

Fabrication of 3D macroporous Fe_3O_4 -GO-Ni through ‘nano-reinforced concrete’ method in application of flexible supercapacitors

Supporting information

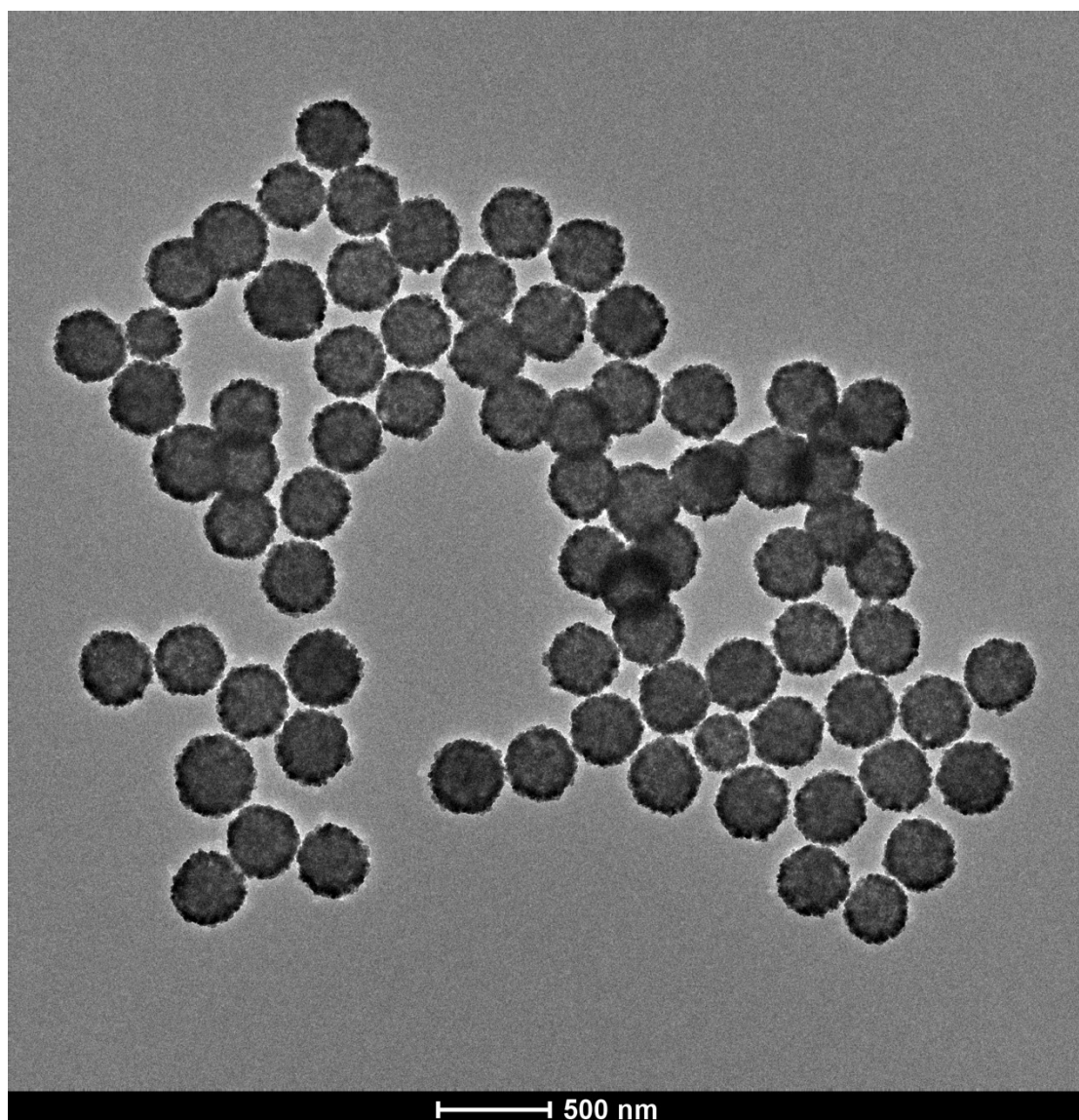


Figure S1 TEM image of hollow Fe_3O_4 microspheres.

