**ABSTRACT**

The impact of methanol extract of *Chaenomelessinensis* (*C. sinensis*) leaves on acid corrosion of low carbon steel was assessed by gravimetric and electrochemical methods. Phytochemical characterization by total phenolic content (TPC), and total flavonoids content (TFC) of the extract was performed. The TPC and TFC concentrations were identified as 193.50 and 40.55 mg/g. Efficiency increased remarkably in the presence of inhibitor and found as concentration dependent. A maximum inhibition efficiency of 93.19% was achieved using 2000 ppm of the *C. sinensis* inhibitor. Impedance and surface morphology analysis by SEM and AFM revealed that the anticorrosive activity results from the protective film of phytochemical components of *C. sinensis* extract adsorbed on the metal surface.