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Supporting Data

Innovation of Imine Metal Chelates as Corrosion Inhibitors at Different Media: A Collective Study

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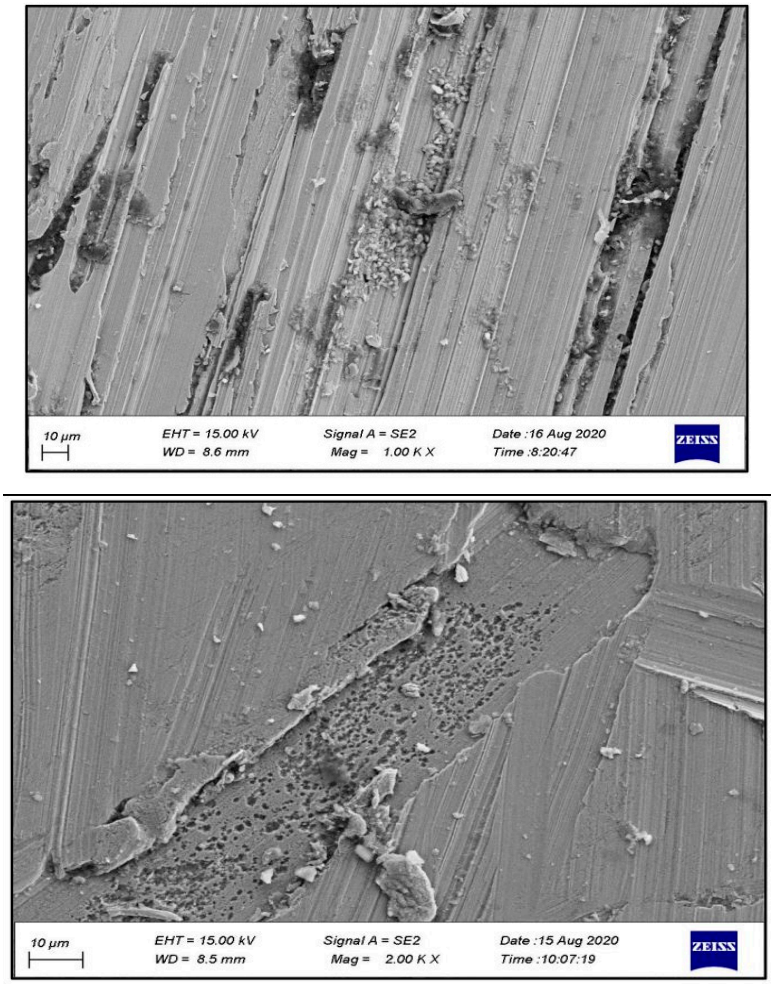

Figure. S1: Mild steel sample photos in acidic solutions without inhibitor. [57].

Figure S2: The mild steel macrostructure for the standard sample and the examined complexes [Cd(II) and UO2(II)]. [62]

