Supporting Information

Rational Design of Polyaniline/MnO_2/Carbon Cloth Ternary Hybrids as Electrodes for Supercapacitors

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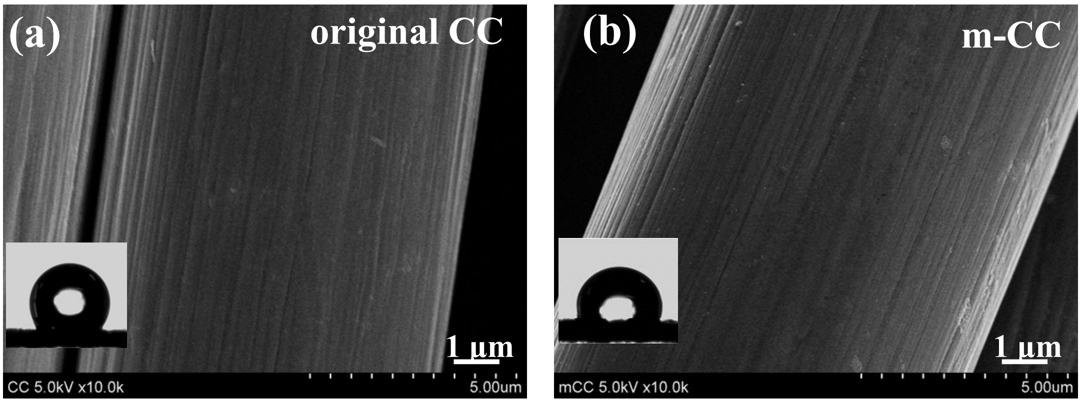

Figure S1. SEM images of original CC and m-CC and their hydrophilic tests (inset shows the contact angle).

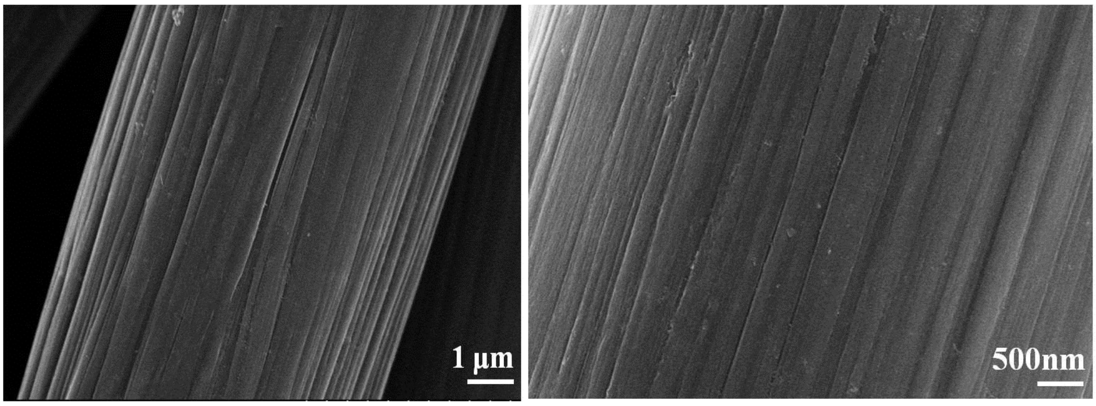

Figure S2. SEM images of m-CC after being etched in 1 M H_2SO_4.

