Supporting Information

Electrodeposited manganese dioxide/activated carbon composite as a high-performance electrode material for capacitive deionization

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Total number of pages: 5 (S1-S5) including 5 figures

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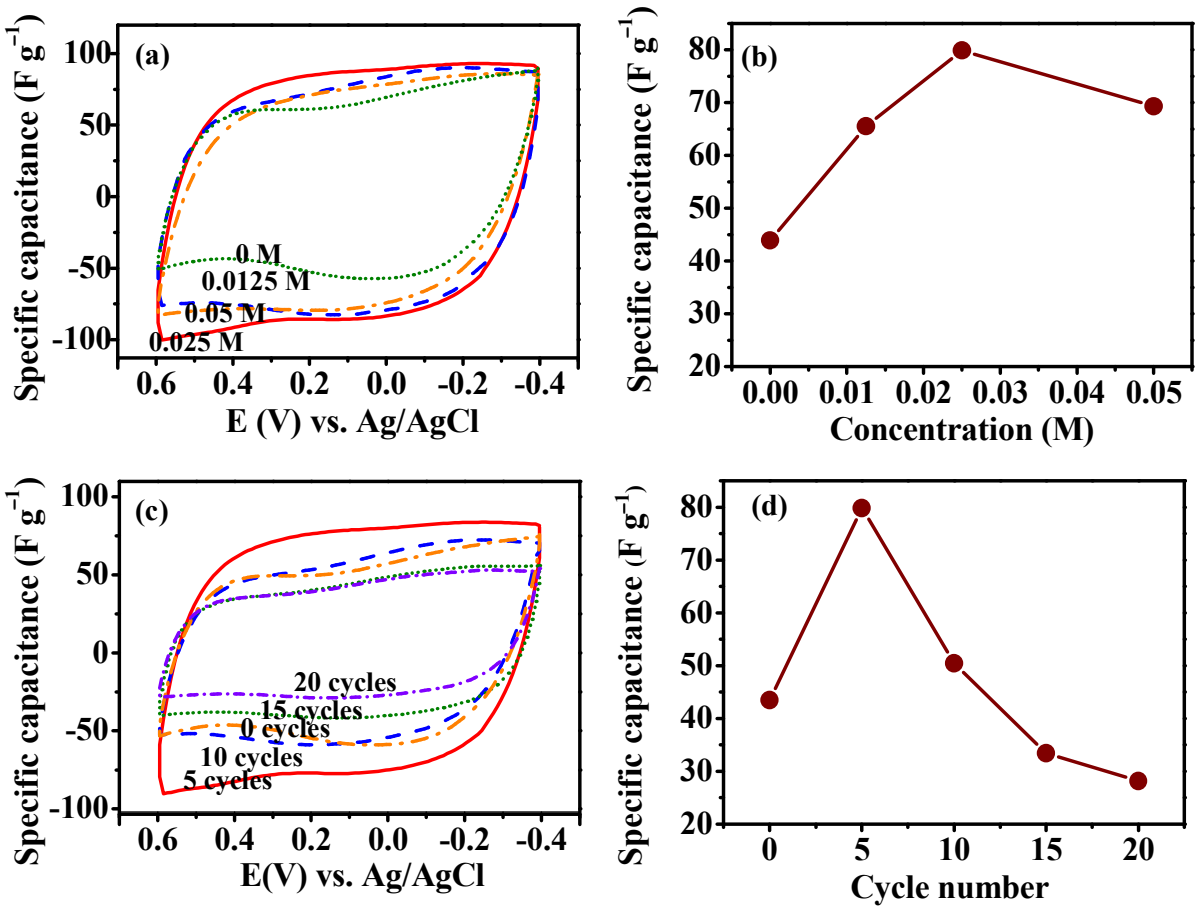

Figure S1. (a) CV curves and (b) specific capacitances of the MnO_2/AC electrodes prepared at different concentrations of $(CH_3COO)_2Mn{\cdot}4H_2O$ using the cyclic voltammetry technique (5 cycles). (c) CV curves and (d) specific capacitance of the MnO_2/AC electrodes prepared in 0.025 M $(CH_3COO)_2Mn{\cdot}4H_2O$ using the cyclic voltammetry technique with different cycle numbers. All CV experiments were performed in 1 M NaCl aqueous solution at a scan rate of 5 mV s^{-1}.

