Energy enhancement of quasi-solid-state supercapacitor based on non-aqueous gel polymer electrolyte via synergistic effect of dual redox-additives diphenyl amine and KI

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Supporting Information

Table-S1: Fitted parameters of capacitor cells (Cell#1 to Cell#4) by equivalent circuits

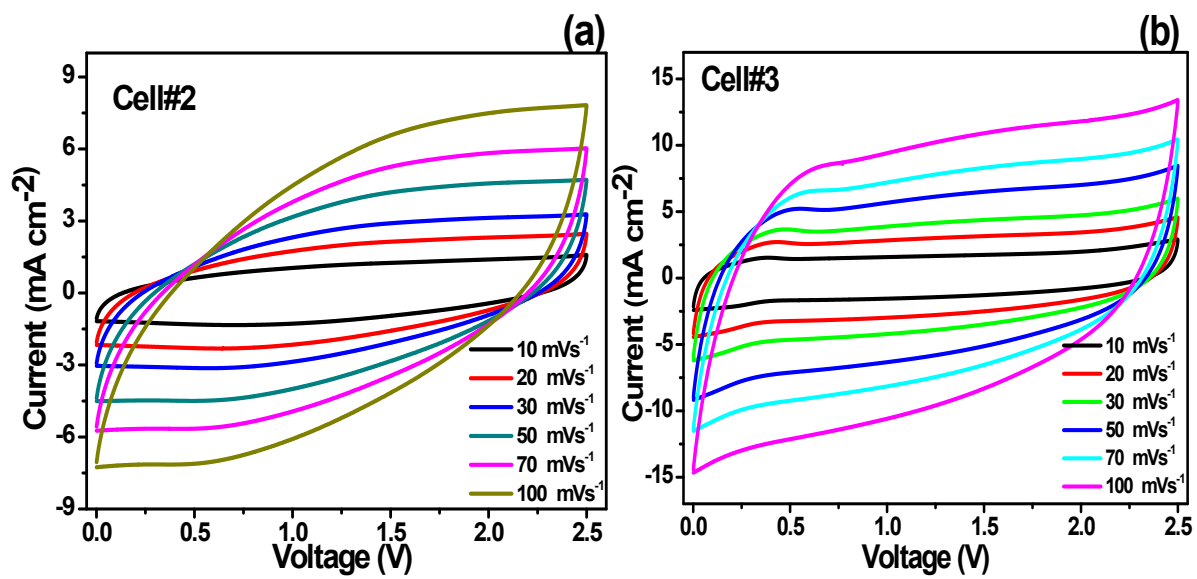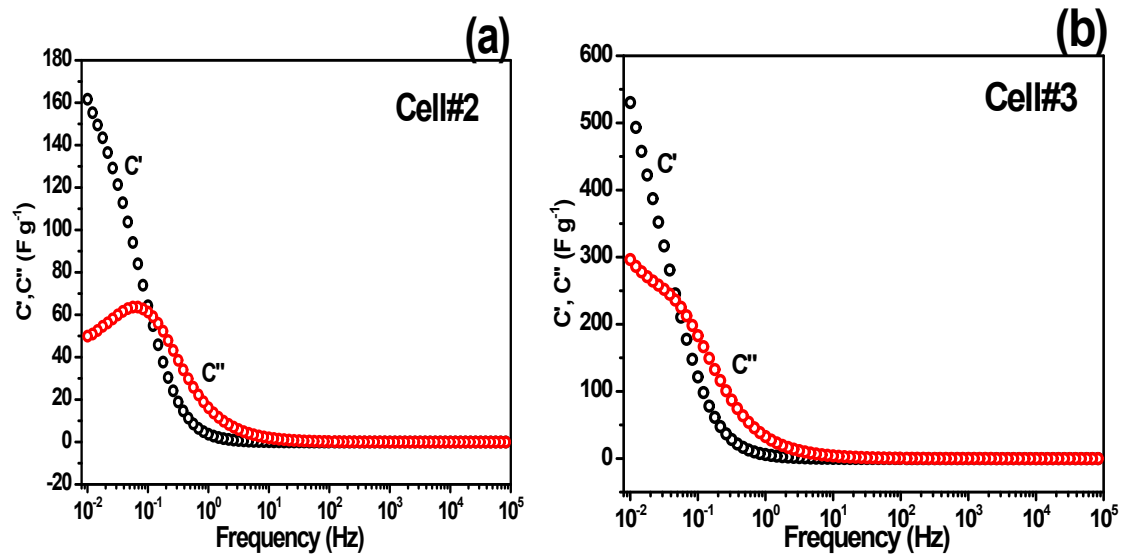| Capacitor Cells	R_1 (Ω cm^2)	R_2 (Ω cm^2)	CPE Q (Ω cm^2), n	W (Ω s^{-1} cm^{-2})	W_{o1} W_{or1} (Ω s$^{0.5}$ cm$^{-0.5}$), W_{oc1} (Ω s$^{-0.5}$ cm$^{-0.5}$)
Cell#1	18.16	2.99	1.70×10^{-4}, 0.73	32.45	2.16, 0.15
Cell#2	7.79	16.31	4.64×10^{-4}, 0.34	15.49	----
Cell#3	10.18	1.60	4.10×10^{-4}, 0.97	-----	7.7, 0.12
Cell#4	14.81	21.88	4.15×10^{-6}, 0.82	----	----

