Supporting information

Photovoltaic Characteristics and Stability of Flexible Dye-Sensitized Solar Cells on ITO/PEN Substrates

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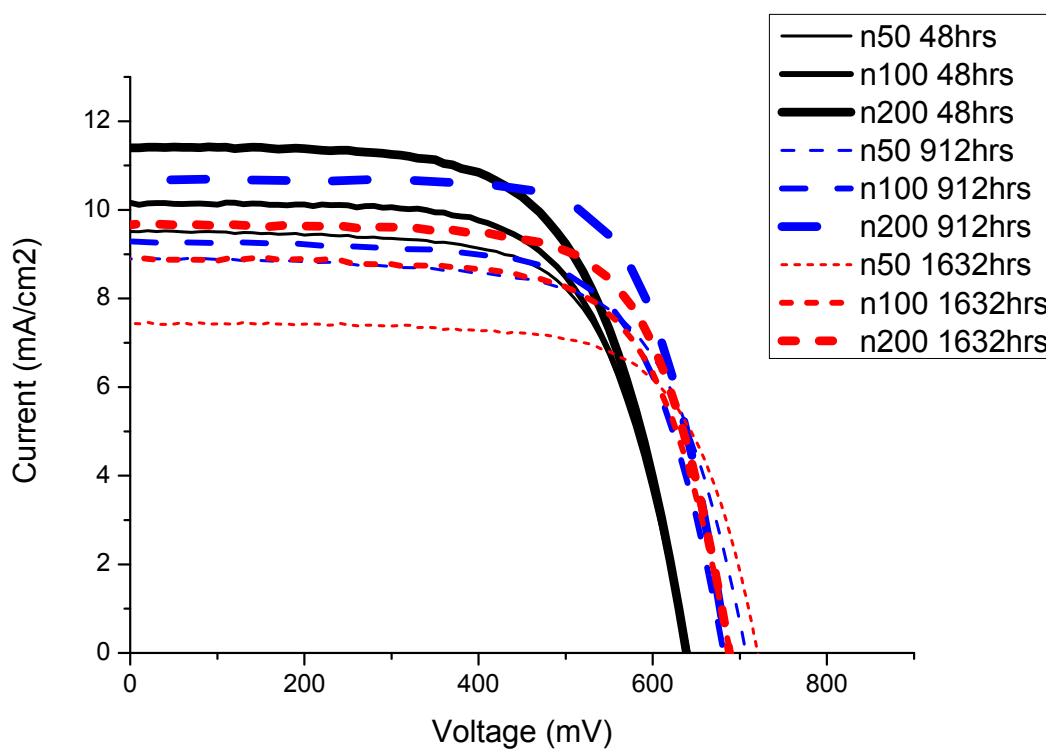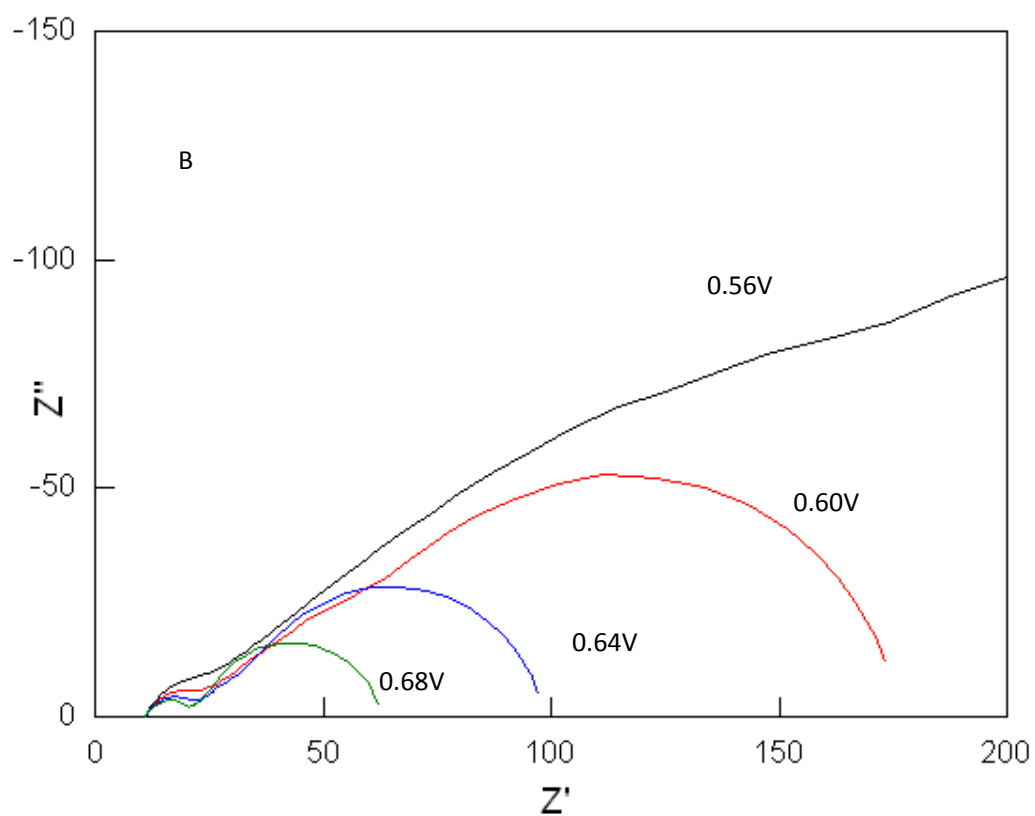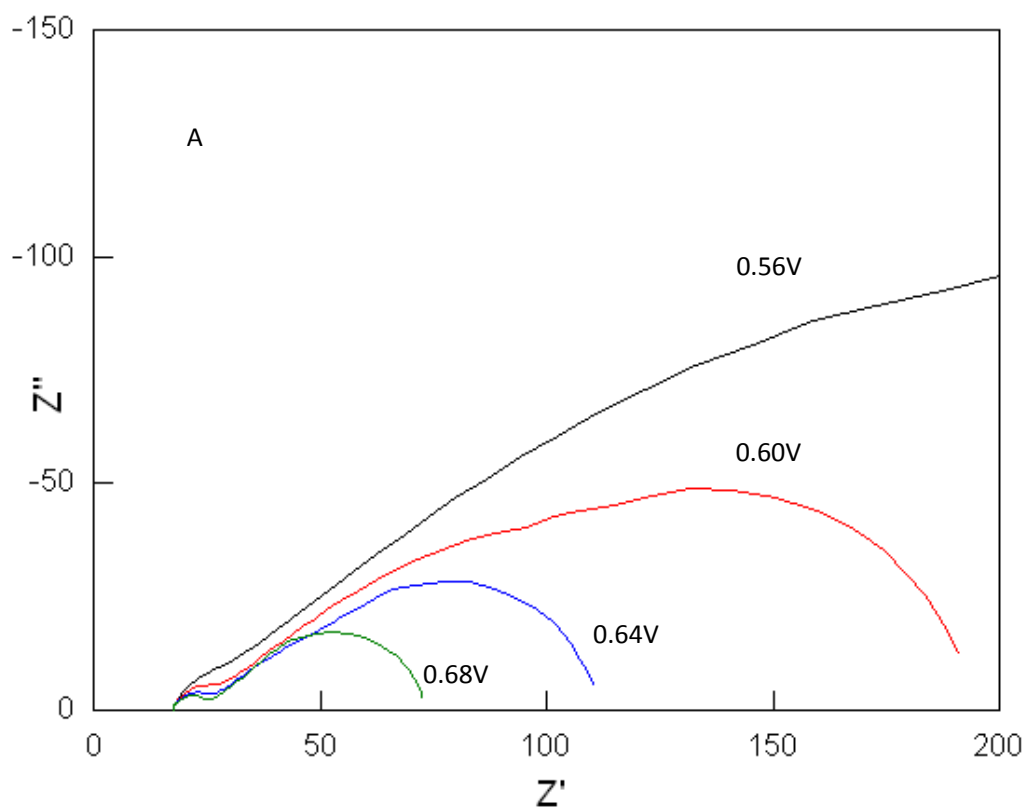
1. I-V curves of the DSSCs

