

Highly Deformation-Tolerant Carbon Nanotube Sponges as Supercapacitor Electrodes

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Supporting Information:

Figure S1, Figure S2, Figure S3, Figure S4, Figure S5, Figure S6.

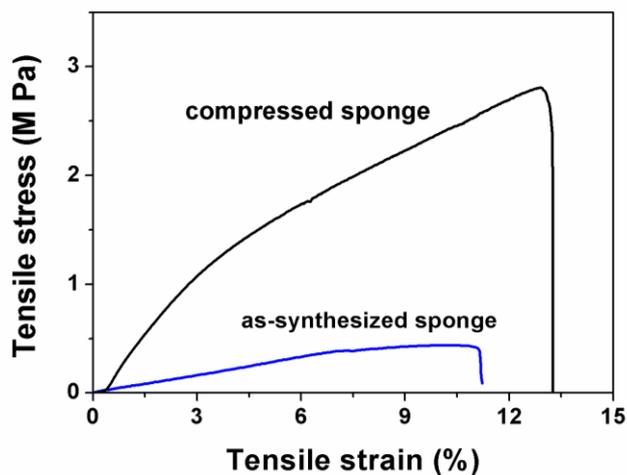


Figure S1. Tensile stress-strain curves of a compressed sponge sheet and an as-synthesized sponge showing a tensile strength of 2.8 MPa and 0.4MPa, respectively. The samples used in the tensile testing were 5 mm in width and 16 mm in gauge length. The thickness was about 2 mm of as-synthesized sponge and about 0.12 mm of compressed sponge.

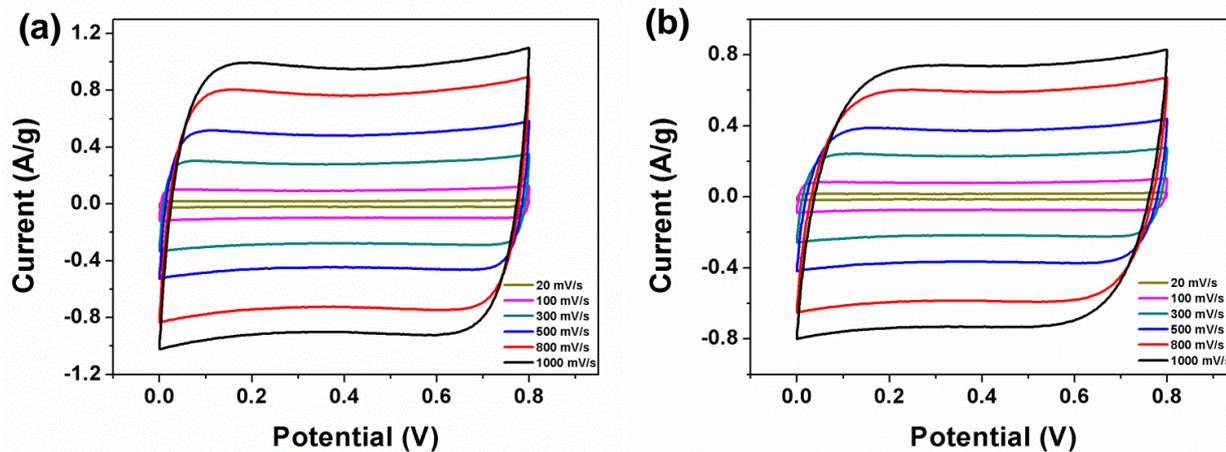


Figure S2. (a) CV curves of the same sponge compressed by 50% ($\epsilon=50\%$). (b) CV curves of the same sponge compressed by 80%.

