



Eco Friendly Green Inhibitor for Corrosion of Mild Steel in 1N Hydrochloric Acid Medium - A Comparative Study

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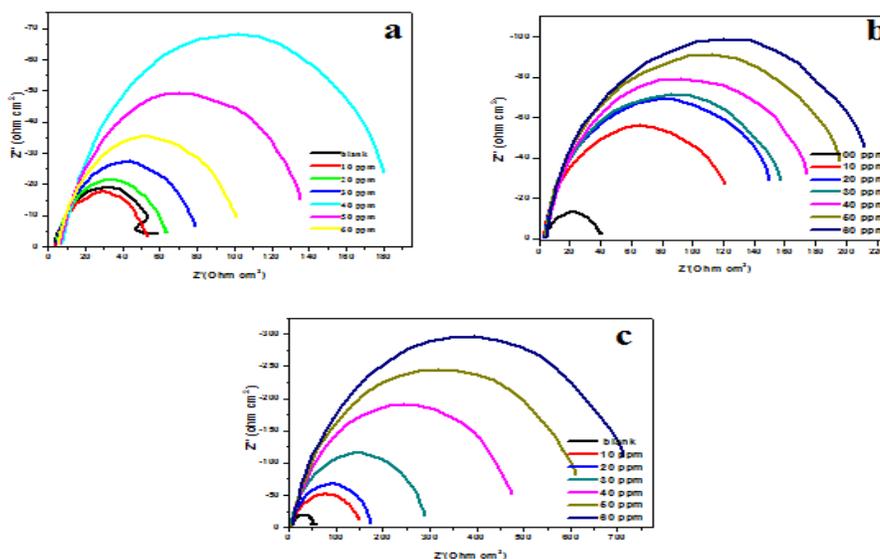
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ABSTRACT

The mass loss, electrochemical polarization and impedance studies were carried out to investigate the comparative corrosion protection efficiency of plants extract of *Artocarpus* genus (AG), *Terminalia tomentosa* (TT) and *Pergularia daemia* (PD), on mild steel in 1N HCl medium. Polarization methods indicated that the plants extracts behave as mixed type inhibitor. The EIS measurement revealed that the charge transfer resistance process mainly controls the corrosion of mild steel. The adsorption character of plant extract on mild steel surface obey Temkin isotherm. The values obtained in all methods are in good agreement with each other and the inhibition efficiency follows in the order of TT>AG>PD.

Graphical Abstract:



Nyquist plots for mild steel in 1N HCl acid solution without and with presence of different concentration of (a) TT, (b) PD and (c) AG extract of leaves.

Keywords: Mild steel; EIS; SEM; Polarization; Acid Corrosion.