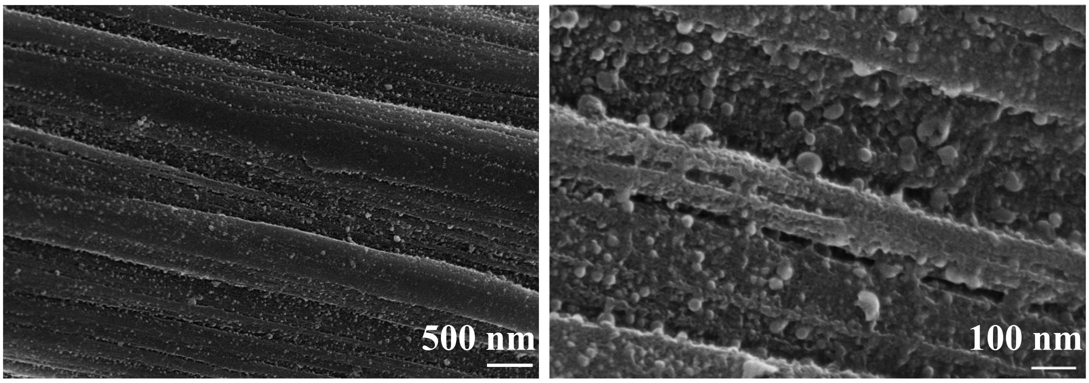

Figure S3. SEM images of MnO_2@m-CC after being etched by 1 M H_2SO_4.

