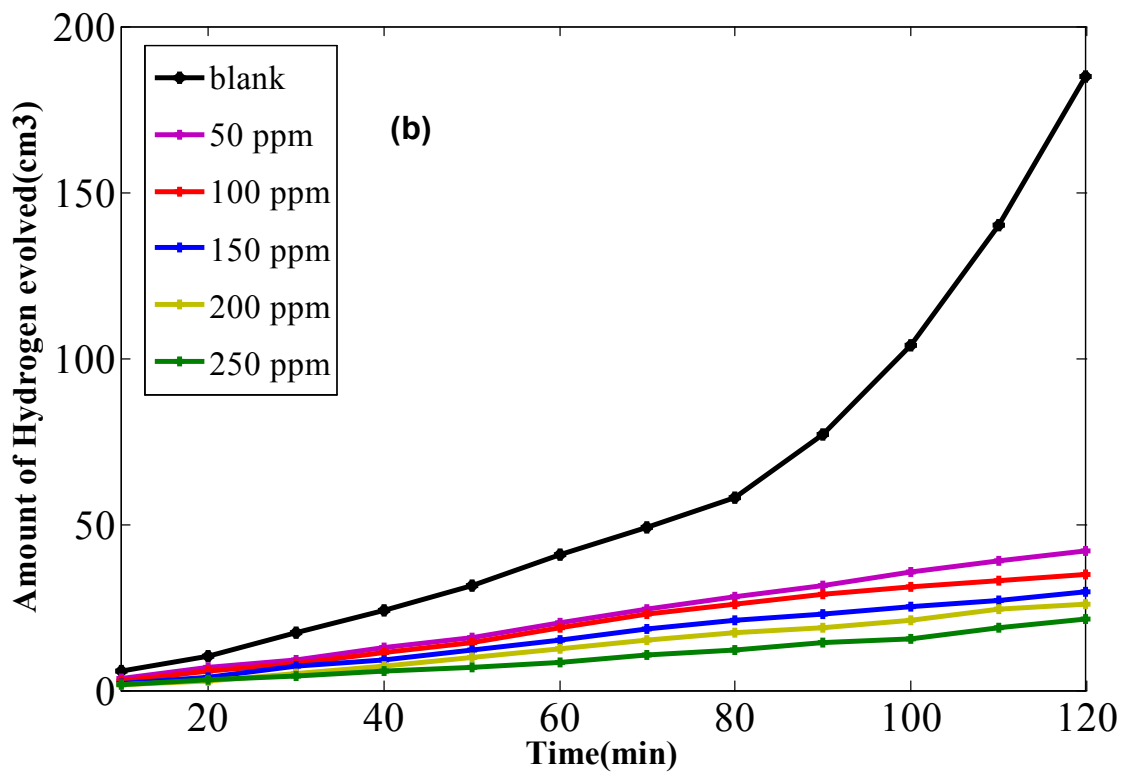
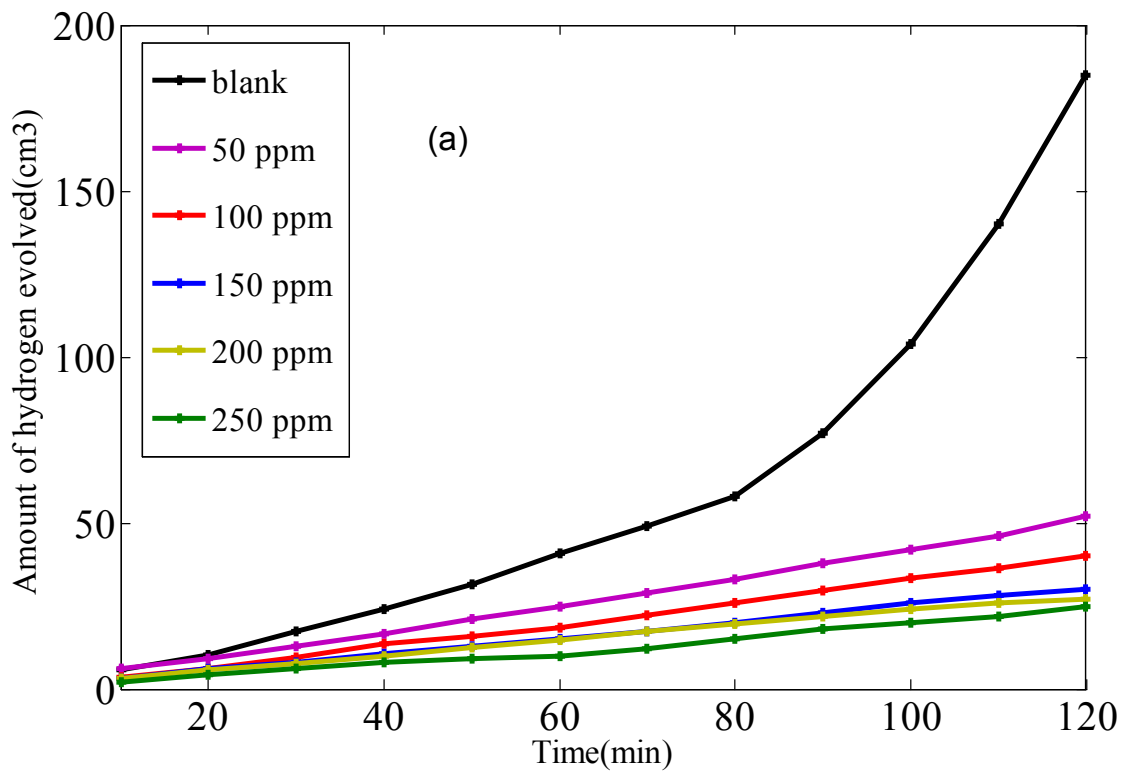
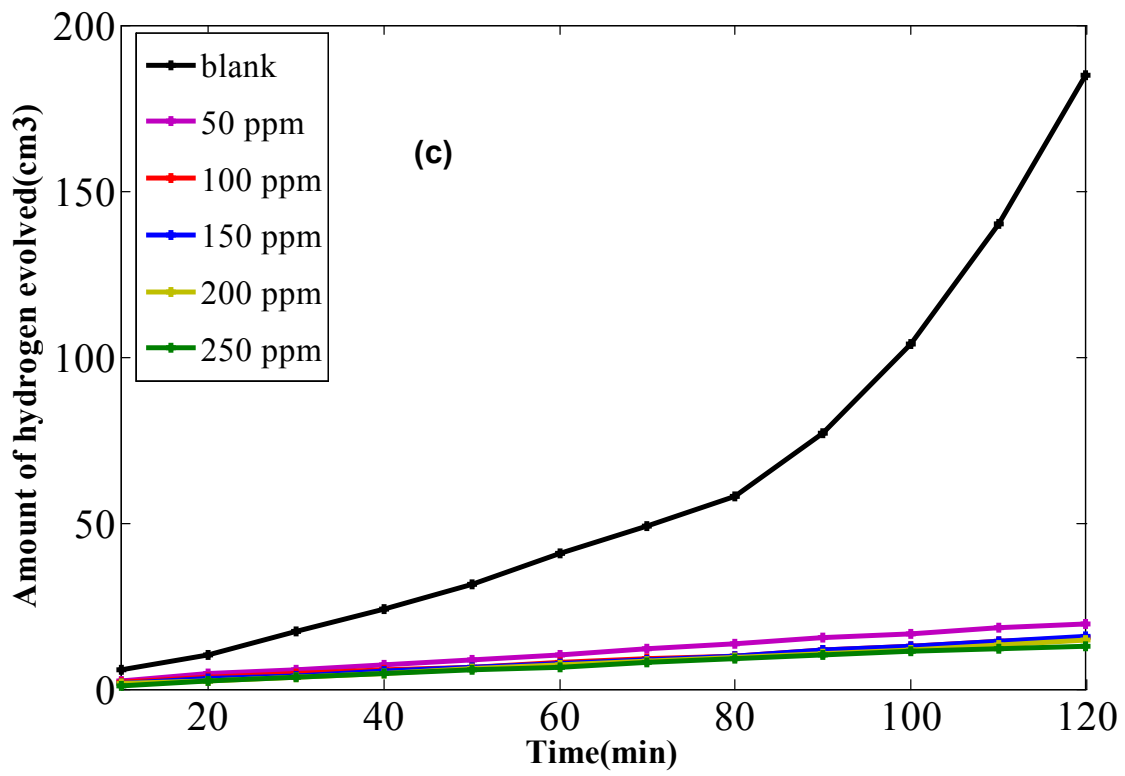
