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APPENDICES

Appendix – A1

Polarization parameters of the MS in 1 M HCl containing various concentrations of PVA-AAm-VSA at 303 to 343 K calculated from extrapolation of the Tafel lines

T	Conc. Wt.%	b _a (V)	b _c (V)	I _o (A/cm ²)	IE I _o (%)	R _p Ωcm ²	IE R _p (%)	E _o (Volts)
303 K	Blank	0.220	0.269	0.0153		16.40		-0.4842
	0.03	0.184	0.174	0.0035	77.33	47.32	65.35	-0.4768
	0.09	0.172	0.166	0.0028	81.44	64.37	74.53	-0.4785
	0.18	0.156	0.158	0.0018	88.42	84.93	80.69	-0.4803
	0.27	0.142	0.157	0.0015	90.20	109.34	85.00	-0.4798
	0.36	0.136	0.150	0.0013	91.56	113.16	85.51	-0.4842
	0.45	0.126	0.150	0.0010	93.32	122.00	86.56	-0.4798
313 K	Blank	0.298	0.316	0.0372		7.80		-0.4805
	0.03	0.245	0.363	0.0141	62.14	14.83	47.41	-0.4583
	0.09	0.193	0.207	0.0089	75.97	23.59	66.93	-0.4798
	0.18	0.192	0.195	0.0059	84.04	25.75	69.71	-0.4864
	0.27	0.187	0.188	0.0050	86.62	34.46	77.36	-0.4872
	0.36	0.183	0.182	0.0049	86.87	38.38	79.68	-0.4873
	0.45	0.181	0.185	0.0031	91.70	38.25	79.61	-0.4885
323 K	Blank	0.327	0.355	0.0659		3.34		-0.4671
	0.03	0.228	0.253	0.0163	75.27	6.97	52.15	-0.4709
	0.09	0.211	0.233	0.0122	81.43	9.42	64.57	-0.4760
	0.18	0.210	0.222	0.0109	83.46	12.71	73.74	-0.4779
	0.27	0.207	0.215	0.0100	84.86	14.26	76.59	-0.4795
	0.36	0.208	0.216	0.0102	84.50	14.65	77.22	-0.4783
	0.45	0.209	0.215	0.0092	86.02	15.28	78.16	-0.4761
333 K	Blank	0.373	0.421	0.1204		2.63		-0.4840
	0.03	0.262	0.304	0.0244	79.70	5.01	47.48	-0.4587
	0.09	0.233	0.274	0.0212	82.39	9.78	73.07	-0.4619
	0.18	0.237	0.272	0.0196	83.70	10.10	73.93	-0.4626
	0.27	0.234	0.263	0.0193	83.98	10.65	75.28	-0.4637
	0.36	0.225	0.268	0.0173	85.59	10.96	75.98	-0.4707
	0.45	0.220	0.239	0.0173	85.65	11.15	76.39	-0.4724
343 K	Blank	0.923	0.579	0.3174		1.38		-0.4853
	0.03	0.346	0.393	0.0570	82.03	3.61	61.73	-0.4460
	0.09	0.315	0.381	0.0480	84.89	4.25	67.53	-0.4530
	0.18	0.310	0.368	0.0444	86.02	5.15	73.20	-0.4526
	0.27	0.307	0.356	0.0393	87.61	5.24	73.66	-0.4512
	0.36	0.309	0.348	0.0386	87.82	5.36	74.25	-0.4520
	0.45	0.319	0.549	0.0338	89.34	5.45	74.68	-0.4401

Appendix – A2

Polarization parameters of the MS in 1 M HCl containing various concentrations of PVA-AA-VSA at 303 to 343 K calculated from extrapolation of the Tafel lines

T	Conc. Wt.%	b _a (V)	b _c (V)	I _o (A/cm ²)	IE I _o (%)	R _p Ωcm ²	IE R _p (%)	E _o (Volts)
303 K	Blank	0.22	0.269	0.0153		16.29		-0.4842
	0.03	0.157	0.192	0.0034	77.40	33.03	50.69	-0.4811
	0.09	0.158	0.165	0.0024	84.38	44.55	80.99	-0.4783
	0.18	0.166	0.163	0.0022	85.58	85.68	86.96	-0.4775
	0.27	0.164	0.164	0.0022	85.81	105.54	87.41	-0.4763
	0.36	0.145	0.162	0.0013	91.41	124.90	86.96	-0.4768
	0.45	0.131	0.160	0.0012	92.09	127.00	87.20	-0.4799
313 K	Blank	0.298	0.316	0.0372		7.80		-0.4805
	0.03	0.393	0.501	0.0179	51.83	16.90	53.84	-0.4999
	0.09	0.224	0.272	0.0111	70.26	26.50	70.57	-0.4889
	0.18	0.204	0.242	0.0075	79.91	29.60	73.65	-0.4906
	0.27	0.175	0.246	0.0044	88.20	35.20	77.84	-0.4922
	0.36	0.174	0.225	0.0039	89.43	42.50	81.65	-0.4965
	0.45	0.171	0.226	0.0038	89.88	54.20	85.61	-0.4984
323 K	Blank	0.327	0.355	0.0659		3.34		-0.4671
	0.03	0.298	0.327	0.0237	64.08	22.72	85.31	-0.4934
	0.09	0.236	0.278	0.0132	79.98	11.43	70.79	-0.4878
	0.18	0.222	0.268	0.0112	83.03	13.72	75.67	-0.4898
	0.27	0.215	0.258	0.0096	85.42	14.86	77.54	-0.4904
	0.36	0.215	0.251	0.0088	86.58	15.34	78.24	-0.4930
	0.45	0.194	0.217	0.0079	88.08	18.30	81.76	-0.4968
333 K	Blank	0.373	0.421	0.1204		2.63		-0.4840
	0.03	0.380	0.449	0.0487	59.56	6.00	56.12	-0.4894
	0.09	0.393	0.501	0.0404	66.45	8.88	70.36	-0.4999
	0.18	0.294	0.367	0.0273	77.33	9.25	71.55	-0.4877
	0.27	0.272	0.334	0.0232	80.73	12.24	78.49	-0.4845
	0.36	0.280	0.345	0.0213	82.28	12.47	78.88	-0.4838
	0.45	0.323	0.360	0.0156	87.06	13.75	80.86	-0.4841
343 K	Blank	0.923	0.579	0.3174		1.38		-0.4853
	0.03	0.916	1.588	0.1562	50.79	3.86	64.29	-0.4738
	0.09	0.588	0.809	0.1233	61.17	3.01	54.19	-0.4759
	0.18	0.486	0.668	0.0705	77.80	2.74	49.57	-0.4829
	0.27	0.340	0.462	0.0676	78.70	3.90	64.58	-0.4835
	0.36	0.315	0.435	0.0547	82.78	4.50	69.33	-0.4950
	0.45	0.249	0.433	0.0477	84.98	4.92	71.96	-0.4894

Appendix – A3

Polarization parameters of the MS in 1 M HCl containing various concentrations of PVA-AA-PVBS at 303 to 343 K calculated from extrapolation of the Tafel lines