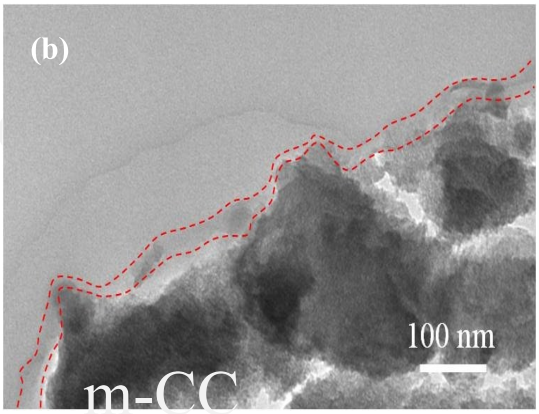

Figure S4. TEM images of (a) MnO_2@PANI@m-CC and (b) PANI@MnO_2@m-CC

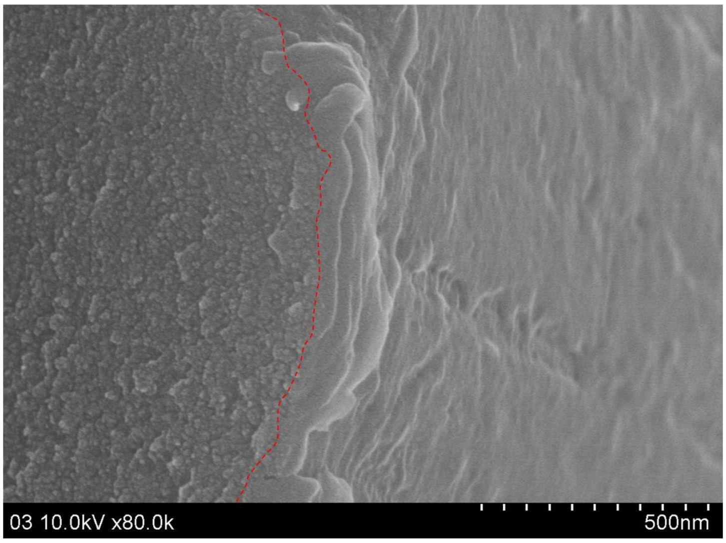

Figure S5. SEM image of the cross-section part of PANI@MnO_2@m-CC

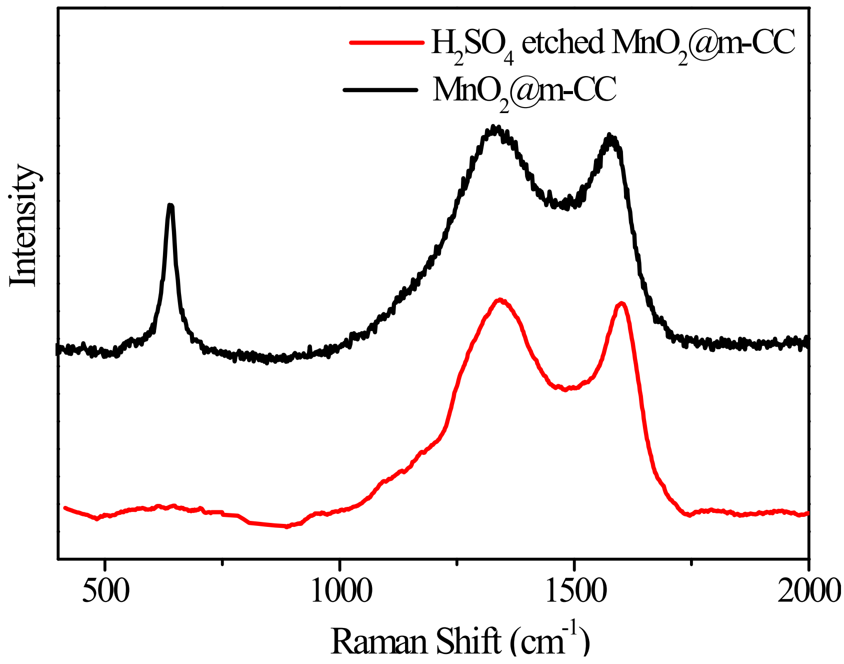

Figure S6. Raman spectra of H_2SO_4 etched MnO_2@m-CC and original MnO_2@m-CC

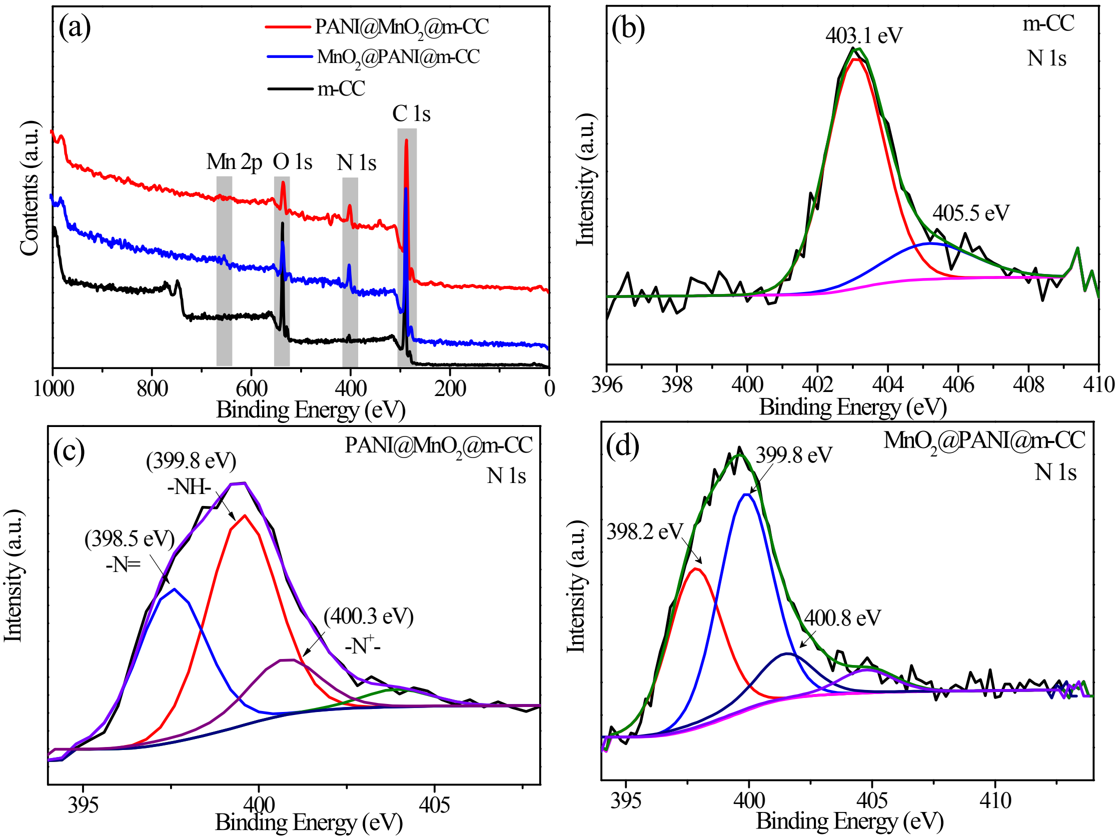

Figure S7. (a) Survey XPS spectrum of m-CC, PANI@MnO_2@m-CC, MnO_2@PANI@m-CC and N 1s spectra of (b) m-CC, (c) PANI@MnO_2@m-CC and (d) MnO_2@PANI@m-CC