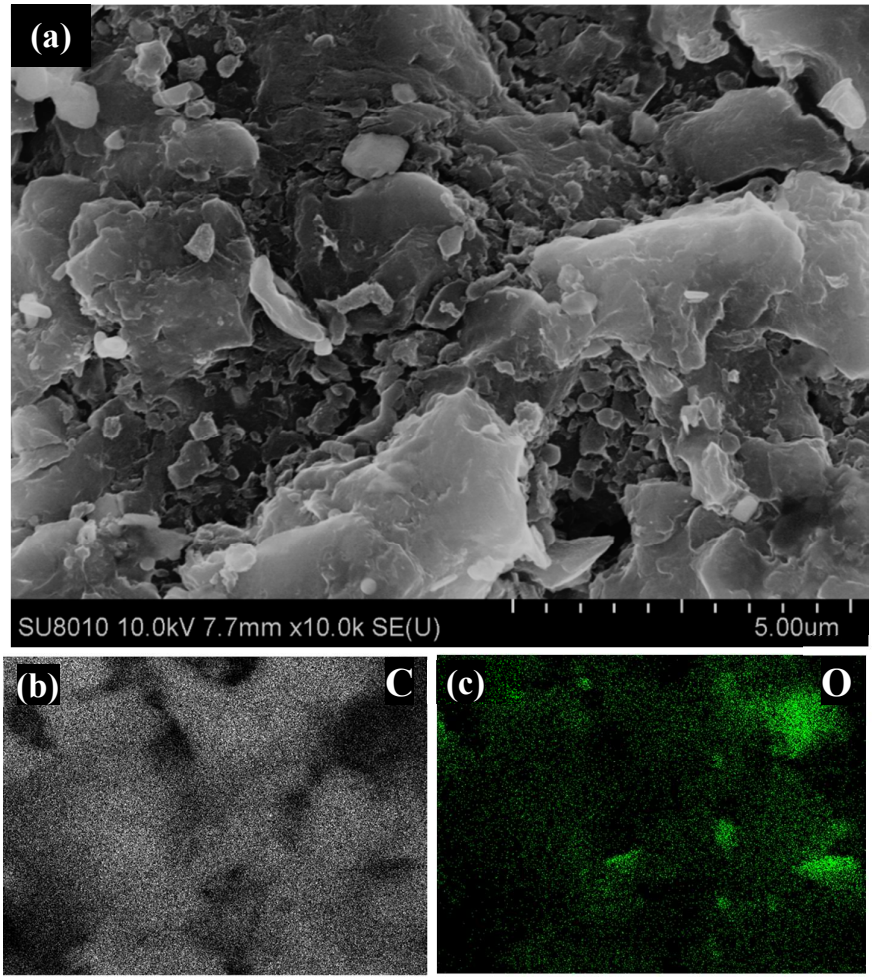

Figure S2. (a) SEM image of the AC material and the corresponding EDX mapping analyses of (b) carbon and (c) oxygen.

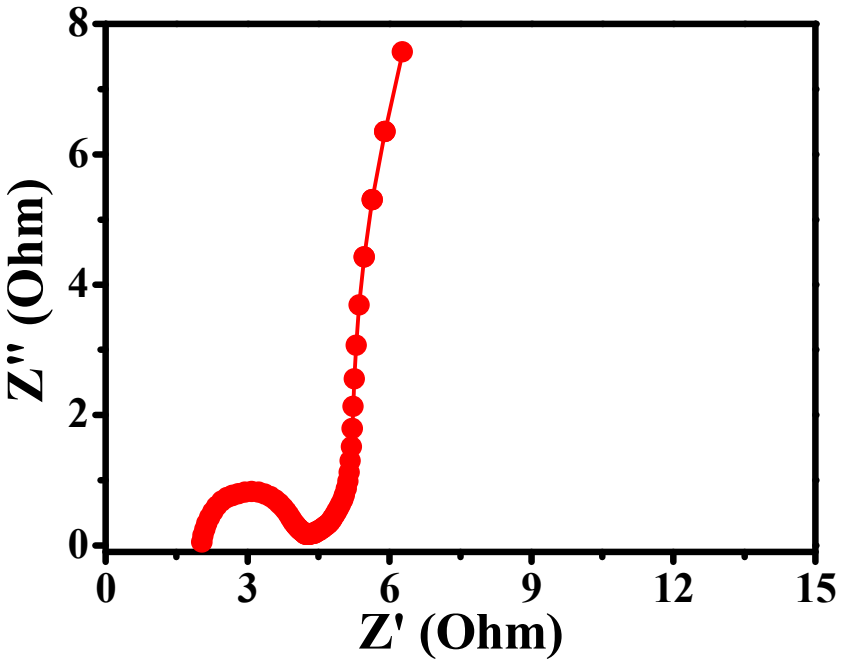

Figure S3. EIS analysis of the MnO_2/AC composite electrode in 1 M NaCl presented as a Nyquist plot.

