**ABSTRACT**

The mild steel dissolution in 1 N HCl medium was monitored in the presence and absence of gum exudates of Eucalyptus globles (GEG) using quantitative gravimetric method at 303-323 K. The synergistic influence of iodide ions with GEG on the dissolution of mild steel was also studied at 303-323 K. The impedance (Rct and Cdl) and polarization (ba, bc, icorr, Ecorr) parameters were obtained from electrochemical methods for the optimum concentration of GEG and GEG + I–. The dissolution of mild steel decreases with increase in the concentration of GEG and GEG + I– at 30 °C. But their inhibition ability of tested inhibitor system for dissolution control of mild steel decreases with increase in temperature but rate of dissolution of mild steel is comparatively less in the case of GEG + I–. Adsorption of GEG on mild steel obeys Langmuir’s isotherm and supports physisorption process. Tafel’s parameters confirm the mixed nature of the studied inhibitor