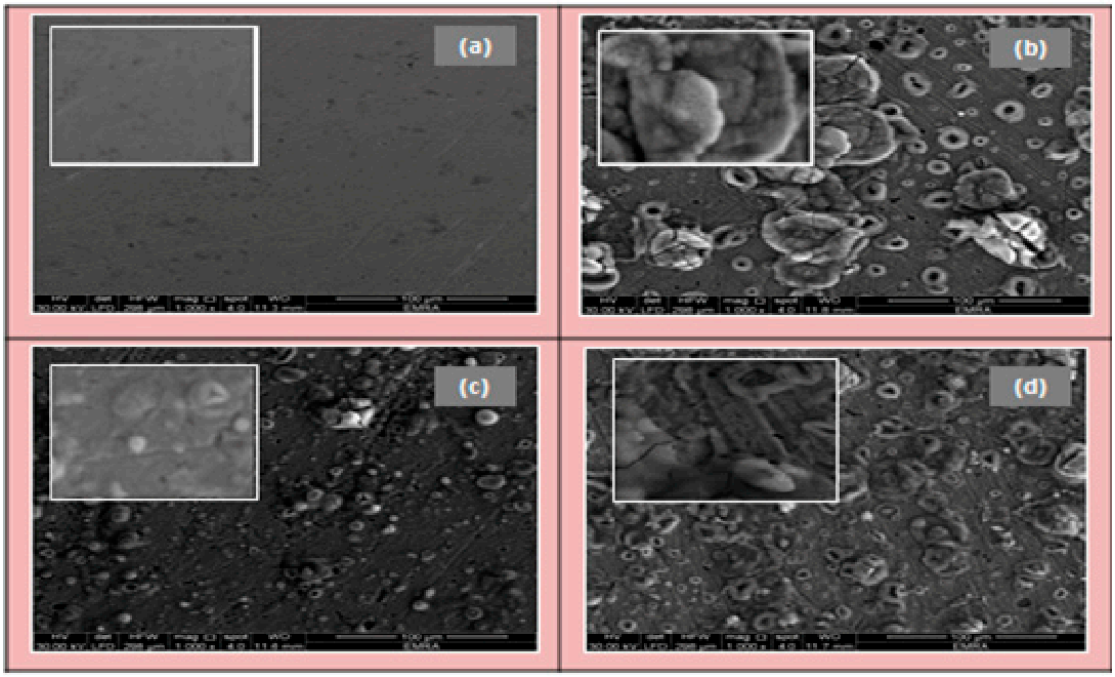

Figure S3: Micrographs of mild steel samples for a glossy mild steel surface that has not been treated (a), in the presence of inhibitor, following absorption in 1 M HCl solution (b), following absorption in 1 M HCl solution containing 500 ppm Cd(II) chelate (c)and through absorption in a 1 M HCl solution with 500 ppm UO_2(II) chelate (d). [62]

