**ABSTRACT**

 The adsorption and corrosion inhibiting effect of branched polymers (BATP, BAAZ, BETP & BEAZ) on mild steel in 1M H2SO4 at 30±1˚C was investigated using gravimetric, electrochemical impedance spectroscopy (EIS), and potentiodynamic polarization techniques. The experimental findings revealed that BATP inhibited the corrosion reaction in the acid environment to greater extend compared to BAAZ, BETP and BEAZ. Impedance results indicate that the polymers were adsorbed on the metal/solution interface, while polarization data showed that the polymers behaved mostly as mixed-type inhibitors. Kinetic parameters (activation energy, pre-exponential factor, enthalpy of activation and entropy of activation) as well as thermodynamic parameters (enthalpy of adsorption, entropy of adsorption and Gibbs free energy) were calculated and discussed. Scanning electron microscopy technique was used to confirm the effectiveness of inhibition of mild steel in sulphuric acid medium.