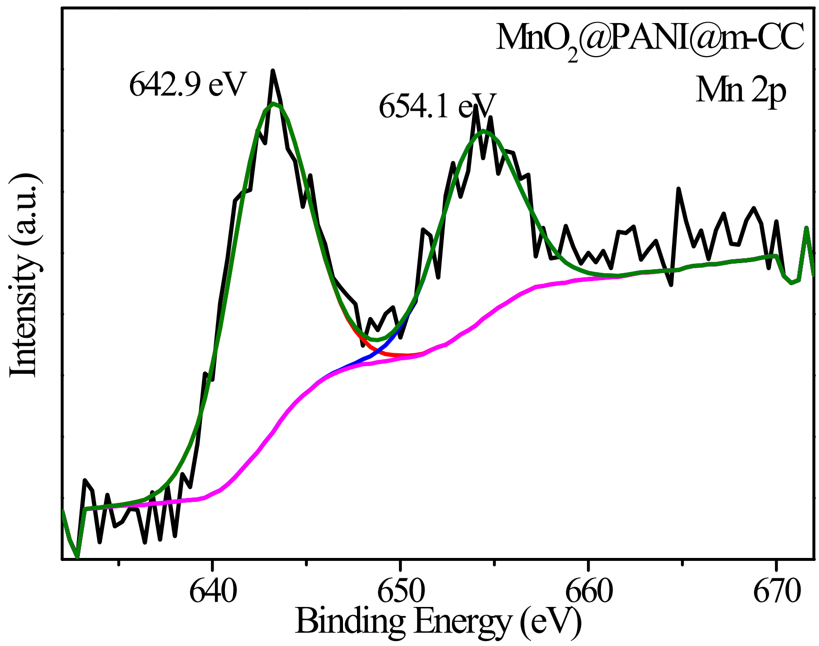

Figure S8. Mn 2p spectra for MnO2@PANI@m-CC

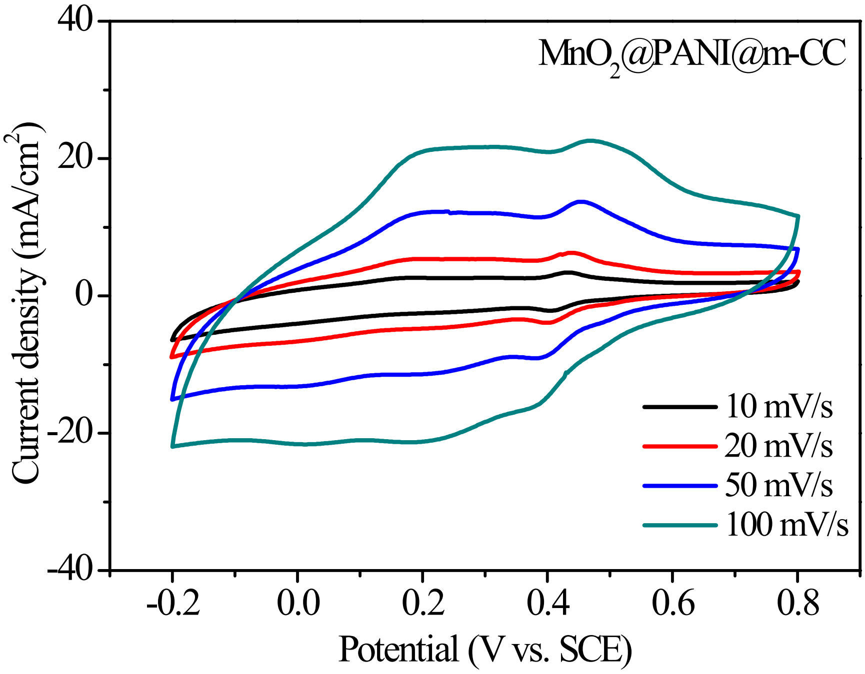

Figure S9. CV curves of MnO_2@PANI@ m-CC at various scan rates.