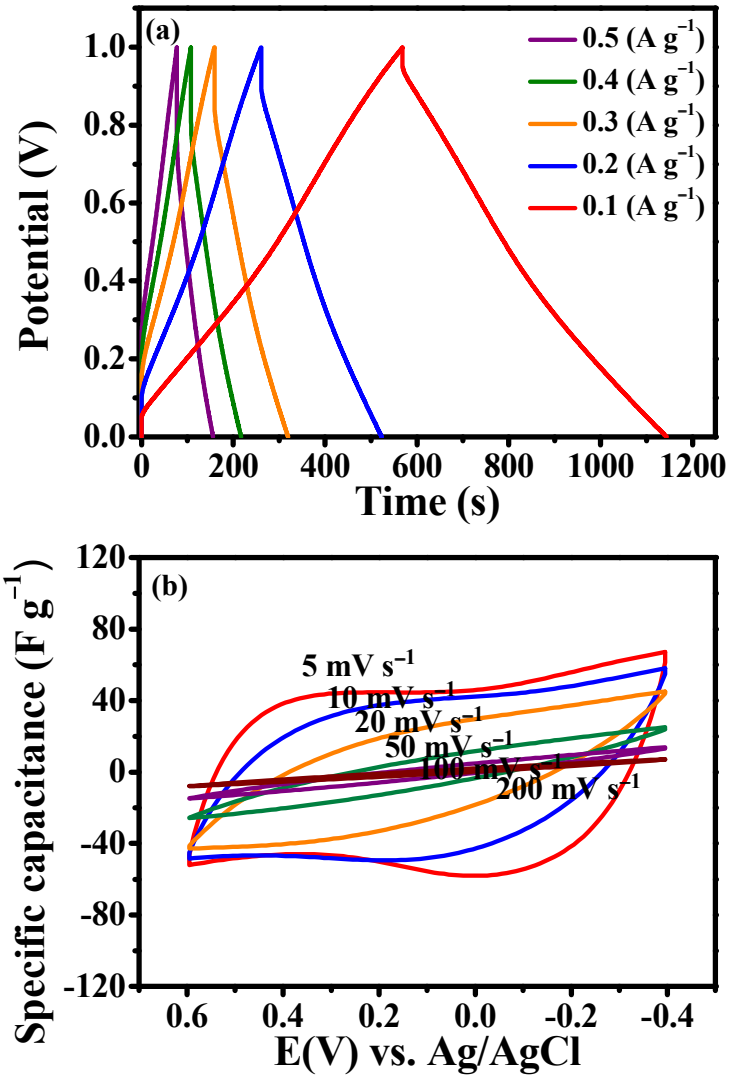

Figure S4. (a) GC and (b) CV curves of the AC electrode in 1 M NaCl at various current densities and scan rates, respectively.

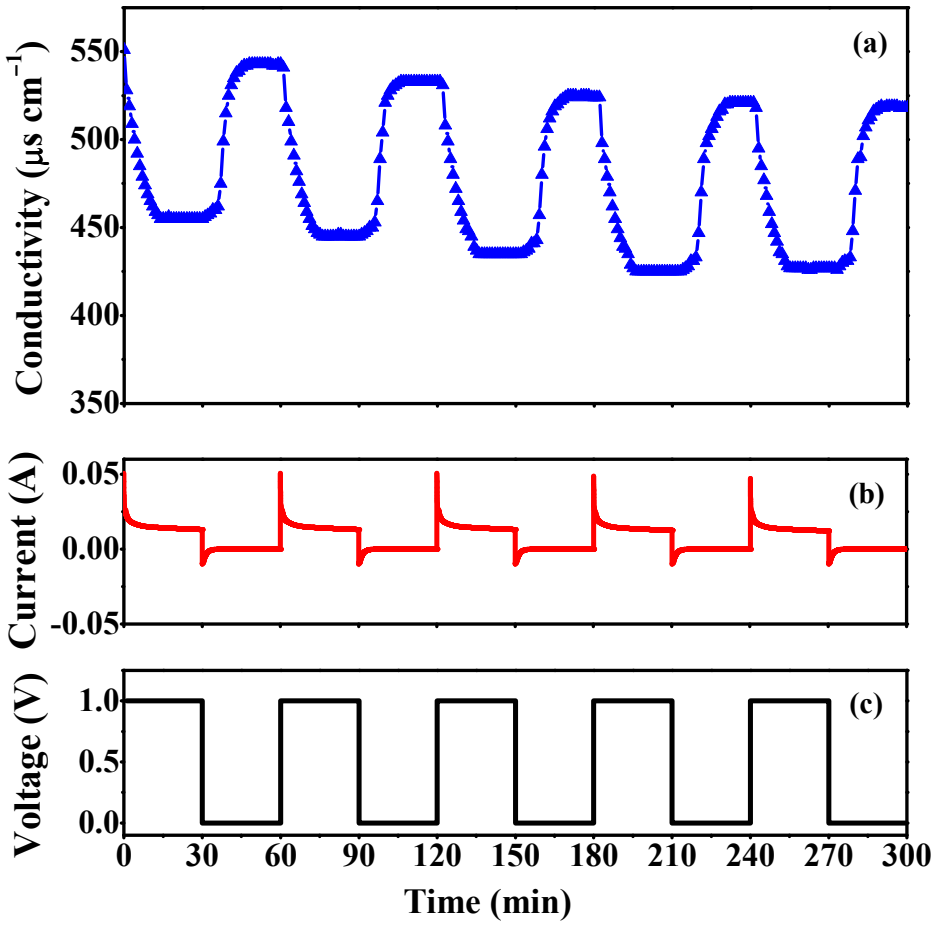

Figure S5. Electrosorption-desorption profile of the AC electrode in 5 mM NaCl (1.0 V for 30 min in the charging step and 0.0 V for 30 min in the discharging step). (a) Changes in solution conductivity, (b) current, and (c) voltage profiles during five-cycle operation.