T	Conc. Wt. %	b _a (V)	b _c (V)	I _o (A/cm ²)	IE I _o (%)	R _p Ωcm ²	IE R _p (%)	E _o (Volts)
303 K	Blank	0.22	0.269	0.0153		16.40		-0.4842
	0.03	0.137	0.150	0.0051	66.76	45.79	64.19	-0.4842
	0.09	0.148	0.152	0.0023	85.13	45.62	64.06	-0.4855
	0.18	0.152	0.187	0.0021	86.09	77.85	78.94	-0.4892
	0.27	0.184	0.171	0.0021	86.16	78.71	79.17	-0.4889
	0.36	0.132	0.147	0.0018	87.99	81.54	79.89	-0.4762
	0.45	0.124	0.148	0.0020	87.11	96.03	82.93	-0.4853
313 K	Blank	0.298	0.316	0.0372		7.80		
	0.03	0.184	0.198	0.0090	75.83	12.56	37.87	-0.4805
	0.09	0.170	0.181	0.0063	83.08	14.31	45.49	-0.4583
	0.18	0.161	0.172	0.0055	85.23	16.53	52.80	-0.4766
	0.27	0.157	0.166	0.0051	86.30	24.21	67.78	-0.4792
	0.36	0.155	0.166	0.0048	87.12	33.91	77.00	-0.4793
	0.45	0.157	0.180	0.0033	91.26	65.46	88.08	-0.4785
323 K	Blank	0.327	0.355	0.0659		3.34		-0.4850
	0.03	0.185	0.209	0.0175	73.41	9.60	65.22	-0.4671
	0.09	0.181	0.196	0.0095	85.58	12.81	73.95	-0.4783
	0.18	0.181	0.196	0.0085	87.06	20.26	83.52	-0.4700
	0.27	0.179	0.213	0.0075	88.66	45.23	92.62	-0.4728
	0.36	0.190	0.219	0.0067	89.89	46.08	92.76	-0.4718
	0.45	0.199	0.241	0.0066	89.98	59.50	94.39	-0.4736
333 K	Blank	0.373	0.421	0.1204		2.63		-0.4733
	0.03	0.267	0.326	0.0416	65.46	6.19	57.49	-0.4840
	0.09	0.291	0.341	0.0360	70.12	6.16	57.30	-0.4582
	0.18	0.252	0.300	0.0289	75.97	6.71	60.74	-0.4657
	0.27	0.245	0.299	0.0226	81.20	7.77	66.13	-0.4658
	0.36	0.260	0.348	0.0194	83.91	8.42	68.75	-0.4686
	0.45	0.233	0.308	0.0171	85.75	11.25	76.59	-0.4740
343 K	Blank	0.923	0.579	0.3177		1.38		-0.4756
	0.03	0.375	0.471	0.1812	42.97	3.22	57.12	-0.4853
	0.09	0.343	0.467	0.1211	61.88	3.65	62.23	-0.4615
	0.18	0.360	0.445	0.1081	65.97	4.85	71.52	-0.4658
	0.27	0.337	0.431	0.0917	71.14	4.92	71.98	-0.4755
	0.36	0.357	0.468	0.0755	76.24	5.10	72.93	-0.4592
	0.45	0.334	0.422	0.0422	86.72	9.62	85.66	-0.4714

Appendix – A4

Polarization parameters of the MS in 1 M HCl containing various concentrations of PVA-VSA-PVBS at 303 to 343 K calculated from extrapolation of the Tafel lines

T	Conc. Wt.%	b _a (V)	b _c (V)	I _o (A/cm ²)	IE I _o (%)	R _p Ωcm ²	IE R _p (%)	E _o (Volts)
303 K	Blank	0.220	0.269	0.01526		16.28		-0.4842
	0.03	0.156	0.206	0.00345	77.38	66.62	75.55	-0.4942
	0.09	0.147	0.185	0.00306	79.96	90.31	81.97	-0.4975
	0.18	0.156	0.188	0.00252	83.48	97.78	83.35	-0.5010
	0.27	0.153	0.183	0.00233	84.76	124.99	86.97	-0.5019
	0.36	0.152	0.185	0.00225	85.23	171.43	90.50	-0.5016
	0.45	0.151	0.183	0.00230	84.93	173.80	90.63	-0.5010
313 K	Blank	0.000	0.000	0.03723		7.80		-0.4805
	0.03	0.298	0.316	0.01125	69.79	25.26	69.12	-0.5026
	0.09	0.260	0.341	0.00669	82.03	35.24	77.87	-0.4960
	0.18	0.190	0.238	0.00438	88.24	45.80	82.97	-0.5002
	0.27	0.177	0.219	0.00381	89.78	48.25	83.83	-0.5001
	0.36	0.170	0.211	0.00349	90.64	58.36	86.63	-0.5036
	0.45	0.169	0.198	0.00354	90.51	80.00	90.25	-0.5012
323 K	Blank	0.167	0.202	0.06588		3.34		-0.4671
	0.03	0.327	0.355	0.02953	55.18	5.25	36.49	-0.4960
	0.09	0.348	0.446	0.01897	71.20	9.84	66.10	-0.4905
	0.18	0.250	0.335	0.01405	78.68	11.25	70.34	-0.4930
	0.27	0.221	0.297	0.01027	84.41	14.25	76.58	-0.4952
	0.36	0.207	0.275	0.00996	84.88	26.20	87.26	-0.4990
	0.45	0.223	0.296	0.00759	88.49	18.80	82.25	-0.4982
333 K	Blank	0.210	0.287	0.1204		2.63		-0.4840
	0.03	0.373	0.421	0.0594	50.65	4.19	37.10	-0.4948
	0.09	0.422	0.586	0.0338	71.90	5.26	49.98	-0.4401
	0.18	0.319	0.549	0.0335	72.13	5.98	55.98	-0.4856
	0.27	0.283	0.417	0.0241	79.98	8.34	68.44	-0.4876
	0.36	0.260	0.354	0.0191	84.12	11.50	77.11	-0.4964
	0.45	0.264	0.417	0.0183	84.77	12.87	79.55	-0.4930
343 K	Blank	0.230	0.431	0.3174		1.38		-0.4853
	0.03	0.923	0.579	0.1273	59.90	3.86	64.25	-0.4810
	0.09	0.979	2.368	0.0692	78.21	4.26	67.59	-0.4777
	0.18	0.464	0.671	0.0542	82.92	4.45	69.00	-0.4773
	0.27	0.404	0.544	0.0532	83.24	5.03	72.58	-0.4783
	0.36	0.370	0.496	0.0412	87.02	5.12	73.05	-0.4934
	0.45	0.419	0.724	0.0400	87.41	5.36	74.25	-0.4910

Appendix – A5

Impedance parameters of MS in 1 M HCl containing various concentrations of investigated terpolymers at 1-12 h of immersion time