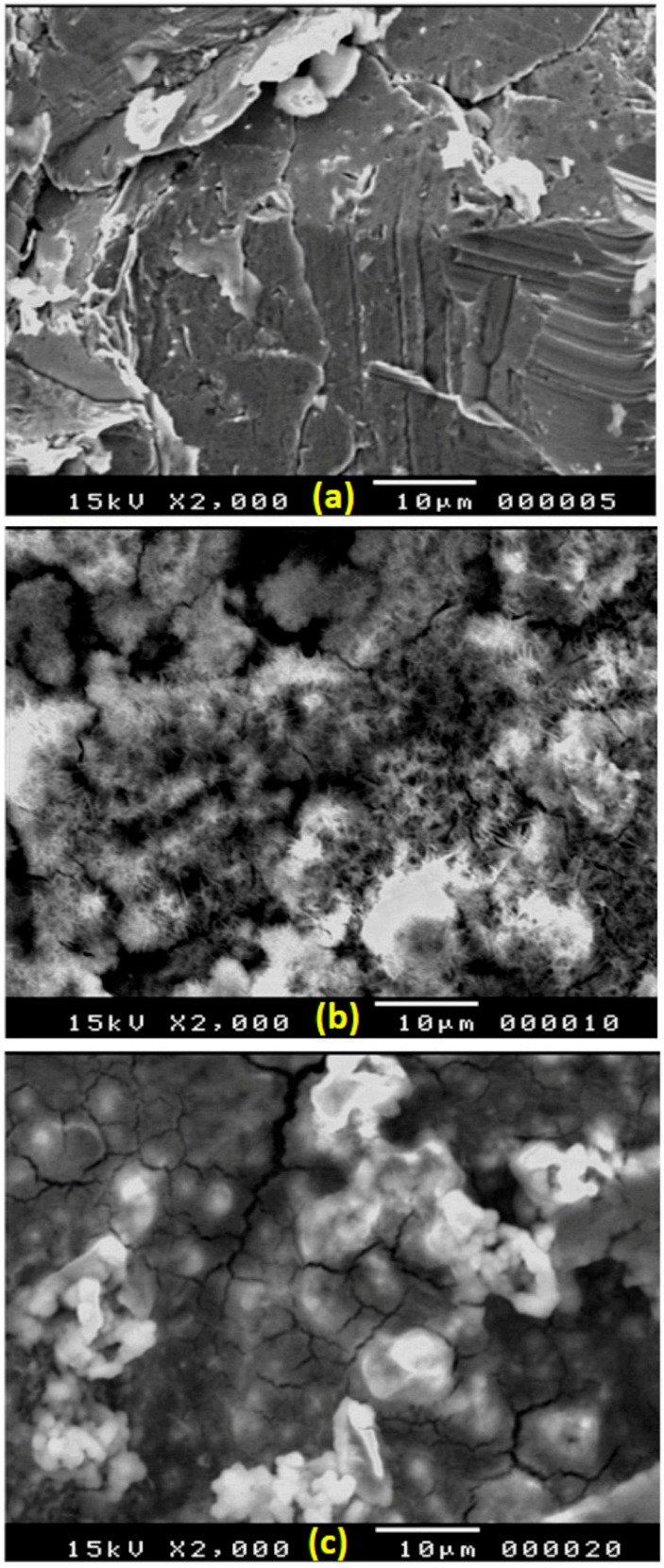

Figure S4: SEM studies of: (a) refined mild steel, (b) oilfield formation water absorbed mild steel (Blank) & (c) mild steel in oilfield formation water + 500 ppm STSC + 5 ppm Cu^{2+}. [67]