Figure S1 I-V curves for samples n50, n100 and n200 at different aging times
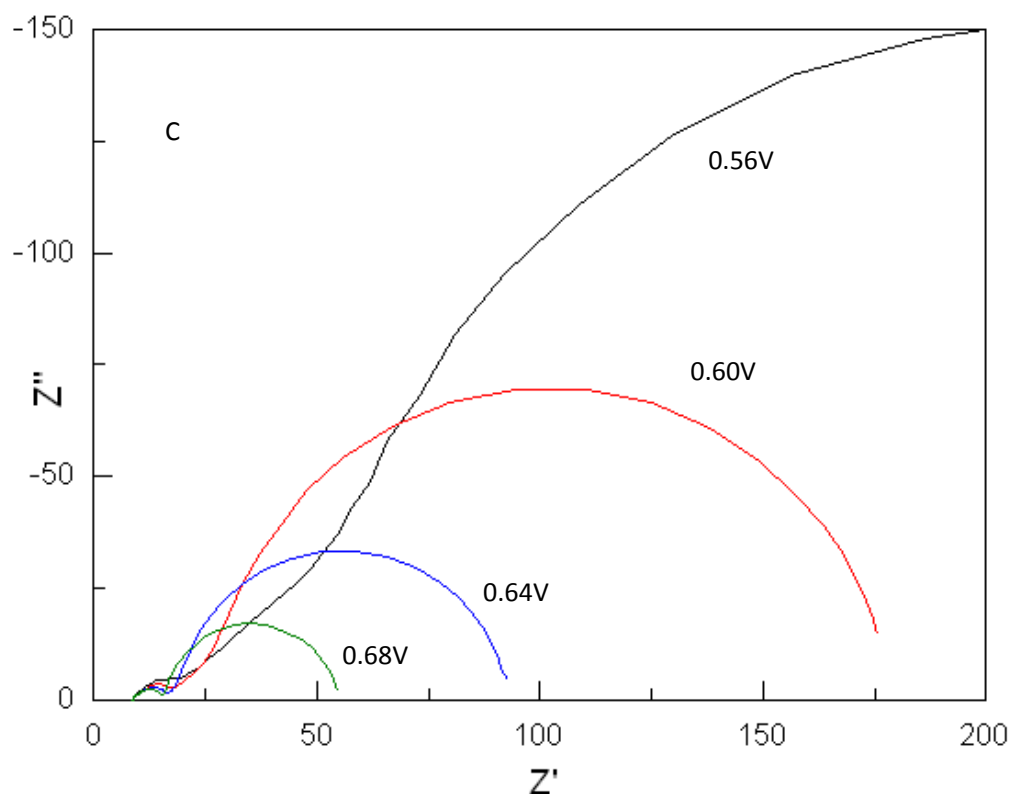
2. EIS of the DSSCs