Conc Wt. %	T I M e Hrs	Blank	PVA-AAm- VSA		PVA-AA-VSA		PVA-AAm- PVBS		PVA-AA-PVBS		PVA-VSA- PVBS	
		I_{corr} (A/cm ²) *10 ⁻²	I_{corr} (A/cm ²) *10 ⁻³	IE (%)	I_{corr} (A/cm ²) *10 ⁻³	IE (%)	I_{corr} (A/cm ²) *10 ⁻³	IE (%)	I_{corr} (A/cm ²) *10 ⁻³	IE (%)	I_{corr} (A/cm ²) *10 ⁻³	IE (%)
0 . 0 3	1	1.79	1.25	93.0	9.37	47.7	1.82	89.8	5.44	69.6	7.68	57.1
	2	1.57	1.42	91.0	6.83	56.5	1.85	88.2	3.64	76.8	3.06	80.5
	3	1.46	1.51	89.7	5.79	60.3	2.05	86.2	2.76	81.1	2.52	82.7
	4	1.42	1.46	89.7	5.82	58.9	2.26	84.1	2.50	82.4	2.33	83.6
	5	1.49	1.45	90.3	5.98	60.0	2.31	84.6	2.63	82.4	2.26	84.9
	6	1.45	1.37	90.5	5.94	58.9	2.39	83.4	2.61	82.0	2.30	84.1
	7	1.43	1.39	90.3	6.36	55.5	2.32	83.8	2.11	85.2	2.58	81.9
	8	1.41	1.40	90.1	6.37	55.0	2.30	83.8	2.40	83.0	2.59	81.7
	9	1.38	1.36	90.1	7.15	48.1	2.29	83.4	2.09	84.9	2.73	80.2
	10	1.39	1.30	90.6	7.33	47.2	2.25	83.8	1.98	85.7	2.64	80.9
	11	1.42	1.34	90.6	6.93	51.3	2.22	84.4	2.21	84.5	2.49	82.5
	12	1.45	1.30	91.0	7.18	50.4	2.34	83.8	1.81	87.5	2.38	83.5
0 . 0 9	1	1.79	1.79	90.0	1.79	90.0	1.27	92.9	3.53	80.3	4.09	77.2
	2	1.57	1.92	87.8	1.88	88.0	1.26	92.3	2.58	83.6	2.77	82.4
	3	1.46	1.99	86.4	1.91	86.9	1.32	91.3	2.05	86	2.35	83.9
	4	1.42	2.09	85.2	1.95	86.3	1.49	89.5	2.26	84.1	2.20	84.5
	5	1.49	2.02	86.5	2.08	86.1	1.52	89.8	2.30	84.6	2.14	85.7
	6	1.45	2.09	85.5	2.02	86.0	1.53	89.4	2.39	83.4	1.90	86.8
	7	1.43	1.89	86.8	2.04	85.7	1.48	89.7	2.32	83.8	1.89	86.8
	8	1.41	1.90	86.6	2.10	85.1	1.47	89.6	2.30	83.8	1.87	86.8
	9	1.38	1.87	86.4	2.07	85.0	1.42	89.7	2.29	83.4	1.90	86.2
	10	1.39	1.88	86.5	2.10	84.8	1.40	89.9	2.25	83.8	1.95	85.9
	11	1.42	1.80	87.3	2.11	85.2	1.39	90.2	2.22	84.4	1.84	87.1
	12	1.45	1.80	87.6	2.11	85.4	1.41	90.3	2.34	83.8	1.86	87.2
0 . 1 8	1	1.79	1.25	93.0	1.44	92.0	1.64	94.7	2.33	87.3	2.17	87.9
	2	1.57	1.32	91.6	1.40	91.1	1.04	93.4	2.08	86.8	2.15	86.3
	3	1.46	1.55	89.4	1.41	90.3	1.18	91.9	1.99	86.3	2.34	84.0
	4	1.42	1.61	88.7	1.46	89.7	1.25	91.2	1.99	86.0	2.01	85.8
	5	1.49	1.63	89.1	1.48	90.1	1.33	91.1	2.11	85.9	1.78	88.0
	6	1.45	1.65	88.6	1.44	90.1	1.44	90	2.05	85.8	1.83	87.3
	7	1.43	1.56	89.1	1.46	89.8	1.52	89.3	2.14	85.0	1.72	88.0
	8	1.41	1.52	89.3	1.46	89.7	1.46	89.7	1.99	85.9	1.80	87.3
	9	1.38	1.42	89.7	1.62	88.2	1.38	90	1.72	87.5	1.69	87.7
	10	1.39	1.45	89.6	1.80	87.0	1.33	90.4	1.85	86.7	1.71	87.7

Appendices

	11	1.42	1.31	90.8	1.84	87.0	1.33	90.7	1.86	86.9	1.66	88.3
	12	1.45	1.36	90.6	1.95	86.5	1.24	91.5	1.68	88.4	1.63	88.8
0 . 2 7	1	1.79	1.21	93.3	1.55	91.4	0.95	94.7	1.82	89.8	1.55	91.3
	2	1.57	1.35	91.4	1.33	91.6	0.99	93.7	1.85	88.2	1.40	91.0
	3	1.46	1.62	88.9	1.37	90.6	1.16	92.1	1.48	89.9	1.51	89.6
	4	1.42	1.74	87.7	1.79	87.5	1.25	91.2	1.76	87.6	1.70	88.0
	5	1.49	1.80	88.0	1.92	86.4	1.31	91.2	1.80	88.0	1.53	89.8
	6	1.45	1.90	86.9	1.87	86.4	1.37	90.5	1.97	86.4	1.58	89.1
	7	1.43	1.83	87.2	1.92	86.1	1.44	89.9	1.97	86.2	1.87	86.9
	8	1.41	1.76	87.6	1.93	86.4	1.45	89.7	1.82	87.1	1.70	88.0
	9	1.38	1.74	87.4	2.03	85.9	1.48	89.3	1.88	86.3	1.79	87.0
	10	1.39	1.67	87.9	2.11	85.2	1.43	89.7	1.85	86.7	1.53	89.1
	11	1.42	1.60	88.8	2.05	85.8	1.39	90.2	1.80	87.3	1.58	88.9
	12	1.45	1.59	89.0	2.22	86.2	1.35	90.6	1.76	87.8	1.44	90.1
0 . 3 6	1	1.79	0.88	95.0	1.42	92.1	0.94	94.7	1.51	91.6	1.42	92.1
	2	1.57	1.12	92.9	1.36	91.3	0.84	94.6	1.43	90.9	1.35	91.4
	3	1.46	1.35	90.7	1.31	91.0	1.06	92.7	1.40	90.4	1.53	89.5
	4	1.42	1.55	89.0	1.47	89.6	1.17	91.8	1.41	90.1	1.52	89.2
	5	1.49	1.70	88.6	1.54	89.7	1.14	92.4	1.45	90.3	1.60	89.3
	6	1.45	1.80	87.5	1.60	88.9	1.02	92.9	1.64	88.6	1.69	88.3
	7	1.43	1.84	87.1	1.63	88.6	1.03	92.8	1.35	90.6	1.67	88.3
	8	1.41	1.83	87.1	1.72	87.8	1.08	92.4	1.54	89.1	1.62	88.5
	9	1.38	1.74	87.4	1.79	87.0	0.93	93.2	1.65	88.0	1.59	88.4
	10	1.39	1.70	87.7	1.84	86.8	0.99	93.7	1.48	89.3	1.52	89.2
	11	1.42	1.61	88.7	1.98	86.1	1.08	92.4	1.52	89.3	1.38	90.3
	12	1.45	1.52	89.5	1.99	86.3	0.95	93.4	1.51	89.5	1.41	90.3
0 . 4 5	1	1.79	0.85	95.2	1.13	93.6	1.01	94.3	1.22	93.2	1.27	92.9
	2	1.57	1.07	93.2	1.37	91.2	1.17	92.6	1.33	91.5	1.41	91.0
	3	1.46	1.07	92.7	1.37	90.5	1.23	91.5	1.66	88.6	1.56	89.3
	4	1.42	1.39	90.2	1.47	89.6	1.38	90.3	1.55	89.2	1.67	88.2
	5	1.49	1.51	89.9	1.46	90.2	1.53	89.7	1.48	90.1	1.77	88.1
	6	1.45	1.59	89.0	1.58	89.0	1.51	89.5	1.43	90.1	1.72	88.1
	7	1.43	1.59	88.8	1.60	88.7	1.57	89.0	1.39	90.3	1.62	88.7
	8	1.41	1.54	89.1	1.59	88.7	1.65	88.3	1.38	90.3	1.43	89.9
	9	1.38	1.47	89.3	1.43	89.6	1.54	88.8	1.27	90.7	1.45	89.5
	10	1.39	1.44	89.6	1.32	90.4	1.60	88.5	1.27	90.8	1.42	89.8
	11	1.42	1.35	90.5	1.30	90.8	1.56	89.3	1.18	91.7	1.40	90.2
	12	1.45	1.25	91.4	1.28	91.1	1.47	89.8	1.15	92.3	1.39	90.4