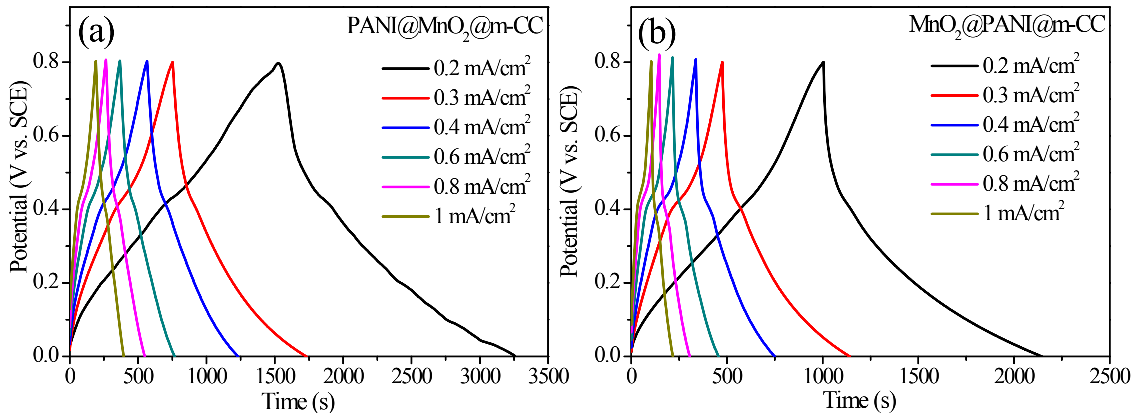

Figure S10. Galvanostatic charge/discharge curves of (a) PANI@MnO_2@m-CC and (b) MnO_2@PANI@ m-CC at different current densities

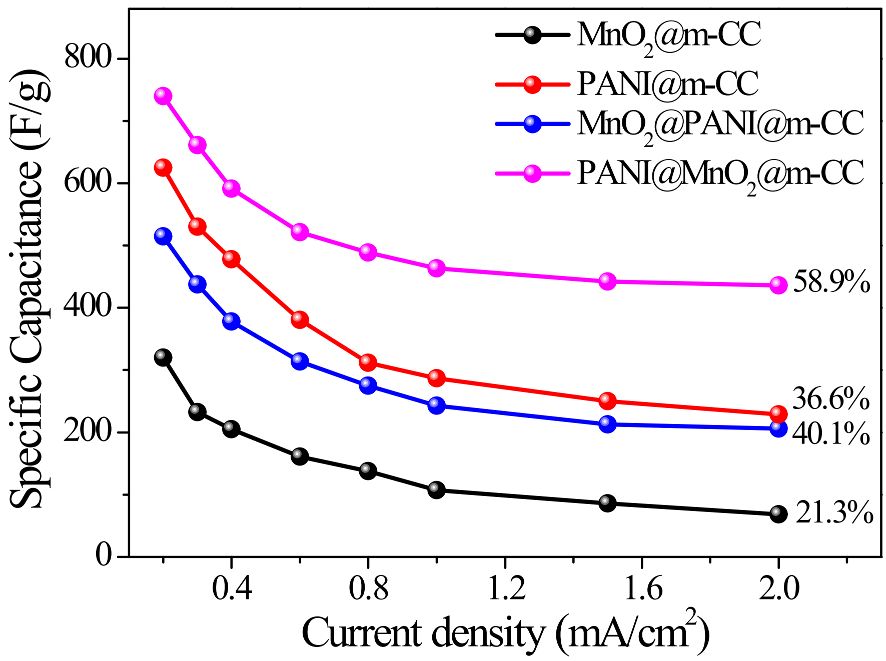

Figure S11. Gravimetric specific capacitance *vs*. current densities of as-prepared samples.