Fig. S1. (a and b) CV curves of capacitor cells (Cell#2 and Cell#3) at different scan rates.

Fig. S2: C' and C'' versus frequency plots for cells containing redox-active GPEs (a) PVdF-HFP/IL/DPA, and (b) PVdF-HFP/IL/KI.
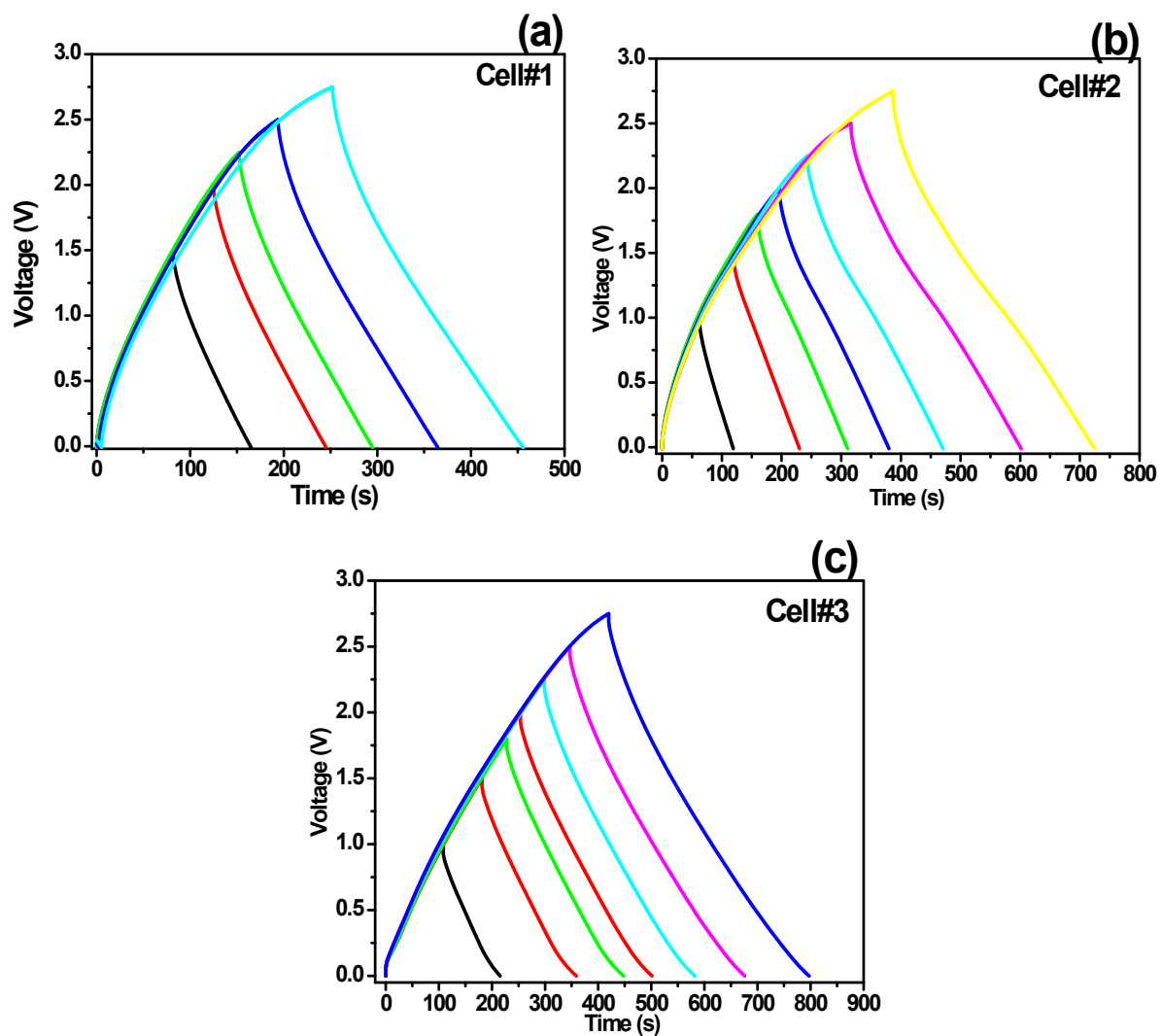