Appendix – A6

Impedance parameters of the MS in 1 M HCl containing various concentrations of PVA-AAm-VSA at 303 to 343 K calculated from extrapolation of the Tafel lines

Temp. K	Conc. Wt. %	Rs Ωcm^2	Yo* 10^{-6}	n	Rct $\text{k}\Omega\text{cm}^2$	IE _{Rct} (%)	Cdl $*10^3 \mu\text{Fcm}^{-2}$	Surface coverage (θ)
303 K	Blank	0.544	606.4	0.748	6.85		9.98	
	0.03	1.083	390.0	0.769	17.54	60.93	5.54	0.44
	0.09	1.154	286.2	0.790	30.00	77.16	3.19	0.68
	0.18	1.120	251.7	0.798	43.05	84.08	2.66	0.73
	0.27	1.142	263.2	0.789	54.90	87.52	3.42	0.66
	0.36	1.064	253.8	0.790	66.05	89.62	3.36	0.66
313 K	0.45	1.117	250.6	0.789	78.34	91.25	3.53	0.65
	Blank	0.771	546.7	0.749	4.14		7.29	
	0.03	0.777	289.0	0.749	28.32	85.40	5.94	0.19
	0.09	0.643	261.0	0.807	32.98	87.46	2.29	0.69
	0.18	0.737	234.5	0.818	42.71	90.32	1.82	0.75
	0.27	0.666	218.3	0.826	59.79	93.08	1.61	0.78
323 K	0.36	0.695	234.7	0.817	67.49	93.87	2.04	0.72
	0.45	0.694	234.0	0.818	75.78	94.54	2.07	0.72
	Blank	0.751	1236.1	0.684	2.26		48.10	
	0.03	0.619	299.8	0.806	11.52	80.35	2.12	0.96
	0.09	0.372	248.3	0.823	18.15	87.53	1.52	0.97
	0.18	0.358	223.4	0.831	26.14	91.34	1.31	0.97
333 K	0.27	0.368	222.1	0.827	31.50	92.81	1.42	0.97
	0.36	0.337	227.4	0.822	36.31	93.76	1.60	0.97
	0.45	0.378	214.7	0.828	41.27	94.51	1.42	0.97
	Blank	0.552	894.0	0.756	1.42		8.93	
	0.03	0.752	545.3	0.792	3.40	58.21	3.94	0.56
	0.09	0.775	224.7	0.867	5.81	75.52	0.67	0.92
343 K	0.18	0.648	550.1	0.821	5.92	75.98	3.22	0.64
	0.27	0.631	313.6	0.817	6.01	76.34	1.69	0.81
	0.36	0.919	350.6	0.806	10.64	86.64	2.53	0.72
	0.45	0.495	339.6	0.816	10.85	86.89	2.17	0.76
	Blank	0.729	883.2	0.723	0.69		10.04	
	0.03	0.710	647.3	0.788	2.99	76.85	4.99	0.52
343 K	0.09	0.685	706.3	0.776	3.40	79.63	6.69	0.36
	0.18	0.665	597.7	0.798	3.71	81.32	4.23	0.59
	0.27	0.694	603.6	0.799	3.95	82.44	4.28	0.59
	0.36	0.712	491.9	0.825	4.10	83.09	2.46	0.76
	0.45	0.735	486.8	0.829	3.91	82.26	2.31	0.78

Appendix – A7

Impedance parameters of the MS in 1 M HCl containing various concentrations of PVA-AA-VSA at 303 to 343 K calculated from extrapolation of the Tafel lines

Temp. K	Conc. Wt.%	Rs Ωcm^2	Yo* 10^{-6}	n	Rct $\text{k}\Omega\text{cm}^2$	IE _{Rct} (%)	Cdl *10 ³ μFcm^{-2}	Surface coverage (θ)
303 K	Blank	0.544	606.4	0.748	6.85		9.98	
	0.03	0.798	402.2	0.792	23.09	70.32	4.42	0.56
	0.09	0.866	382.2	0.791	32.01	78.59	4.60	0.54
	0.18	0.807	364.2	0.793	39.02	82.44	4.42	0.56
	0.27	0.874	358.2	0.792	46.48	85.26	4.62	0.54
	0.36	0.979	276.8	0.838	49.43	86.14	1.73	0.83
	0.45	1.001	395.2	0.860	55.37	87.62	2.01	0.80
313 K	Blank	0.771	546.7	0.749	4.14		7.29	
	0.03	0.733	808.0	0.738	6.79	39.10	1.73	0.76
	0.09	0.896	527.7	0.772	10.37	60.13	6.68	0.08
	0.18	0.844	525.5	0.774	13.20	68.67	6.96	0.05
	0.27	0.894	546.9	0.766	15.78	73.80	0.86	0.88
	0.36	0.852	601.6	0.753	17.28	76.07	1.25	0.83
	0.45	0.830	654.0	0.742	18.11	77.17	1.69	0.77
323 K	Blank	0.751	1236.1	0.684	2.26		48.10	
	0.03	0.642	614.7	0.787	4.59	50.70	5.30	0.89
	0.09	0.611	493.8	0.816	6.22	63.60	3.02	0.94
	0.18	0.623	543.7	0.805	7.40	69.39	4.08	0.92
	0.27	0.749	832.3	0.754	8.31	72.74	14.80	0.69
	0.36	0.681	582.0	0.798	9.10	75.13	5.10	0.89
	0.45	0.725	688.5	0.782	10.06	77.50	8.05	0.83
333 K	Blank	0.552	894.0	0.756	1.42		8.93	
	0.03	0.556	578.0	0.786	3.66	61.17	4.62	0.48
	0.09	0.675	716.6	0.794	4.29	66.84	5.76	0.35
	0.18	0.723	577.3	0.810	4.51	68.44	3.64	0.59
	0.27	0.729	561.3	0.798	4.62	69.21	4.09	0.54
	0.36	0.710	626.4	0.793	4.98	71.44	5.13	0.43
	0.45	0.810	1135.2	0.738	5.45	73.89	2.53	0.72
343 K	Blank	0.729	883.2	0.723	0.69		10.04	
	0.03	0.741	2071.2	0.759	1.44	51.91	1.61	0.85
	0.09	0.775	2041.1	0.750	1.53	54.64	1.98	0.81
	0.18	0.765	1745.0	0.758	1.61	56.82	1.20	0.88
	0.27	0.755	1476.6	0.763	1.79	61.20	1.69	0.84
	0.36	0.741	1210.6	0.773	2.06	66.37	1.20	0.88
	0.45	0.694	842.2	0.806	2.61	73.44	5.37	0.48