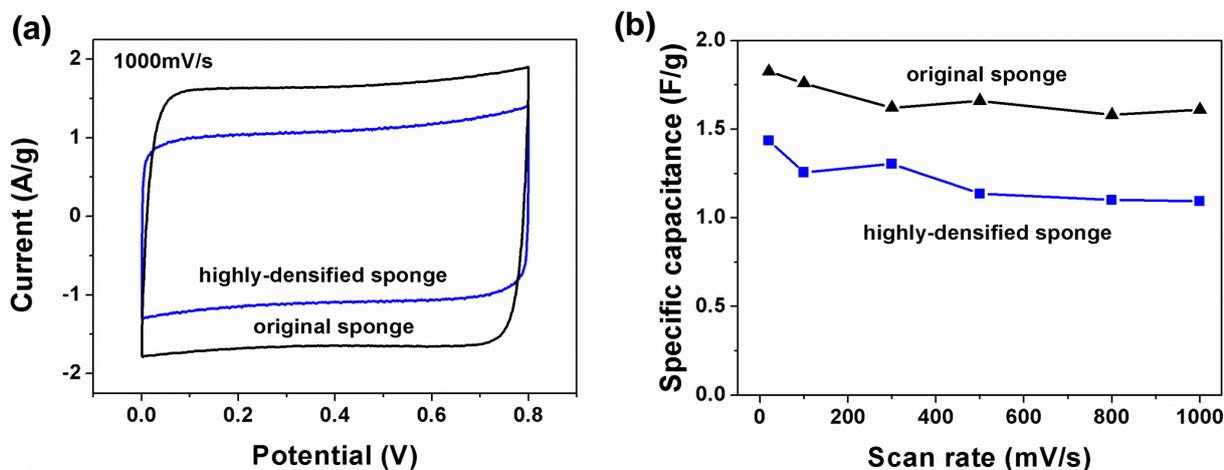


Figure S3. (a) CV curves of the original and highly-densified sponge recorded at 1000 mV/s. (b) Calculated specific capacitances of the two samples at different scan rates. The highly-densified sample was prepared from a sponge in the same size and weight with the original sponge.

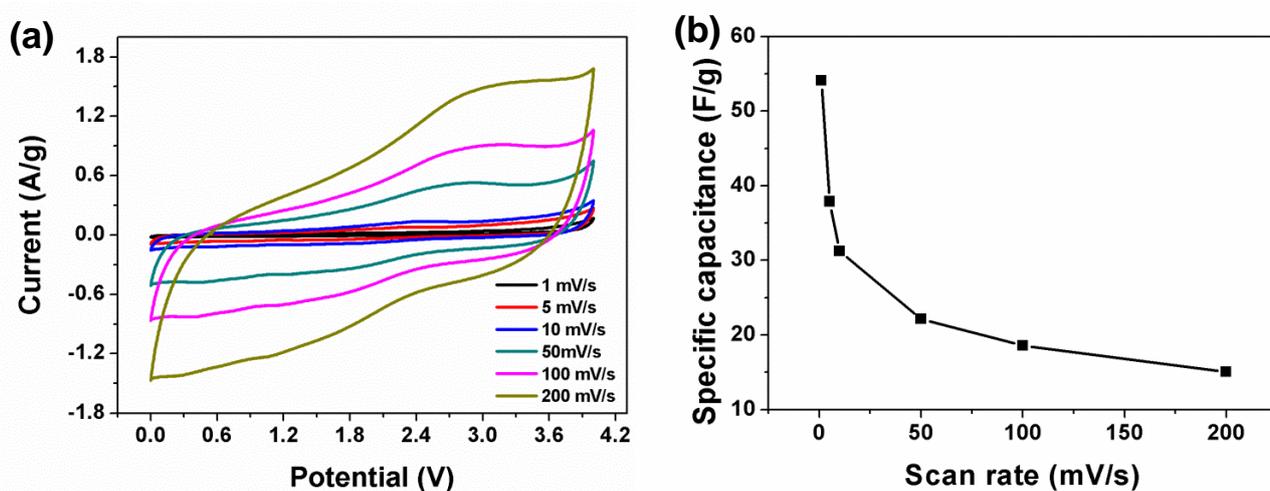


Figure S4. Supercapacitor performance in ionic liquid electrolyte. (a) CV curves of a coin cell assembled from the sponge electrodes, measured at scan rates from 1 to 200 mV/s. (b) Calculated specific capacitance of this cell at different scan rates.

