**Abstract**

The objective of this paper is to give an overview assessment for alleviation of metal lossconsidering internal corrosion protection, safety aspects and meets industrial requirements. Theultimate goal of this study is to have inhibitor for mild steel protected against corrosive environmentsin order to mitigate heavy metal loss during acid pickling. Acid- used to reduce the formationdamage around the oil well or to remove scale - readily attacks the metal. In the oil extraction andprocessing industries, inhibitors have been considered to be the first line of defense againstcorrosion. Most of the inhibitors currently used in producing wells are organic nitrogenouscompounds. The present work aims at the study of a new imidazoline derivative, 2-[2-(4-Nitrophenyl)-vinyl]-tetrahydro-1,3,8-triaza-cyclopenta[a]indene (NVI) as mild steel corrosion inhibitor inH2SO4 acid medium by electrochemical methods. NVI was found to inhibit corrosion with efficiencyabove 85 % in sulphuric acid medium. Electrochemical impedance studies proved that NVI inhibitsmetal loss by physically adsorbing on the surface through its hetero atoms. Polarization studiesproved the mixed mode of inhibition by NVI. Theoretical evidences obtained by structuraloptimization of NVI using GAUSSIAN software employing DFT also support the experimentalfinding.