Appendix – A8

Impedance parameters of the MS in 1 M HCl containing various concentrations of PVA-AAm-PVBS at 303 to 343 K calculated from extrapolation of the Tafel lines

Temp. K	Conc. Wt.%	Rs Ωcm^2	Yo* 10^{-6}	n	Rct $\text{k}\Omega\text{cm}^2$	IE _{Rct} (%)	Cdl *10 ³ μFcm^{-2}	Surface coverage (θ)
303 K	Blank	0.544	606.4	0.748	6.85		9.98	
	0.03	1.163	379.4	0.777	19.56	65.00	4.86	0.51
	0.09	1.152	253.1	0.806	24.30	71.80	2.05	0.79
	0.18	1.284	221.2	0.812	37.35	81.70	1.79	0.82
	0.27	1.202	217.0	0.806	48.81	86.00	2.03	0.80
	0.36	1.222	203.3	0.809	60.34	88.60	1.89	0.81
	0.45	1.168	201.5	0.809	69.82	90.20	1.94	0.81
313 K	Blank	0.771	546.7	0.749	4.14		7.29	
	0.03	0.697	367.1	0.798	27.20	84.80	3.76	0.48
	0.09	0.602	360.0	0.799	37.55	89.00	3.94	0.46
	0.18	0.566	365.3	0.794	45.91	91.00	4.54	0.38
	0.27	0.661	306.8	0.831	48.19	91.40	2.15	0.71
	0.36	0.561	394.0	0.784	54.93	92.50	6.19	0.15
	0.45	0.553	350.9	0.800	56.61	92.70	4.17	0.43
323 K	Blank	0.751	1236.1	0.684	2.26		48.10	
	0.03	0.928	379.0	0.808	9.66	76.60	2.67	0.94
	0.09	0.872	281.9	0.831	16.19	86.00	1.56	0.97
	0.18	0.963	286.1	0.828	20.89	89.20	1.75	0.96
	0.27	0.755	248.9	0.849	23.16	90.20	1.17	0.98
	0.36	0.746	258.5	0.840	23.48	90.40	1.36	0.97
	0.45	0.747	274.1	0.835	23.26	90.30	1.54	0.97
333 K	Blank	0.552	894.0	0.756	1.42		8.93	
	0.03	0.752	330.1	0.831	5.81	75.50	1.53	0.83
	0.09	0.687	397.1	0.810	6.81	79.10	2.52	0.72
	0.18	0.689	372.0	0.818	7.76	81.70	2.18	0.76
	0.27	0.752	388.4	0.816	8.39	83.00	2.39	0.73
	0.36	0.763	404.8	0.815	8.23	82.70	2.56	0.71
	0.45	0.893	403.7	0.815	8.49	83.20	2.56	0.71
343 K	Blank	0.729	883.2	0.723	0.69		10.04	
	0.03	0.732	901.4	0.842	1.46	52.70	3.49	0.66
	0.09	0.752	1158.1	0.807	1.49	53.50	6.85	0.34
	0.18	0.738	973.8	0.816	1.60	56.70	5.09	0.51
	0.27	0.497	680.9	0.851	1.67	58.50	2.34	0.78
	0.36	0.529	821.8	0.820	1.75	60.40	4.06	0.61
	0.45	0.540	615.0	0.837	2.44	71.60	2.57	0.75

Appendix – A9

Impedance parameters of the MS in 1 M HCl containing various concentrations of PVA-VSA-PVBS at 303 to 343 K calculated from extrapolation of the Tafel lines

Temp. K	Conc. Wt.%	R _s Ωcm ²	Y _o * 10 ⁻⁶	n	R _{ct} kΩcm ²	IE _{Rct} (%)	C _{dl} *10 ³ μFcm ⁻²	Surface coverage (θ)
303 K	Blank	0.544	606.4	0.748	6.85		9.98	
	0.03	0.598	423.8	0.790	14.84	53.82	4.36	0.56
	0.09	0.605	308.5	0.803	40.47	83.07	3.13	0.69
	0.18	0.617	314.5	0.797	52.09	86.84	3.72	0.63
	0.27	0.642	322.1	0.794	58.97	88.38	4.13	0.59
	0.36	0.649	329.2	0.790	65.60	89.55	4.70	0.53
	0.45	0.671	327.0	0.789	70.09	90.22	4.82	0.52
313 K	Blank	0.771	546.7	0.749	4.14		7.29	
	0.03	0.738	595.5	0.790	10.55	60.81	6.13	0.16
	0.09	0.766	603.0	0.785	13.29	68.89	6.05	0.17
	0.18	0.843	595.2	0.787	15.34	73.04	4.00	0.45
	0.27	0.811	623.7	0.788	15.82	73.86	5.37	0.26
	0.36	1.163	379.4	0.777	19.56	78.86	4.86	0.33
	0.45	1.152	253.1	0.806	27.25	84.83	2.11	0.71
323 K	Blank	0.751	1236.1	0.684	2.26		48.10	
	0.03	0.689	590.1	0.791	5.34	57.56	4.97	0.90
	0.09	0.756	625.9	0.784	7.77	70.87	6.45	0.87
	0.18	0.928	379.0	0.808	9.66	76.55	2.67	0.94
	0.27	0.738	595.5	0.790	10.55	78.54	6.13	0.87
	0.36	0.766	603.0	0.785	13.29	82.96	7.05	0.85
	0.45	0.843	595.2	0.787	14.02	83.85	6.83	0.86
333 K	Blank	0.552	894.0	0.756	1.42		8.93	
	0.03	0.710	647.3	0.788	2.99	52.51	4.99	0.44
	0.09	0.685	706.3	0.776	3.40	58.21	6.69	0.25
	0.18	0.665	597.7	0.798	3.71	61.67	4.23	0.53
	0.27	0.523	495.9	0.812	6.19	77.04	3.18	0.64
	0.36	0.469	581.5	0.799	6.84	79.21	4.65	0.48
	0.45	0.490	617.1	0.791	8.00	82.23	5.82	0.35
343 K	Blank	0.729	883.2	0.723	0.69		10.04	
	0.03	0.608	929.3	0.813	1.85	62.58	5.18	0.50
	0.09	0.619	1141.9	0.798	2.19	68.35	8.30	0.20
	0.18	0.620	1032.1	0.818	2.46	71.85	5.91	0.43
	0.27	0.591	994.7	0.823	2.70	74.30	5.41	0.48
	0.36	0.579	1074.7	0.818	2.93	76.35	6.44	0.38
	0.45	0.486	1102.8	0.816	3.15	77.97	6.96	0.33

Appendix – A10

Impedance parameters of MS in 1 M HCl containing various concentrations of PVA-AAm-VSA at 1-12 h of immersion time