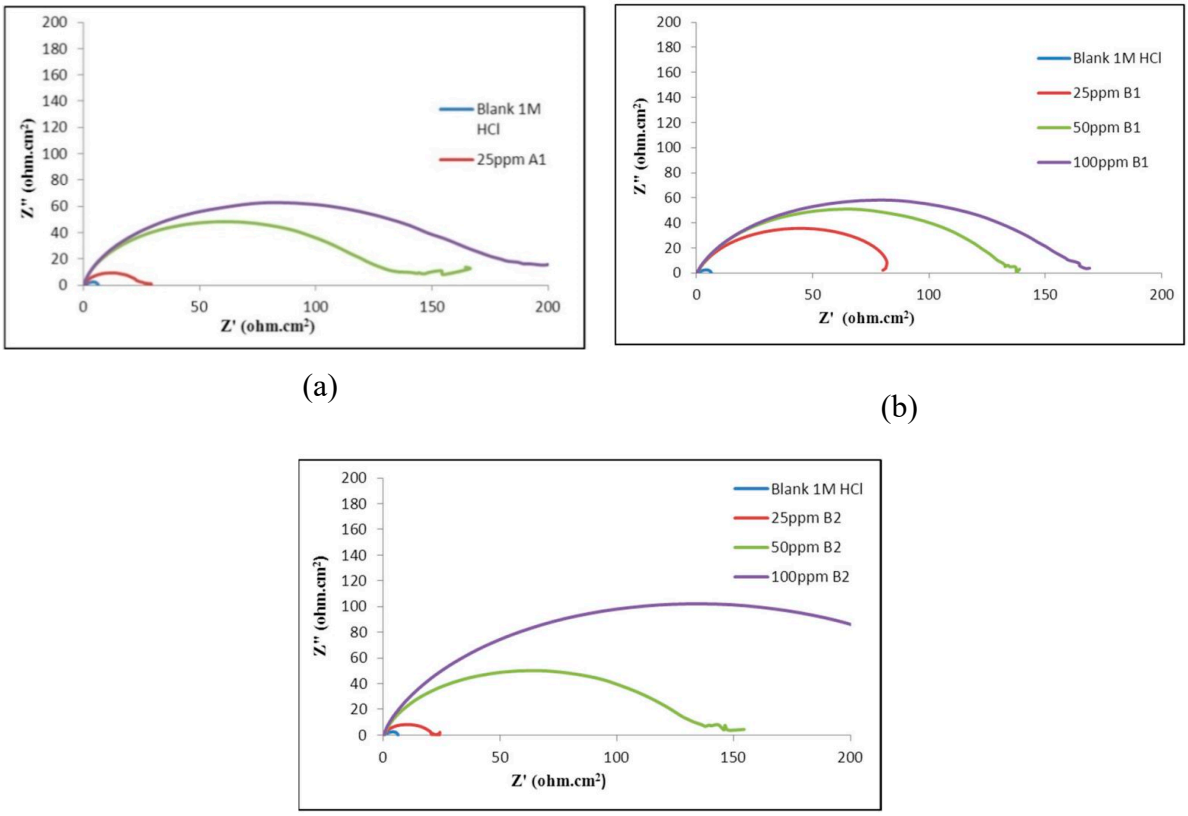

Figure. S5: Nyquist charts of mild steel corrosion in 1M Hydrochloric acid with and without the various concentrations levels of (a) A1 [N- (benzylcarbamothioyl) benzamide**],** (b) B1 [N- (benzylcarbamothioyl) benzamide] copper(II) acetate & (c) B2 [N-(benzylcarbamothioyl) benzamide] nickel(II) acetate. **[70]**

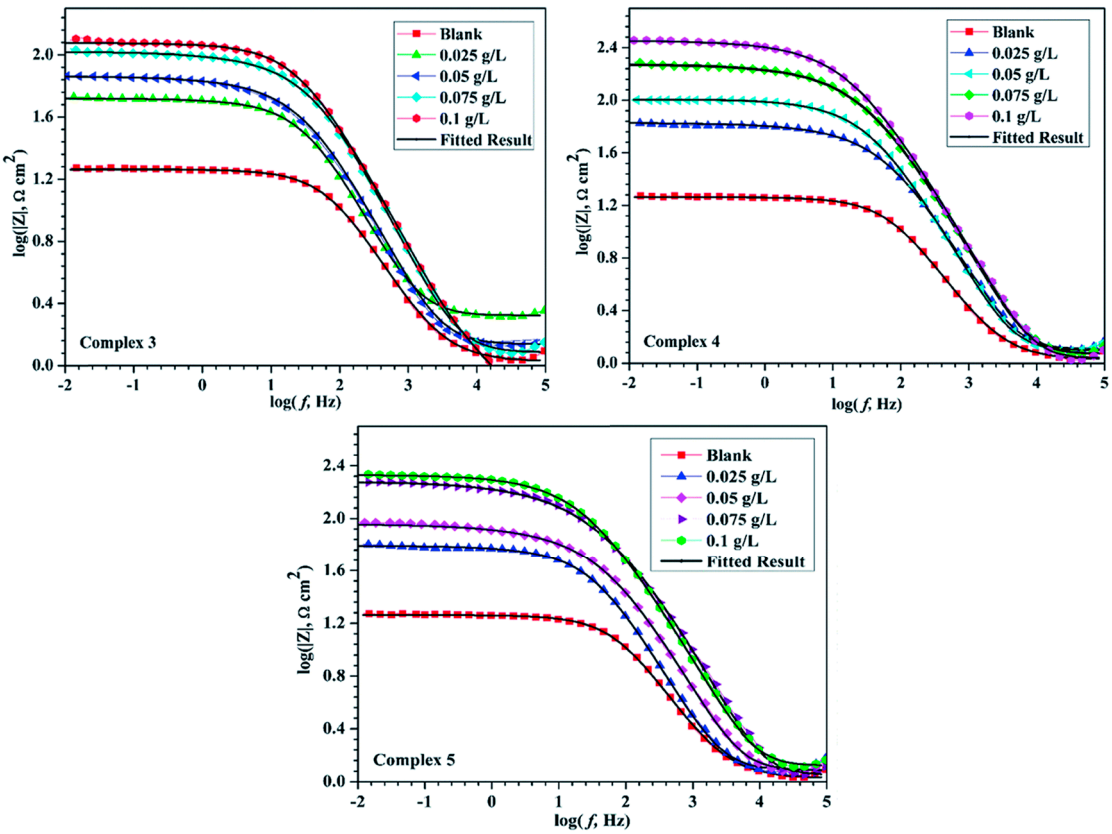

Figure. S6: Bode chart of mild steel in 15% Hydrochloric acid in absence and presence of inhibitor doses. [78]