Figure S2 EIS spectra obtained for samples (A) n50, (B) n100 and (C) n200 at the aging time of 48 hours at different bias potentials (0.56V, 0.60V, 0.64V and 0.68V)

Table S1 EIS fitting results for samples n50, n100 and n200 at the aging time of 48 hours

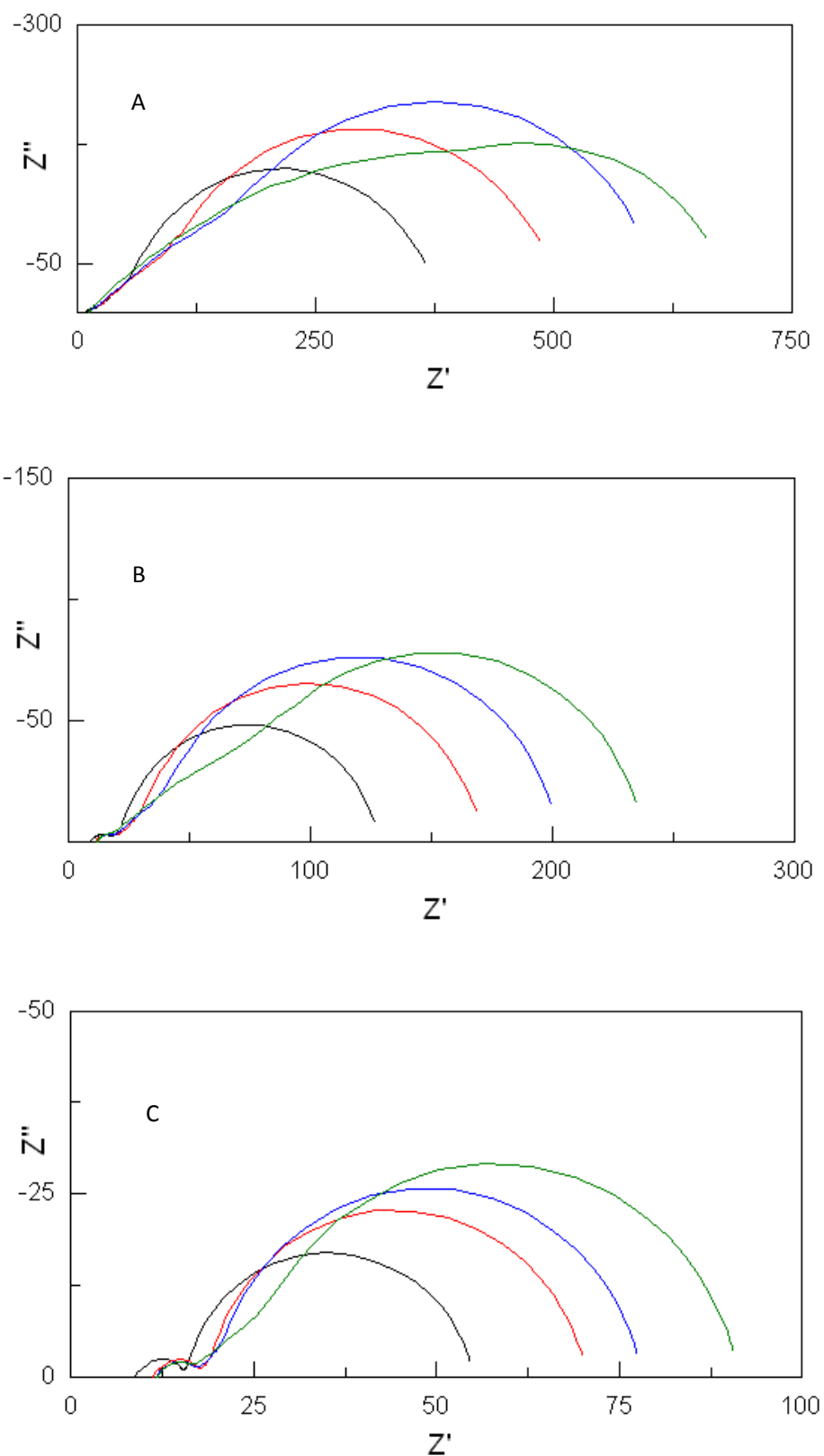| Sample n50				
Bias potential (V)	C_μ (F)	R_t (Ω)	R_{ct} (Ω)	Ln/L
0.56	0.001196	654.3	187.1	0.53
0.60	0.002026	243.9	107	0.66
0.64	0.002251	78.99	65.99	0.91
0.68	0.00266	29.25	40.87	1.18
Sample n100				
Bias potential (V)	C_μ (F)	R_t (Ω)	R_{ct} (Ω)	Ln/L
0.56	0.001315	464.2	220.7	0.68
0.60	0.001496	125.9	122.6	0.98
0.64	0.001811	43.14	65.41	1.23
0.68	0.002376	15.96	37.89	1.54
Sample n200				
Bias potential (V)	C_μ (F)	R_t (Ω)	R_{ct} (Ω)	Ln/L
0.56	0.00079	113.2	324.8	1.69
0.60	0.001035	32.23	155.4	2.19
0.64	0.001407	10.94	74.44	2.60
0.68	0.002008	4.844	38.62	2.82

Figure S3 EIS spectra of sample n200, measured in the dark at the bias potentials (A) 0.56V; (B) 0.62V; (C) 0.68V, and different aging times (black line) 48 hours; (red line) 168 hours; (blue line) 408 hours; (green line) 912 hours respectively.

Table S2 EIS fitting results for sample n200 at the same bias potential but different aging times

Sample n200, measured at bias potential 0.56V				
Aging time	C_μ (F)	Rt (Ω)	Rct (Ω)	Ln/L
After 48 hours	0.000789	113.2	324.8	1.69
After 168 hours	0.000733	238	411.4	1.31
After 408 hours	0.000761	427.8	479.9	1.06
After 912 hours	0.000748	1017	374.5	0.61
Sample n200, measured at bias potential 0.62V				
Aging time	C_μ (F)	Rt (Ω)	Rct (Ω)	Ln/L
After 48 hours	0.001192	18.46	106.4	2.40
After 168 hours	0.00101	36.17	141.2	1.98
After 408 hours	0.000924	65.11	164.2	1.59
After 912 hours	0.001024	173.6	174.5	1.00
Sample n200, measured at bias potential 0.68V				
Aging time	C_μ (F)	Rt (Ω)	Rct (Ω)	Ln/L
After 48 hours	0.002008	4.844	38.62	2.82
After 168 hours	0.001656	7.509	51.24	2.61
After 408 hours	0.001425	12.15	57.81	2.18
After 912 hours	0.001217	32	64.93	1.42