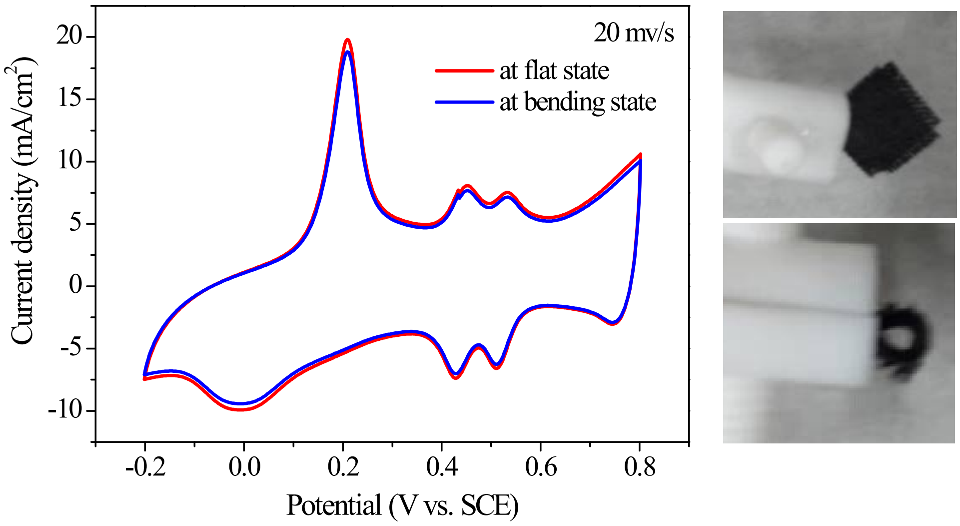

Figure S12. CV curves at 20 mV/s of PANI@MnO_2@m-CC electrode at flat and bending state

