**ABSTRACT**

(3E)-3-{[4-(phenylsulfonyl)]imino}-3,4-dihydroquinoxalin-2(1H)-one (PSDQO) has been synthesized and its inhibiting action on the corrosion of mild steel in 1 M H2SO4 has been assessed by weight loss method at 303 K – 333 K. The results of the investigation show that this compound has excellent inhibiting properties for mild steel corrosion in sulphuric acid. Inhibition efficiency increases with increase in the concentration of the inhibitor. The adsorption of the inhibitor was tested for Langmuir, Temkin, Flory-Huggin’s and El-Awady isotherm and proved physical adsorption. Quantum chemical calculations were employed to give further insight into the mechanism of inhibitive action of the inhibitor.