**ABSTRACT**

The corrosion inhibition efficiency performance of biopolymers Iota-carrageenan (IC) and Inulin (INU) on mild steel in 0.5 M H2SO4 solution was evaluated using weight loss, potentiodynamic polarization and electrochemical impedance spectroscopy (EIS) techniques. The inhibition efficiency of the inhibitors increased with increase in concentration. Thermodynamic parameters (ΔGads) and activation parameters (Ea, ΔHo, ΔSo) were calculated to investigate the mechanism of inhibition. Polarization studies revealed that the studied inhibitors are mixed type. Scanning electron microscope (SEM), energy dispersive X-ray spectroscopic (EDX) and atomic force microscopy (AFM) studies were used to characterize the surface morphology of inhibited and uninhibited mild steel.