	Conc. Wt. %	1	2	3	4	5	6	7	8	9	10	11	12
R_s Ωcm^2	0.03	1.46	1.71	1.69	1.65	1.45	1.30	1.43	1.42	0.67	0.72	0.73	0.76
	0.09	0.86	0.91	0.87	0.83	0.80	0.78	0.77	0.74	0.73	0.75	0.76	0.73
	0.18	0.98	0.96	0.95	0.96	0.80	0.80	0.78	0.75	0.78	0.79	0.92	0.92
	0.27	0.97	0.96	0.95	0.83	0.83	0.84	0.78	0.80	0.80	0.78	0.75	0.74
	0.36	1.08	1.06	1.04	1.04	1.04	1.04	0.96	0.97	0.97	0.97	0.95	0.95
	0.45	1.14	1.15	1.14	1.12	1.00	0.99	0.97	0.96	0.97	0.97	0.98	0.97
Y_o^* 10^{-6} $\mu\Omega^{-1}$ S^{cm}^{-2}	0.03	187.6	172.8	164.1	162.6	230.1	307.8	258.4	273.5	315.8	278.5	283.4	285.4
	0.09	264.0	216.7	230.0	254.5	270.1	288.4	299.2	340.8	330.3	322.1	317.4	334.2
	0.18	142.0	134.7	131.8	128.1	181.4	180.4	190.7	206.1	192.4	195.4	135.8	130.1
	0.27	186.5	165.9	161.7	212.1	209.8	208.6	227.2	228.5	230.9	236.9	256.1	273.7
	0.36	193.9	180.9	181.5	184.9	183.0	188.9	225.7	229.2	230.8	231.7	247.1	248.9
	0.45	156.0	195.8	209.3	268.1	323.9	358.6	393.4	424.8	418.5	435.5	432.5	469.6
n	0.03	0.806	0.812	0.816	0.814	0.764	0.723	0.747	0.742	0.729	0.745	0.745	0.745
	0.09	0.745	0.770	0.759	0.748	0.742	0.736	0.731	0.717	0.720	0.725	0.727	0.719
	0.18	0.835	0.838	0.839	0.843	0.793	0.793	0.784	0.774	0.784	0.784	0.830	0.835
	0.27	0.804	0.812	0.813	0.775	0.775	0.775	0.763	0.763	0.763	0.760	0.749	0.743
	0.36	0.795	0.801	0.800	0.798	0.798	0.795	0.771	0.771	0.771	0.771	0.763	0.763
	0.45	0.812	0.845	0.842	0.829	0.815	0.813	0.808	0.802	0.805	0.800	0.796	0.788
R_{ct} Ωcm^2	Blank	10.5	12.0	13.1	13.4	13.4	13.5	13.3	13.5	13.5	13.6	13.6	13.4
	0.03	85.3	132.0	142.4	144.1	151.0	148.0	145.4	142.6	121.7	133.8	126.3	117.5
	0.09	85.2	92.2	91.2	116.6	90.5	86.4	82.3	79.9	76.3	69.3	67.1	64.0
	0.18	85.6	115.0	129.8	143.1	142.3	131.5	131.3	129.1	123.8	116.2	109.2	100.7
	0.27	113.2	149.2	164.1	170.4	173.6	176.3	177.4	181.7	177.5	165.6	163.3	157.6
	0.36	144.9	144.9	155.3	176.3	162.9	146.7	152.3	162.3	122.1	118.1	132.2	117.2
	0.45	111.9	167.9	194.3	200.4	207.2	208.7	209.1	207.8	192.1	188.8	155.7	160.5
$IE_{R_{ct}}$ (%)	0.03	87.7	90.9	90.8	90.7	91.1	90.9	90.9	90.5	88.9	89.8	89.2	88.6
	0.09	87.7	87.0	85.6	88.5	85.2	84.4	83.8	83.1	82.3	80.3	79.7	79
	0.18	87.7	89.6	89.9	90.6	90.6	89.7	89.9	89.5	89.1	88.3	87.5	86.7
	0.27	90.8	91.7	91.6	92.4	91.8	90.8	91.3	91.7	89.0	88.5	89.7	88.5
	0.36	90.7	92.0	92.0	92.1	92.3	92.3	92.5	92.6	92.4	91.8	91.7	91.5
	0.45	90.6	92.9	93.2	93.3	93.5	93.5	93.6	93.5	93.0	92.8	91.3	91.6
C_{dl} $*10^3$ μFcm^{-2}	Blank	8.18	4.15	5.38	8.13	9.04	11.00	12.30	19.10	16.90	14.30	13.40	16.40
	0.03	1.93	1.77	1.60	1.62	5.83	8.80	9.13	10.70	15.90	10.30	10.30	10.10
	0.09	1.51	2.05	2.10	2.18	3.01	3.26	4.14	4.06	5.72	5.02	6.37	6.34
	0.18	0.97	0.93	0.92	0.85	2.85	2.84	3.54	4.66	3.50	3.55	1.04	0.93
	0.27	1.99	1.62	1.59	4.22	4.15	4.03	5.54	5.55	5.55	5.99	7.92	9.42
	0.36	2.55	2.29	2.39	2.54	2.51	2.76	5.28	5.42	5.43	5.35	6.68	6.68
	0.45	1.71	1.28	1.48	2.48	3.83	4.38	5.39	6.64	5.83	6.59	7.11	8.90

Appendix A11

Impedance parameters of MS in 1 M HCl containing various concentrations of PVA-AA-VSA at 1-12 h of immersion time