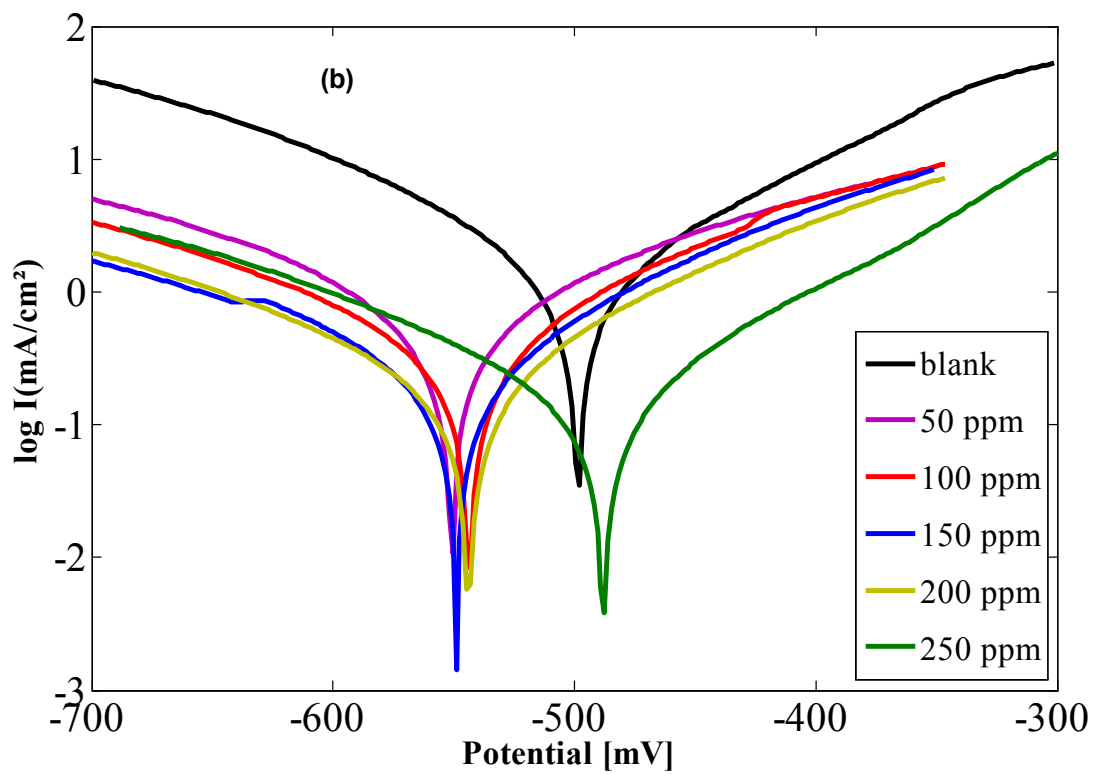
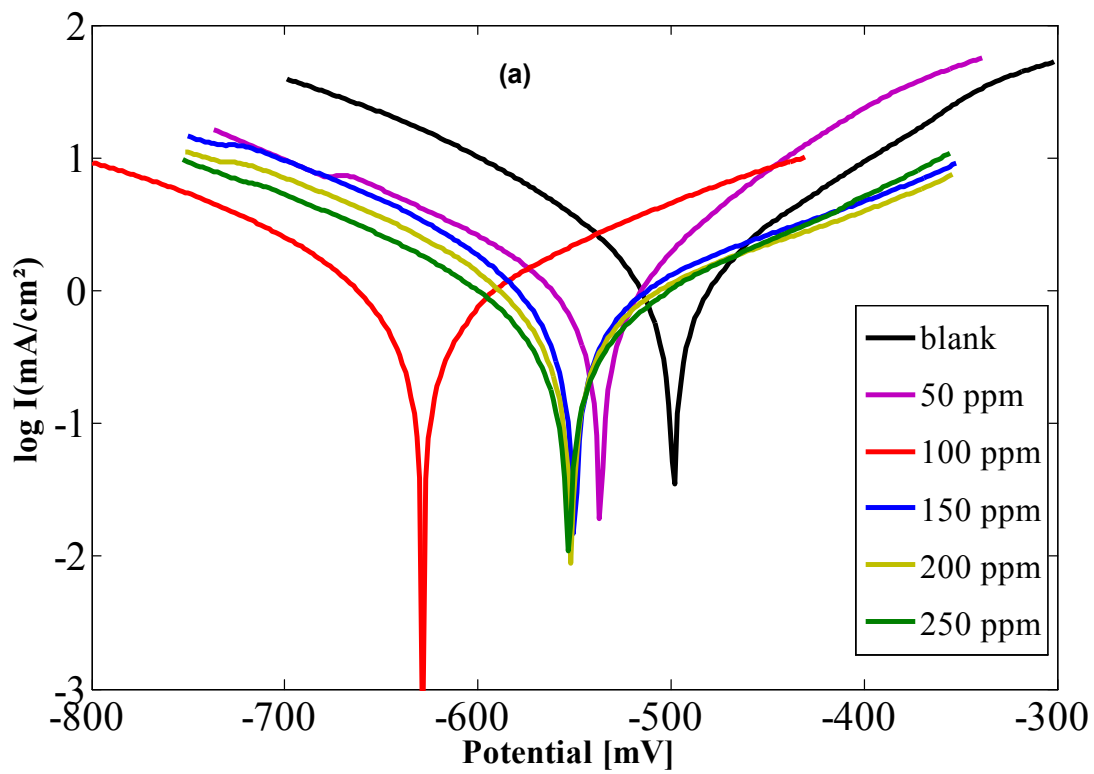


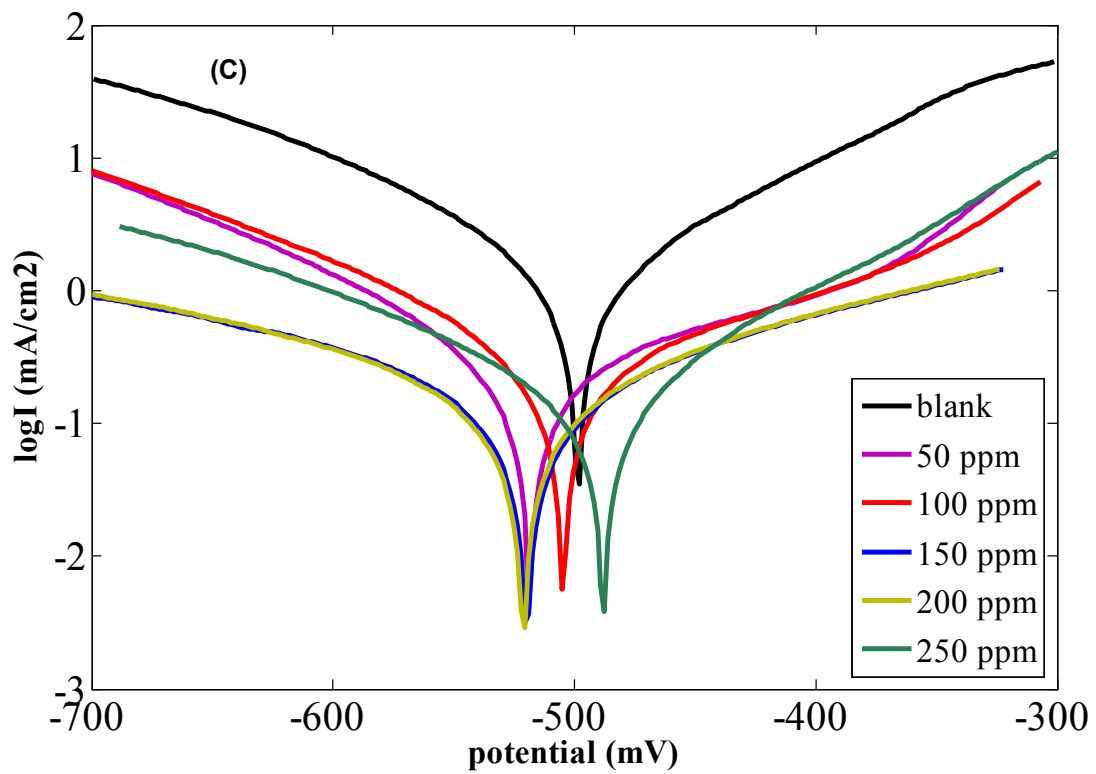
S1: Chemical structure characterization of CSPTA, (a) FTIR, (b) ¹H-NMR.





S2: Volume of hydrogen evolved with time for carbon steel in 1 M HCl at various concentrations of (a) CSPTA-Stearic, (b) CSPTA-Palmitic, (c) CSPTA-Myristic.