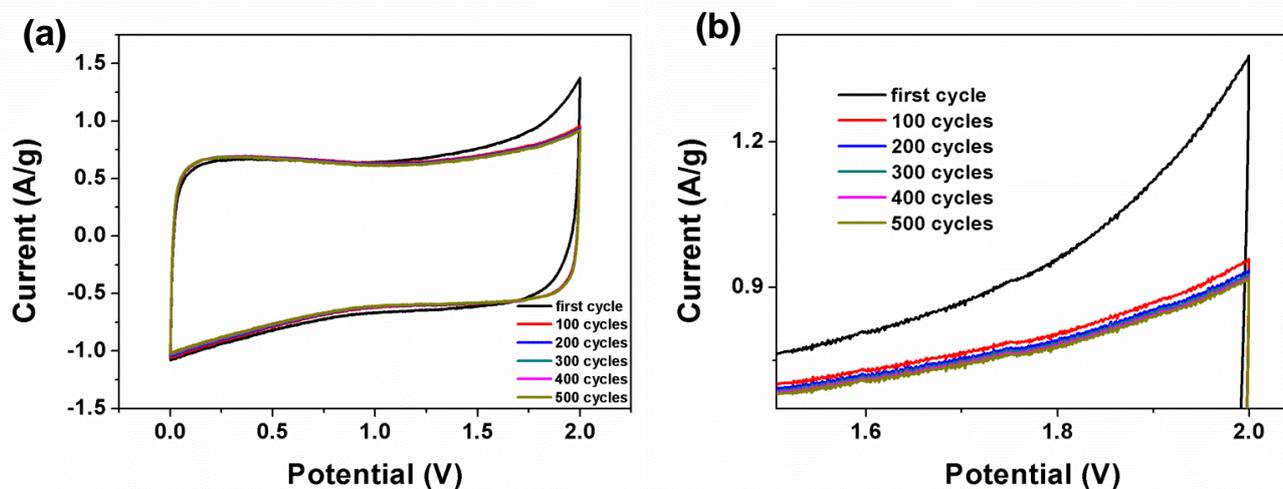


Figure S5. Further examination on CV curves of the beginning 500 cycles. (a) CV curves of a cell with sponge electrodes and organic electrolyte at the first, 100th, 200th, 300th, 400th and 500th cycle recorded at 200 mV/s. (b) Enlarged view showing that the peak portion gradually flattens.

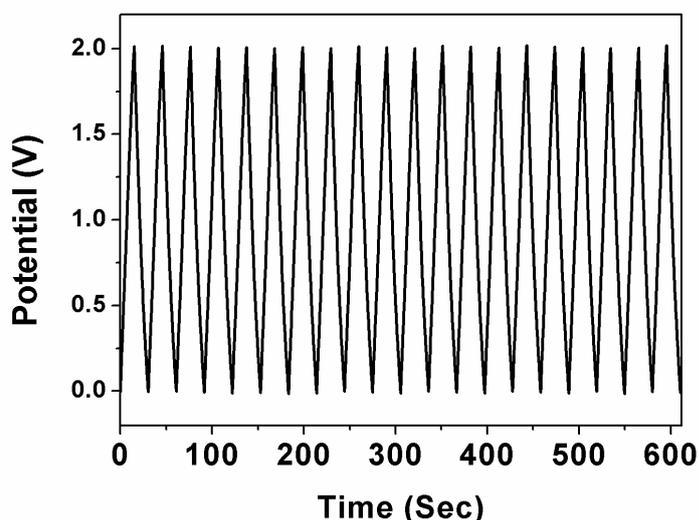


Figure S6. Galvanostatic charge/discharge measurements on a coin cell with organic electrolyte at a constant current of 0.5 A/g.