	Conc. Wt. %	1	2	3	4	5	6	7	8	9	10	11	12
R_s Ωcm^2	0.03	0.74	0.71	0.70	0.70	0.69	0.69	0.69	0.70	0.68	0.68	0.69	0.68
	0.09	0.76	0.75	0.75	0.74	0.61	0.61	0.57	0.62	0.60	0.61	0.58	0.72
	0.18	0.83	0.80	0.78	0.78	0.77	0.77	0.75	0.77	0.76	0.73	0.73	0.73
	0.27	0.89	0.89	0.88	0.85	0.85	0.83	0.84	0.83	0.82	0.76	0.77	0.79
	0.36	1.01	0.96	0.95	0.92	0.92	0.92	0.90	0.88	0.88	0.87	0.87	0.86
	0.45	1.02	1.04	1.02	1.02	1.01	1.02	1.02	1.02	1.01	1.02	1.02	1.01
Y_o^* 10^{-6} $\mu\Omega^{-1}$ S^n cm^{-2}	0.03	247.3	265.7	306.5	333.4	372.5	371.6	401.9	388.4	448.6	456.8	458.2	482.7
	0.09	174.2	179.6	181.8	197.7	285.9	281.7	307.6	277.6	288.4	289.8	314.3	385.9
	0.18	187.4	209.3	224.8	235.7	242.5	231.8	247.6	243.9	254.5	297.7	302.3	308.7
	0.27	186.9	185.0	192.6	205.7	212.7	231.5	235.8	238.3	246.9	304.4	342.7	328.3
	0.36	186.4	193.6	199.8	206.0	204.0	218.8	233.8	247.7	247.3	257.5	273.5	282.1
	0.45	150.4	139.7	141.8	148.6	152.9	151.6	152.9	153.6	158.6	163.8	167.0	169.4
n	0.03	0.806	0.802	0.789	0.782	0.772	0.774	0.767	0.772	0.758	0.758	0.759	0.754
	0.09	0.813	0.812	0.811	0.803	0.757	0.756	0.745	0.760	0.755	0.756	0.745	0.735
	0.18	0.815	0.804	0.796	0.791	0.786	0.790	0.783	0.785	0.781	0.764	0.762	0.761
	0.27	0.808	0.809	0.806	0.798	0.794	0.786	0.784	0.782	0.778	0.755	0.745	0.750
	0.36	0.810	0.808	0.805	0.800	0.802	0.794	0.787	0.781	0.781	0.776	0.771	0.767
	0.45	0.830	0.838	0.837	0.832	0.830	0.831	0.830	0.830	0.827	0.823	0.821	0.821
R_{ct} Ωcm^2	Blank	10.5	12.0	13.1	13.4	13.4	13.5	13.3	13.5	13.5	13.6	13.6	13.4
	0.03	54.4	57.3	54.8	53.6	52.3	50.6	49.3	48.7	48.1	47.3	46.4	46.4
	0.09	69.7	80.5	84.6	87.8	89.5	87.3	85.9	80.8	79.2	75.1	72.9	58.5
	0.18	102.5	116.8	123.1	121.5	123.0	115.9	113.7	102.1	98.1	94.8	90.7	88.2
	0.27	95.5	112.4	112.4	110.3	107.1	104.5	96.7	93.7	92.6	91.4	90.2	86.8
	0.36	98.6	113.3	117.1	117.6	116.1	114.6	111.1	105.4	100.6	95.5	97.6	91.4
	0.45	103.7	137.8	153.3	159.4	163.0	160.6	162.0	159.6	153.0	152.8	146.3	152.7
$IE_{R_{ct}}$ (%)	0.03	80.7	79.1	76.1	74.9	74.4	73.3	73.0	72.2	72.0	71.2	70.6	71.1
	0.09	84.9	85.1	84.5	84.7	85.0	84.5	84.5	83.3	83.0	81.9	81.3	77.0
	0.18	89.8	89.7	89.3	88.9	89.1	88.3	88.3	86.8	86.3	85.6	85.0	84.8
	0.27	89.0	89.3	88.3	87.8	87.5	87.1	86.3	85.6	85.5	85.1	84.9	84.5
	0.36	89.3	89.4	88.8	88.6	88.5	88.2	88.0	87.2	86.6	85.7	86.1	85.3
	0.45	89.86	91.29	91.44	91.57	91.79	91.59	91.79	91.53	91.19	91.09	90.7	91.2
C_{dl} $*10^3$ μF cm^{-2}	Blank	8.18	4.15	5.38	8.13	9.04	11.0	12.3	19.1	16.9	14.3	13.4	16.4
	0.03	2.43	2.85	4.14	5.09	6.89	6.60	8.16	7.11	10.85	11.08	10.91	12.72
	0.09	1.51	1.65	1.71	2.16	7.50	7.37	9.96	6.51	7.51	7.34	9.73	14.28
	0.18	1.76	2.47	3.09	3.55	4.00	3.48	4.25	3.90	4.37	7.01	7.40	7.65
	0.27	1.91	1.93	2.14	2.60	2.86	3.62	3.75	3.85	4.31	8.43	11.74	9.95
	0.36	1.86	2.10	2.28	2.58	2.46	3.03	3.67	4.32	4.21	4.73	5.65	6.15
	0.45	1.09	0.94	1.00	1.13	1.22	1.18	1.22	1.22	1.32	1.44	1.50	1.56

Appendix – A12

Impedance parameters of MS in 1 M HCl containing various concentrations of PVA-AAm-PVBS at 1-12 h of immersion time

	Conc. Wt. %	1	2	3	4	5	6	7	8	9	10	11	12
R_s Ωcm^2	0.03	0.666	0.645	0.718	0.714	0.709	0.712	0.698	0.696	0.697	0.695	0.697	0.684
	0.09	0.928	0.899	0.901	0.909	0.996	1.013	1.021	1.010	0.989	0.980	1.001	0.960
	0.18	0.755	0.731	0.746	0.715	0.694	0.720	0.714	0.707	0.709	0.698	0.693	0.684
	0.27	1.139	1.153	1.143	1.168	1.133	1.153	1.143	1.168	1.133	1.135	1.143	1.142
	0.36	1.161	78.510	1.153	1.137	1.139	1.176	1.138	1.124	1.132	1.135	1.143	1.142
	0.45	1.046	1.023	1.038	1.012	1.011	1.009	1.012	1.010	0.999	1.007	1.002	1.001
Y_o^* 10^{-6} $\mu\Omega^{-1}$ $S^{\text{n}}\text{cm}^{-2}$	0.03	231.7	246.3	214.8	246.5	264.3	268.1	256.5	281.3	299.9	355.4	391.5	381.4
	0.09	149.5	147.7	152.3	164.5	165.4	168	164.3	167.4	168	173.7	176.9	184.8
	0.18	162.1	171	188.1	192.6	202.3	197	207	211.6	220.6	221.2	230.2	244.3
	0.27	172.1	160.3	178.1	194.6	201.6	180.3	209.8	212.7	220.8	212.5	218.2	215.8
	0.36	231.7	246.3	214.8	246.5	264.3	268.1	256.5	281.3	299.9	355.4	391.5	381.4
	0.45	184.8	160.5	166	148.3	158.5	160.5	166	148.3	158.5	160.3	162.3	163.2
n	0.03	0.809	0.814	0.840	0.831	0.821	0.823	0.829	0.824	0.817	0.802	0.802	0.809
	0.09	0.837	0.840	0.838	0.830	0.829	0.827	0.830	0.828	0.827	0.823	0.823	0.817
	0.18	0.835	0.831	0.823	0.821	0.816	0.820	0.814	0.812	0.808	0.809	0.805	0.798
	0.27	0.830	0.838	0.825	0.814	0.809	0.822	0.806	0.804	0.800	0.804	0.803	0.803
	0.36	0.809	0.814	0.840	0.831	0.821	0.823	0.829	0.824	0.817	0.802	0.802	0.809
	0.45	0.795	0.809	0.803	0.812	0.803	0.809	0.803	0.812	0.803	0.803	0.800	0.810
R_{ct} Ωcm^2	Blank	10.5	12.0	13.1	13.4	13.4	13.5	13.3	13.5	13.5	13.6	13.6	13.4
	0.03	50.8	61.5	65	71.3	68.9	72.1	73	69.5	70.7	64.3	65.5	65.7
	0.09	86.4	110.9	122.9	125.5	123.2	124.1	125.1	120.8	118.6	119.4	117.4	115.3
	0.18	74.1	91.7	93.8	97	97.5	96.6	90.4	87.2	84.4	84.4	83.9	80.8
	0.27	78.5	102.4	111.7	114.5	117.4	114.1	112.5	104.8	102	97.2	92.7	86.7
	0.36	50.8	61.5	65	71.3	68.9	72.1	73	69.5	70.7	64.3	65.5	65.7
	0.45	115.5	154.2	168.5	168.9	174.5	154.2	168.5	168.9	174.5	169.5	168.5	163.5
IE_{Rct} (%)	0.03	79.3	80.5	79.8	81.2	80.6	81.2	81.8	80.5	80.9	78.8	79.2	79.6
	0.09	85.8	86.9	86.0	86.1	86.3	86.0	85.3	84.5	84.0	83.9	83.8	83.4
	0.18	86.6	88.3	88.3	88.3	88.6	88.2	88.2	87.1	86.8	86.0	85.3	84.5
	0.27	87.8	89.2	89.3	89.3	89.1	89.1	89.4	88.8	88.6	88.6	88.4	88.4
	0.36	90.9	92.2	92.2	92.0	92.3	91.2	92.1	92.0	92.3	92.0	91.9	91.8
	0.45	90.9	93.0	93.5	93.6	93.3	94.0	94.0	93.6	93.7	93.3	93.0	92.8
C_{dl} $*10^3$ μFcm^{-2}	Blank	8.18	4.15	5.38	8.13	9.04	11.0	12.3	19.1	16.9	14.3	13.4	16.4
	0.03	2.10	2.22	1.32	1.81	2.23	2.25	1.95	2.32	2.81	4.21	4.80	4.16
	0.09	0.94	0.93	1.02	1.27	1.28	1.34	1.26	1.31	1.33	1.47	1.51	1.71
	0.18	1.04	1.23	1.55	1.66	1.89	1.72	1.96	2.05	2.28	2.26	2.50	2.97
	0.27	1.21	1.05	1.46	1.91	2.16	1.55	2.38	2.46	2.72	2.39	2.49	2.40
	0.36	2.10	2.22	1.32	1.81	2.23	2.25	1.95	2.32	2.81	4.21	4.80	4.16
	0.45	2.42	1.75	2.03	1.56	1.93	1.75	2.03	1.56	1.93	1.96	2.08	1.78

