanadate (SMV) is controlling corrosion of mild steel in an aqueous solution containing 60 ppm of Cl^- ion has been evaluated by weight loss method 120 ppm of BHI has 71.4% inhibition efficiency addition of 100 ppm of SMV has 82.6% Inhibition efficiency. Synergistic effect exists between inhibitor system and sodium meta vanadate. Mechanistic aspects of corrosion inhibition have been studied by electrochemical studies like polarization and electrochemical impedance spectroscopy. Surface analytical techniques; FT-IR, AFM were carried out for revealing protective film formation. Atomic absorption spectroscopy study showed that the inhibition efficiency increases with increasing inhibitor concentration.

Key words : Synergism, inhibition efficiency, FT-IR, AFM, potentiodynamic polarization study.

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