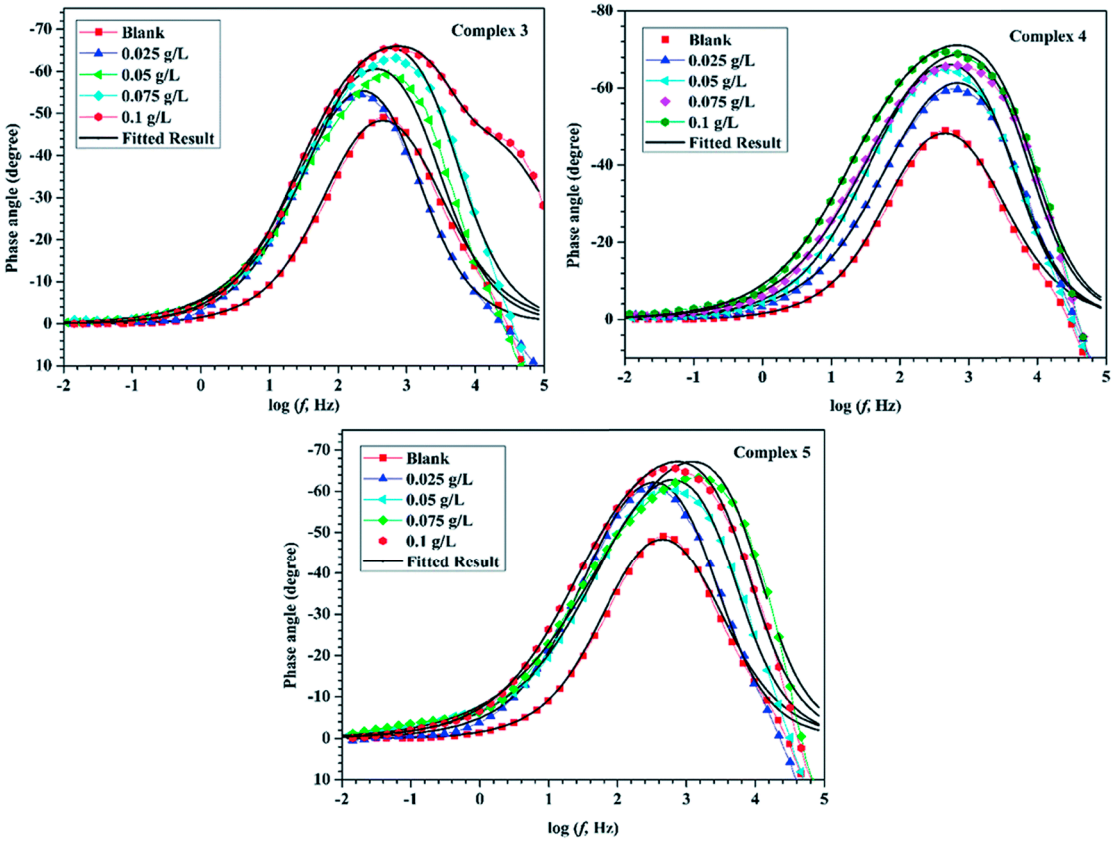

Figure. S7: Plots of phase angles of mild steel in 15% Hydrochloric acid in absence and presence varied inhibitor doses. [78]