Appendix - A13

Impedance parameters of MS in 1 M HCl containing various concentrations of PVA-VSA-PVBS at 1-12 h of immersion time

	Conc. Wt.%	1	2	3	4	5	6	7	8	9	10	11	12
R_s Ωcm²	0.03	0.800	0.843	0.826	0.805	0.781	0.775	0.777	0.796	0.779	0.775	0.771	0.770
	0.09	1.513	1.437	1.423	1.416	1.418	1.408	1.423	1.407	1.414	1.379	1.414	1.409
	0.18	0.937	0.875	0.892	0.895	0.886	0.889	0.893	0.880	0.887	0.888	0.896	0.910
	0.27	1.021	1.321	1.200	1.162	1.160	1.163	1.165	1.156	1.169	1.161	1.174	1.187
	0.36	1.157	1.154	1.147	1.137	1.132	1.130	1.108	1.109	1.100	1.104	1.103	1.110
	0.45	1.334	1.313	1.309	1.301	1.311	1.302	1.309	1.311	1.316	1.317	1.323	1.326
Y_o⁺ 10⁻⁶ μΩ⁻¹ S^ocm⁻²	0.03	319.9	276.5	262.0	284.1	309.8	299.0	309.7	314.5	315.8	316.3	331.1	333.3
	0.09	230.9	227.0	224.0	230.7	228.8	258.6	241.1	246.4	251.3	299.6	268.3	307.5
	0.18	160.3	187.6	185.1	196.7	205.0	209.6	209.8	234.7	234.8	249.2	249.1	241.0
	0.27	209.8	382.4	199.2	177.2	179.3	181.3	184.8	198.5	205.1	207.3	208.3	209.5
	0.36	131.0	126.3	130.7	137.1	141.5	144.8	156.3	160.1	165.0	166.1	170.1	179.0
	0.45	156.3	154.6	162.1	163.7	162.5	167.0	167.0	170.4	173.4	175.3	171.6	174.6
n	0.03	0.798	0.797	0.800	0.791	0.781	0.786	0.784	0.781	0.785	0.784	0.781	0.783
	0.09	0.793	0.794	0.798	0.798	0.803	0.793	0.804	0.804	0.803	0.787	0.804	0.792
	0.18	0.803	0.788	0.792	0.789	0.786	0.784	0.786	0.776	0.777	0.774	0.777	0.782
	0.27	0.781	0.755	0.789	0.808	0.807	0.807	0.806	0.800	0.799	0.799	0.799	0.799
	0.36	0.834	0.838	0.836	0.832	0.829	0.827	0.819	0.817	0.814	0.813	0.812	0.808
	0.45	0.803	0.805	0.801	0.802	0.804	0.800	0.801	0.798	0.798	0.798	0.802	0.800
R_{ct} Ωcm²	Blank	10.5	12.0	13.1	13.4	13.4	13.5	13.3	13.5	13.5	13.6	13.6	13.4
	0.03	87.0	107.9	104.8	99.7	101.0	96.7	90.7	83.0	78.6	70.1	65.8	60.2
	0.09	84.0	92.8	87.6	80.6	72.6	67.1	61.9	58.1	52.7	50.4	46.9	43.7
	0.18	103.3	125.1	127.5	123.5	112.7	109.4	102.5	93.5	86.0	81.7	76.2	70.2
	0.27	102.9	126.0	130.0	132.8	131.3	130.3	121.1	119.8	114.6	105.9	97.9	92.5
	0.36	123.7	168.4	176.0	182.8	184.2	186.6	184.6	176.6	168.4	159.4	149.5	137.0
	0.45	153.5	172.5	177.1	171.7	167.6	159.9	153.5	146.1	137.7	134.2	132.3	132.3
IE_{Rct} (%)	0.03	87.9	88.9	87.5	86.5	86.7	86.0	85.3	83.7	82.8	80.6	79.3	77.7
	0.09	87.5	87.1	85.0	83.3	81.5	79.9	78.5	76.7	74.4	73.0	71.0	69.3
	0.18	89.8	90.4	89.7	89.1	88.1	87.7	87.0	85.5	84.3	83.3	82.2	80.9
	0.27	89.8	90.5	89.9	89.9	89.8	89.6	89.0	88.7	88.2	87.1	86.1	85.5
	0.36	91.5	92.9	92.6	92.7	92.7	92.8	92.8	92.3	92.0	91.5	90.9	90.2
	0.45	93.2	93.0	92.6	92.2	92.0	91.6	91.3	90.8	90.2	89.9	89.7	89.9
	Blank	8.18	4.15	5.38	8.13	9.04	11.0	12.3	19.1	16.9	14.3	13.4	16.4
C_{dl} *10³ μFcm⁻²	0.03	3.43	12.70	3.01	1.93	2.00	2.02	2.06	2.48	2.59	2.56	2.53	2.50
	0.09	0.90	0.86	0.93	1.06	1.15	1.22	1.51	1.59	1.72	1.72	1.77	1.97
	0.18	1.84	1.83	2.08	2.05	1.96	2.12	2.09	2.19	2.21	2.24	2.05	2.17
	0.27	4.27	3.83	3.36	4.27	5.60	4.86	5.18	5.41	5.08	4.99	5.49	5.23
	0.36	3.06	3.00	2.73	2.77	2.50	3.30	2.51	2.55	2.58	4.04	2.68	3.71
	0.45	1.74	2.82	2.61	2.93	3.18	3.34	3.19	4.20	4.03	4.51	4.24	3.62