**ABSTRACT**

A heterocyclic imidazoline, 3,4,5-trimethoxyphenyl-2-imidazolines (TMP2I) was tested for its corrosion inhibition in 0.5 M H2SO4 and 1 M HCl using weight loss, Tafelpolarisation and electrochemical impedance techniques. The results show that the inhibition efficiency increases with the increase in concentration of TMP2I and the higher efficiency of about 98% is obtained in both the acid media at 20 ppm. The adsorption of TMP2I obeys Langmuir adsorption isotherm and occurs spontaneously. Cathodic and anodic polarization curves of mild steel in the presence of different concentrations of TMP2I at 30 0C reveal that it is a mixed type of inhibitor. Electrochemical impedance studies reveal that the system follows mixed mode of inhibition. The surface morphology of the mild steel specimens was evaluated using SEM images