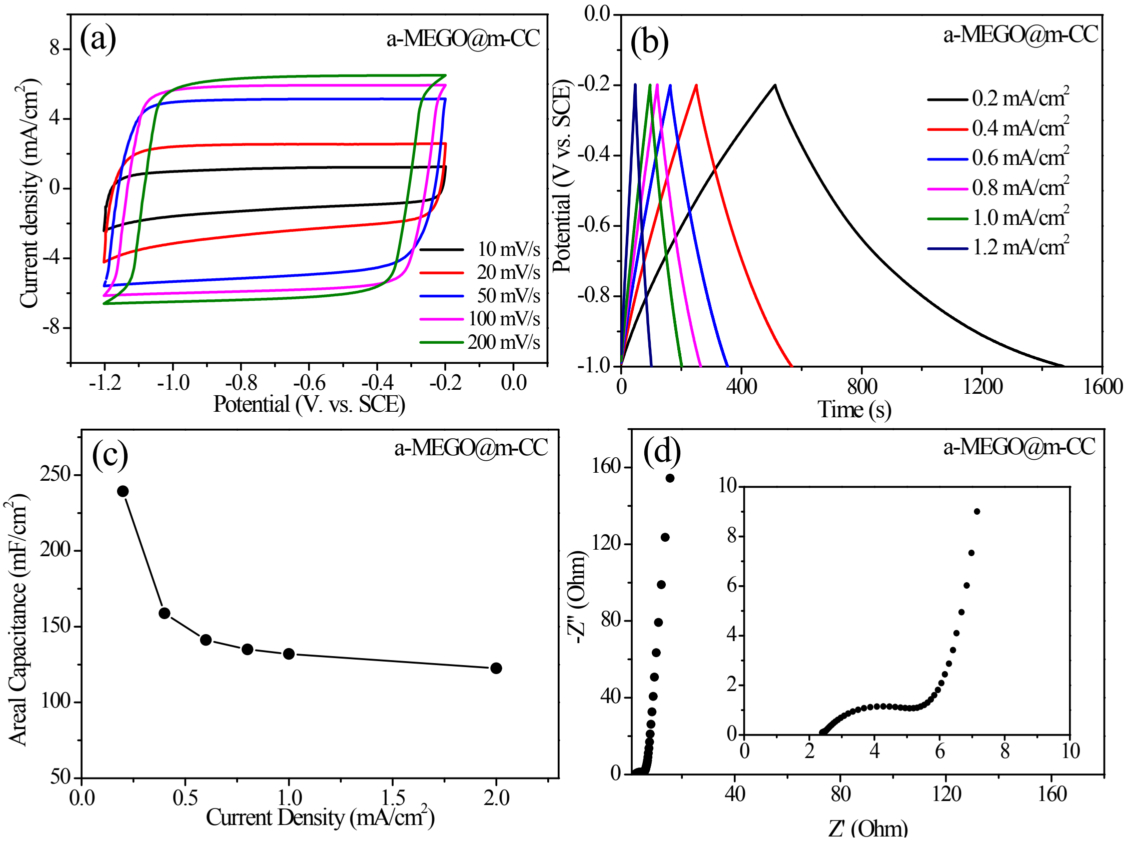

Figure S13. Three-electrode electrochemical measurements of a-MEGO@m-CC: (a) CV curves at various scan rates, (b)Galvanostatic charge/discharge curves at different current densities, (c) plot of areal capacitance vs. current density and (d) Nyquist plot from EIS measurement.

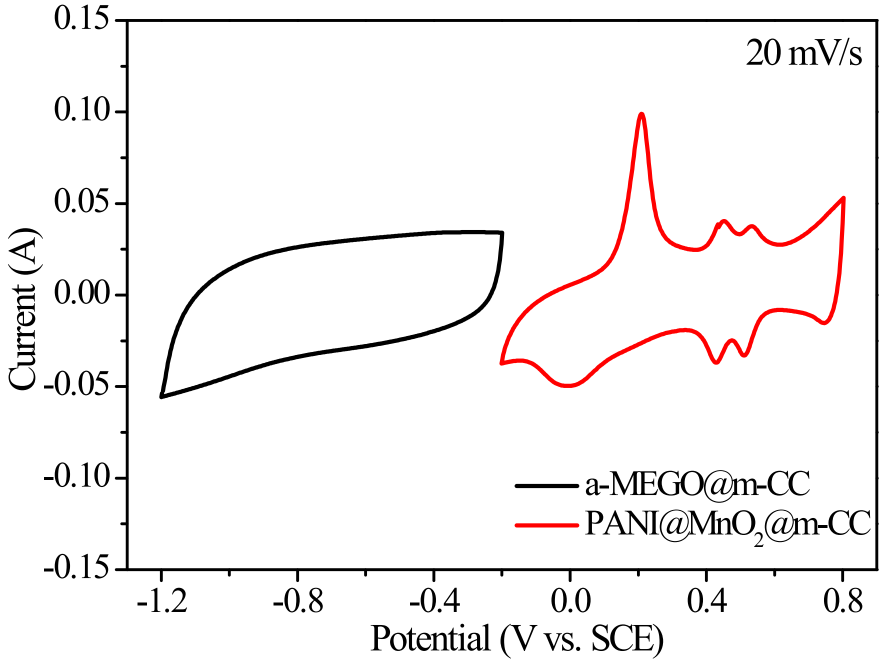

Figure S14. Comparison of the CV curves of a-MEGO@m-CC and PANI@MnO_2@m-CC at different potential window in three electrode systems.