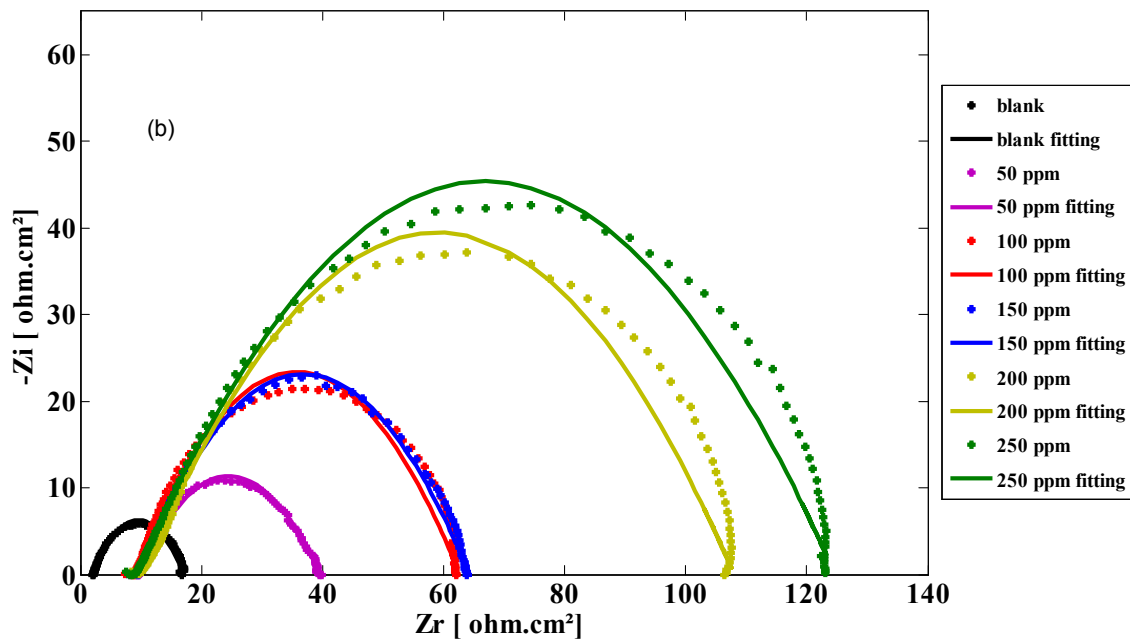
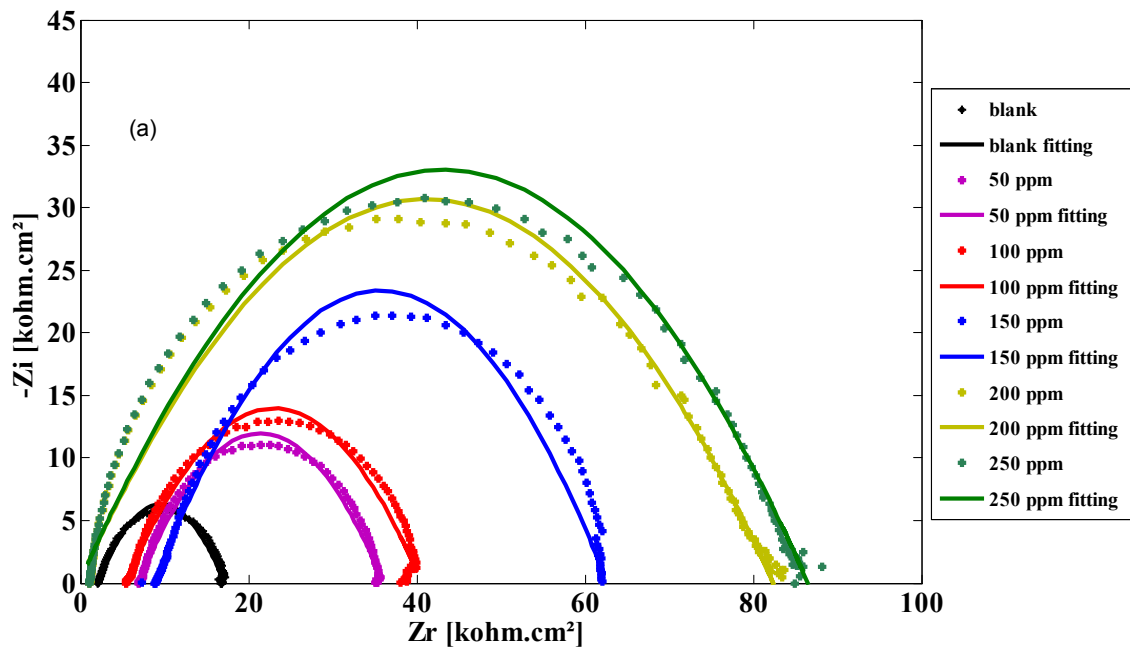


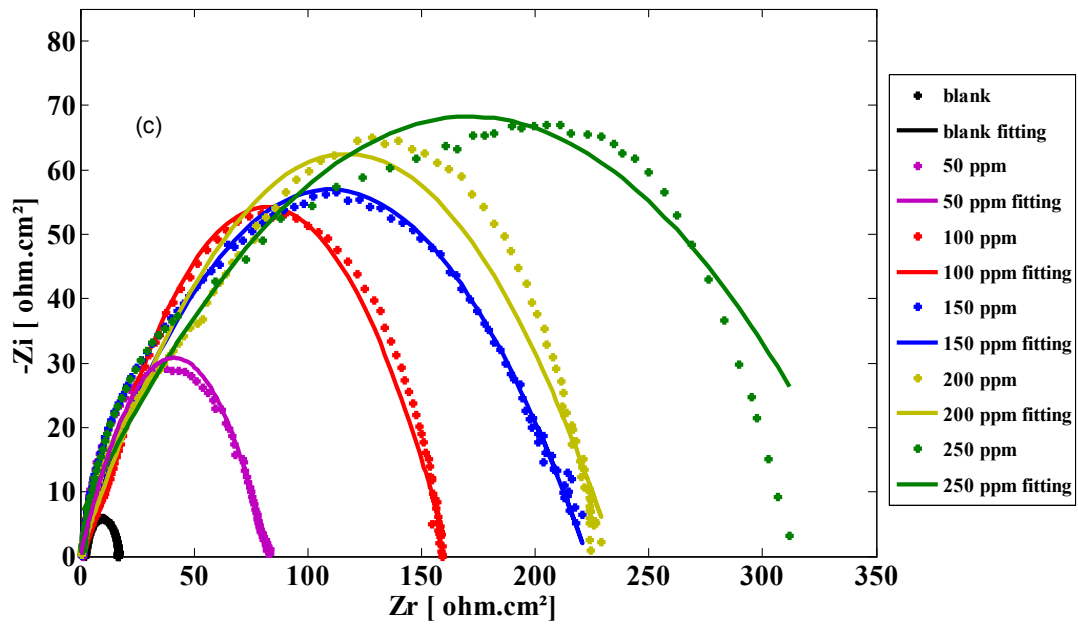


S3: Polarization plots of steel electrode obtained in 1 M HCl solution and containing various concentrations of (a) CSPTA-Stearic, (b) CSPTA-Palmitic, (c) CSPTA-Myristic.

S4: Values of Mean and standard deviation (SD) for corrosion current density for carbon steel electrode at different concentrations of PILs inhibitors in 1 M HCl solution.