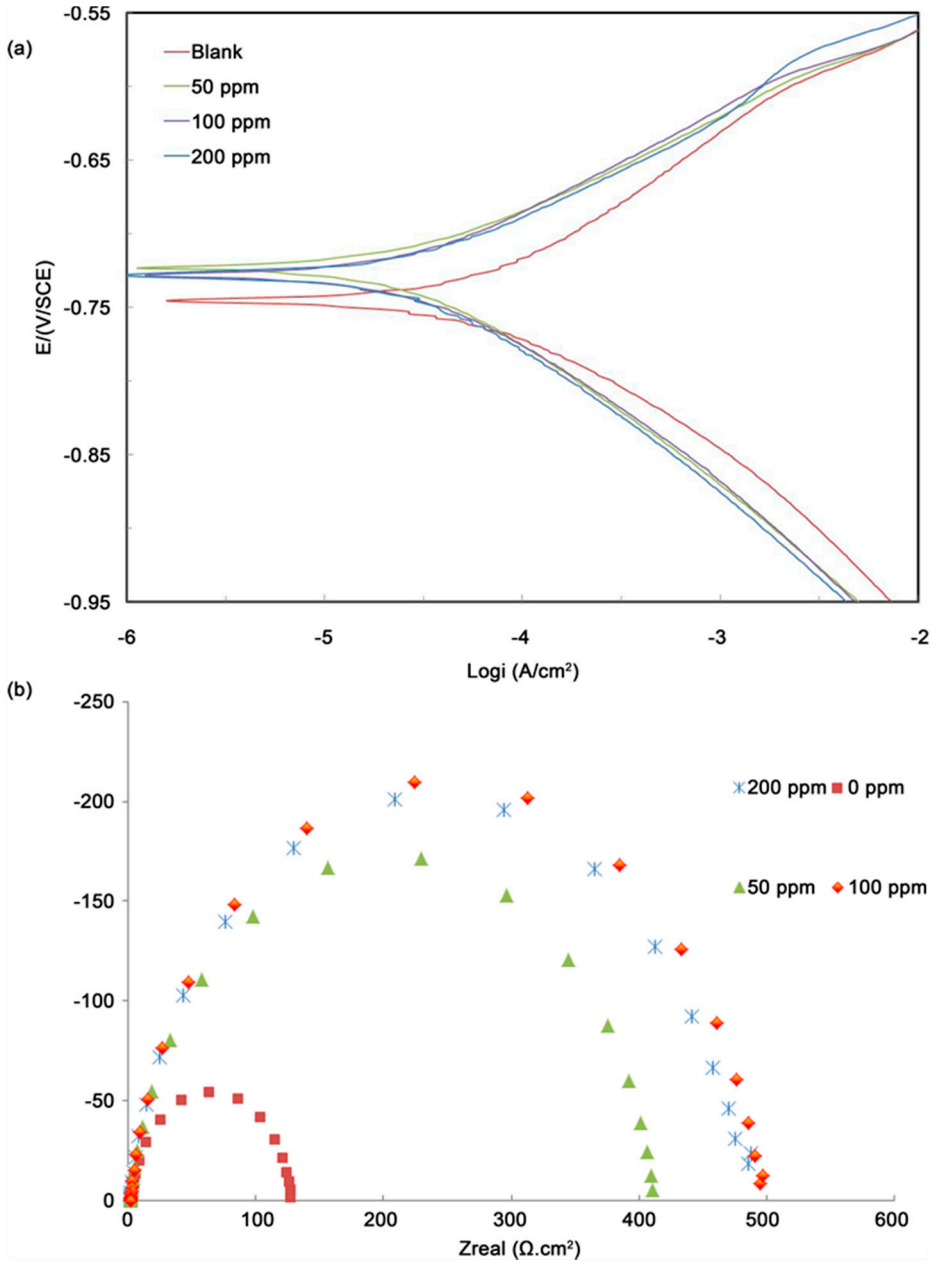

Figure. S8: (a) Polarization curves and (b) Nyquist plot of 316 L S S in 0.1 M Sulphuric acid solution with and without different dosages. [84]