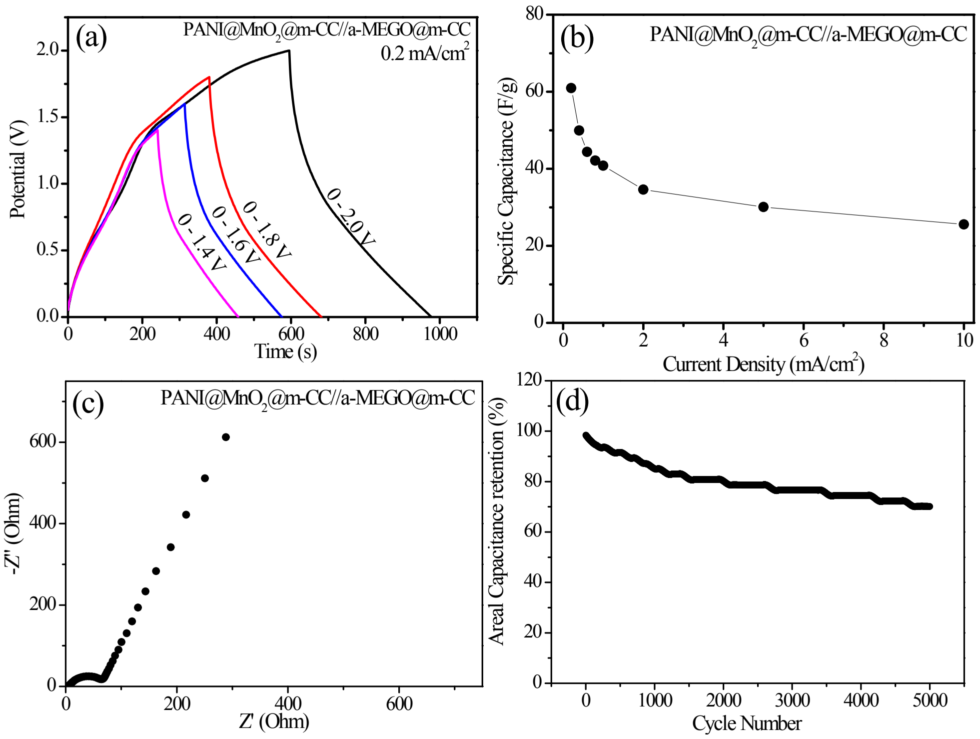

Figure S15. (a) Galvonostatic charge/discharge curves at a current density of 0.2 mA/cm2 with different potential windows, (b) polts of gravimetric specific capacitance vs. current density, (c) Nyquist plots and (d) cycling stability curves of assembled PANI@MnO_2@m-CC//a-MEGO@m-CC ASC device.

Table S1. The total mass of each samples obtained in our work.

Samples (1×1 cm^2)	Mass (mg)							
m-CC	9.95	9.51	9.48	9.63	9.87	10.02	9.62	9.90
MnO_2@m-CC	10.15	9.73	9.70	9.84	-	-	-	-
PANI@m-CC	-	-	-	-	10.22	10.40	9.98	10.25
PANI@MnO_2@m-CC	10.50	10.11	10.05	10.21	-	-	-	-
MnO_2@PANI@m-CC	-	-	-	-	10.43	10.63	10.20	10.47

Table S2. Calculated areal and gravimetric specific capacitance of a-MEGO@m-CC and PANI@MnO_2@m-CC at different current densities in a three electrode system.

Samples	Capacitance	Current density (mA/cm^2)					
		0.2	0.4	0.6	0.8	1.0	2.0
a-MEGO@m-CC (0.97 mg/cm^2)	C_{areal} (mF/cm^2)	239.3	158.8	141.2	140	132	132.5
	C_m(F/g)	246.6	163.7	145.6	144.4	136.1	136.6
PANI@MnO_2@m-CC (0.57 mg/cm^2)	C_{areal}(mF/cm^2)	421.6	337.1	297	278.6	264.1	251.3
	C_m(F/g)	739.6	591.4	521.1	488.8	463.3	440.9