Inhibitor	Concentration (ppm)	Mean value	SD value
blank	000	0.8826	±0.6063
CSPTA- Stearic	50	0.7305	±0.6158
	100	0.4174	±0.5606
	150	0.4415	±0.5155
	200	0.3425	±0.5109
	250	0.2932	±0.5379
CSPTA-Palmitic	50	0.3175	±0.504
	100	0.18	±0.5443
	150	0.01232	±0.564
	200	-0.02786	±0.5682
	250	-0.09302	±0.6154
CSPTA-Myristic	50	0.01692	±0.5961
	100	0.03317	±0.5694
	150	-0.4313	±0.4572
	200	-0.4287	±0.4625
	250	-0.1032	±0.6323
CSPTA-Lauric	50	-0.4232	±0.4611
	100	-0.0942	±0.6135
	150	-0.9713	±0.4748
	200	-1.037	±0.4475
	250	-0.9813	±0.4699

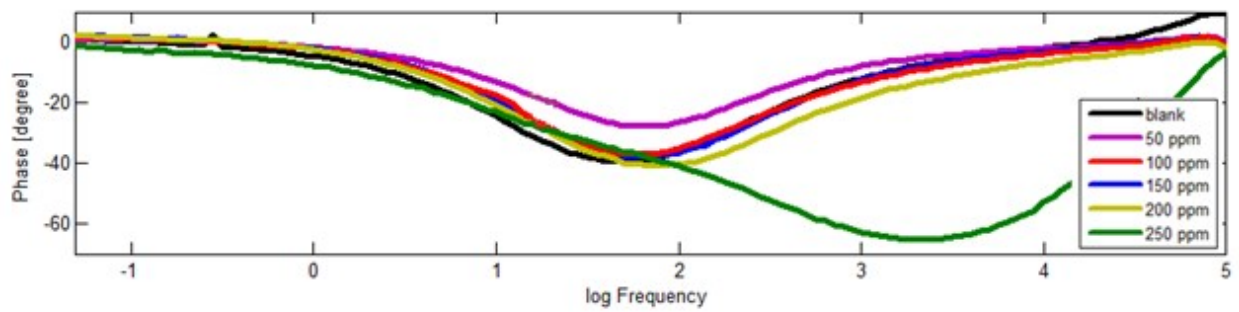
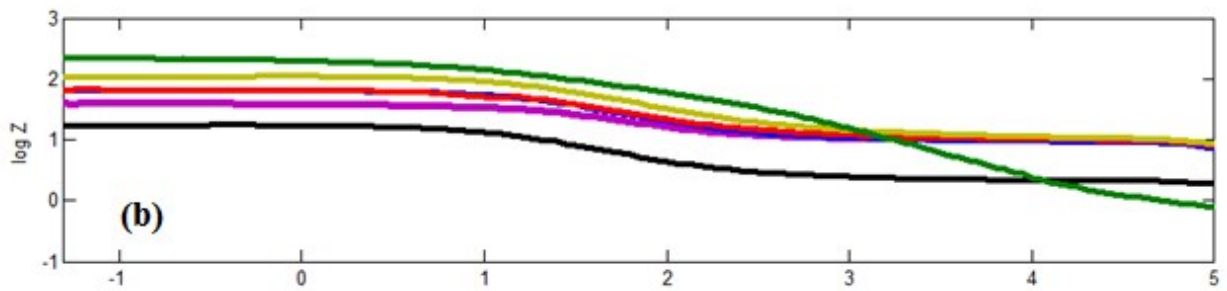
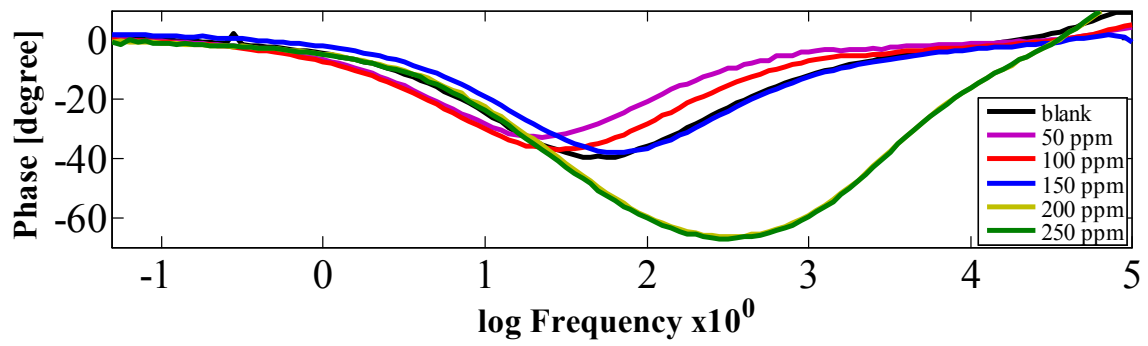
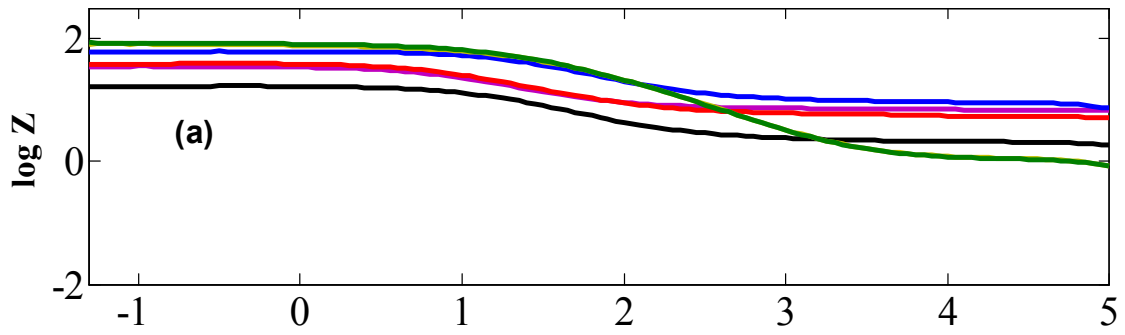


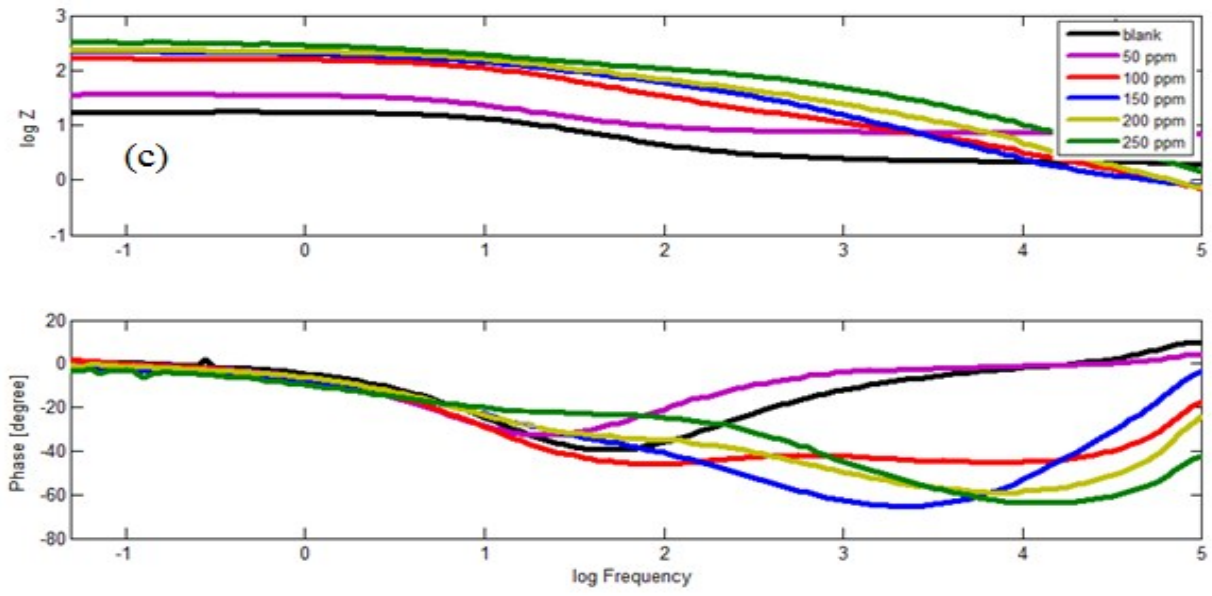


S5: Nyquist plots for carbon steel electrode in 1 M HCl solution with and without various concentrations of: (a) CSPTA-Stearic, (b) CSPTA-Palmitic, (c) CSPTA-Myristic.

S6: Values of Mean and standard deviation (SD) for $-Z_i$ [ohm.cm²] for carbon steel electrode at different concentrations of PILs inhibitors in 1 M HCl solution.

Inhibitor	Concentration (ppm)	Mean value	SD value
blank	000	1.54	±1.903
CSPTA- Stearic	50	2.96	±3.593
	100	3.648	±4.245
	150	5.308	±7.065
	200	8.454	±9.501
	250	8.865	±10.01
CSPTA-Palmitic	50	2.831	±3.552
	100	5.313	±7.152
	150	5.454	±7.086
	200	9.575	±12.14
	250	11.71	±14.16
CSPTA-Myristic	50	8.354	±9.411
	100	16.47	±17.07
	150	22.66	±18.61
	200	23.93	±20.29
	250	32.13	±21.75
CSPTA-Lauric	50	22.34	±18.412
	100	24.24	±20.5
	150	38.13	±51.42
	200	61.02	±66.18
	250	75.14	±97.22





S7: Bode plots for carbon steel electrode in 1 M HCl solution with and without various concentrations of: (a) CSPTA-Stearic, (b) CSPTA-Palmitic, (c) CSPTA-Myristic.