Fig. S3. (a-c) GCD curves for capacitor cells (Cell#1 to Cell#3), recorded at different voltage ranges
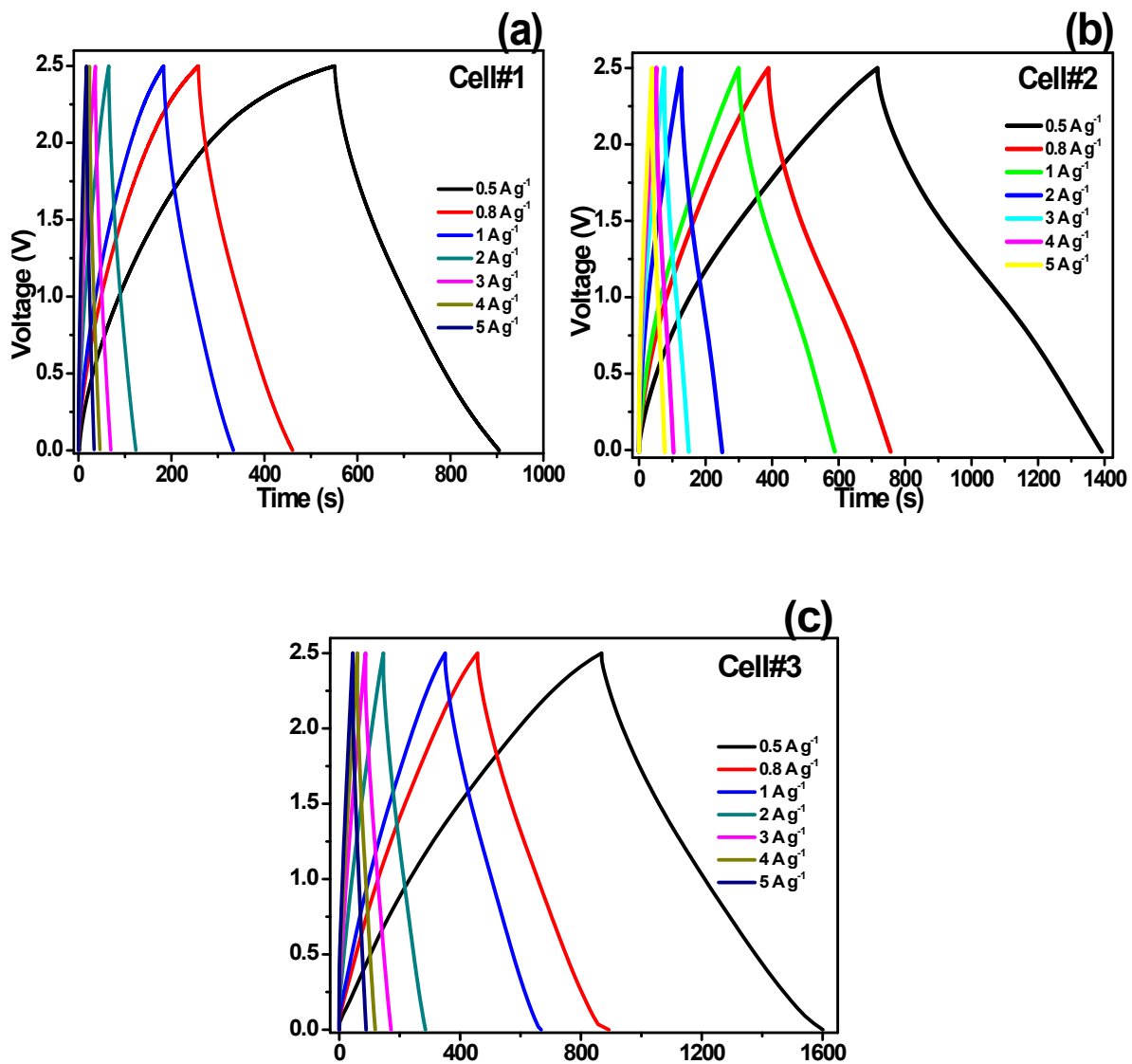
Fig. S4. (a-c) GCD curves for capacitor cells (Cell#1 to Cell#3), recorded at different current densities.