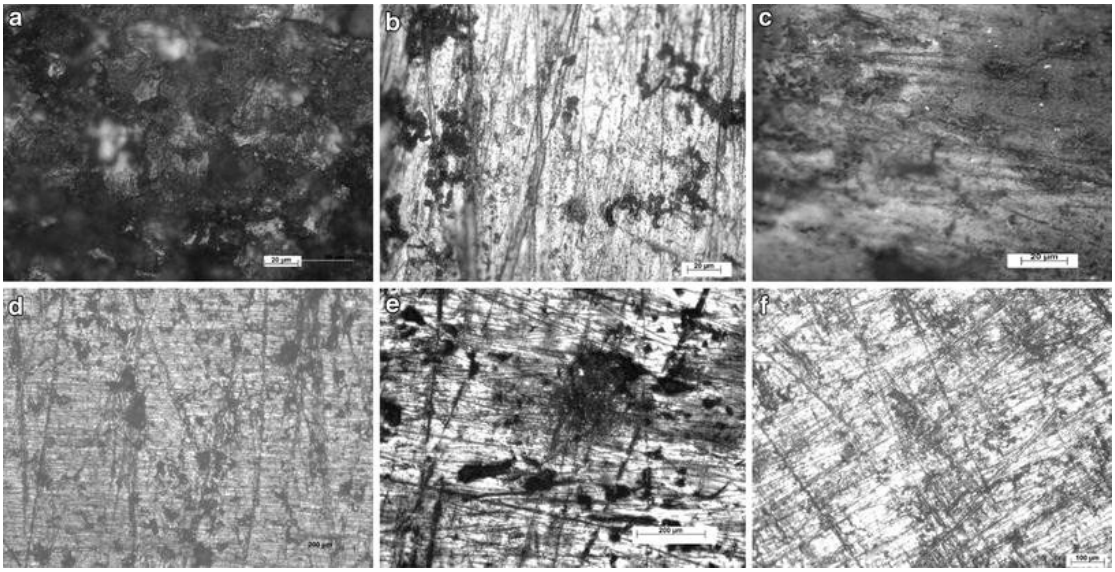

Figure. S9: Optical microscope images of carbon steel sample in acid medium without inhibitor (a), and with inhibitors H2L (b)& Co2L(H2O)2(Cl)2.2H2O (c), Ni2L(H2O)2(Cl)2.2H2O (d), Cu2L(H2O)2(Cl)2.2H2O (e), and Zn2L(H2O)2(Cl)2.2H2O (f).[86]

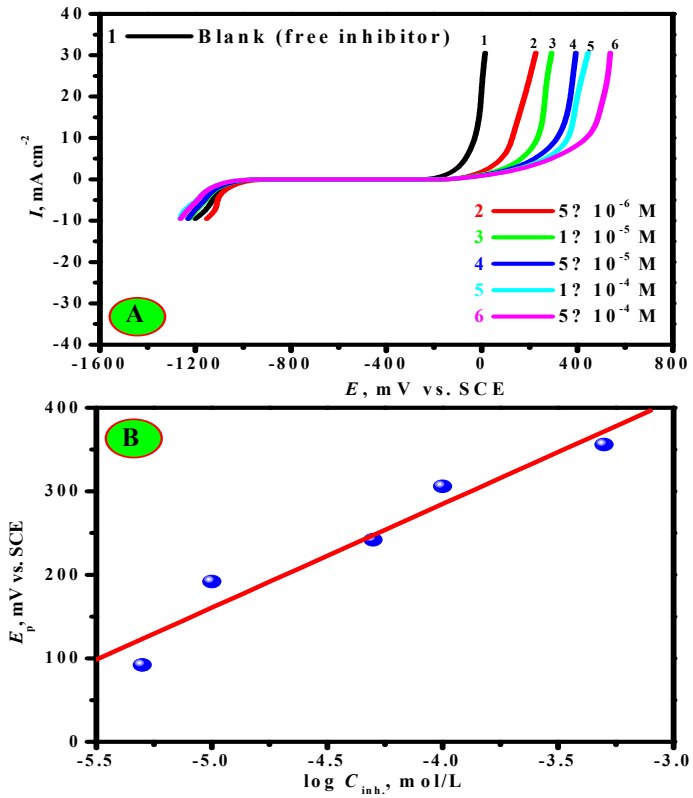

Figure. S10: PAP digrams of carbon steel in 1.0 N HCl solutions with and without various doses of NABSFe at 30 °C (A) and a relation between Ep & logCinh (B) [95]

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