**ABSTRACT**

A novel anticorrosion material polyester/tobacco (PES-TOB) composite was prepared *via*. ultra sonication method. The composite was characterized by FT-IR, TGA and XRD. In this report, we present the comparative corrosion inhibition performance on mild steel in 1 M H2SO4 containing PES and PES-TOB composite. The PES was prepared by condensation of 2,5-bis(4′-aminophenyl-N,N′-(3′-hydroxyphenylazo)-1,3,4-oxadiazole and pimelic acid. The synthesized PES showed only inhibition efficiency up to 38% at 500 ppm. But the corrosion protection performance of the PES-TOB composite was excellent upto 96%, which was monitored by weight loss method, potentiodynamic polarization method, electrochemical impedance spectroscopy and AAS. The surface morphology was examined by scanning electron microscopy.