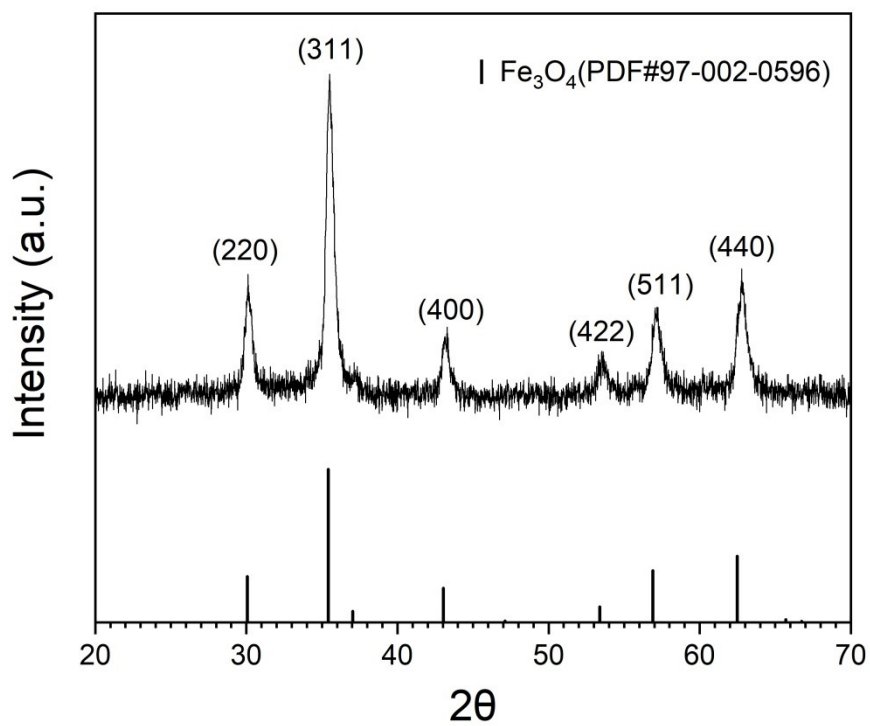


Figure S2 XRD pattern of hollow Fe_3O_4 microspheres.

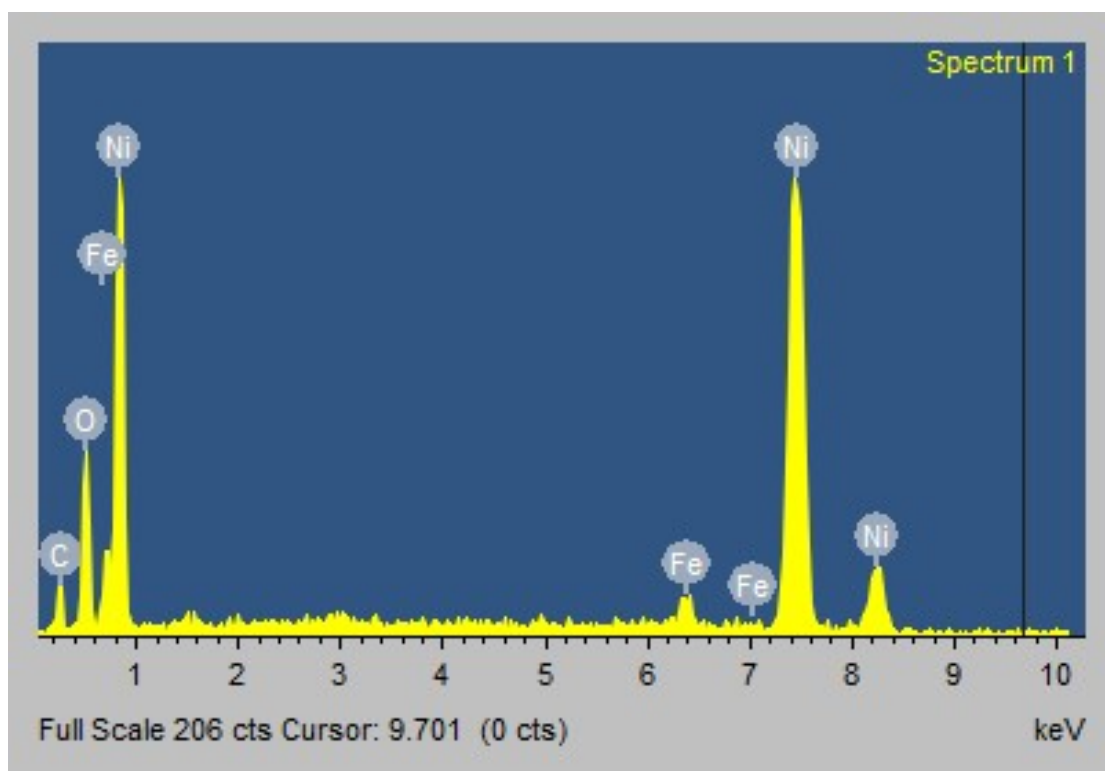


Figure S3 EDX result of $\text{Fe}_3\text{O}_4\text{-GO-Ni@}$ cotton threads.

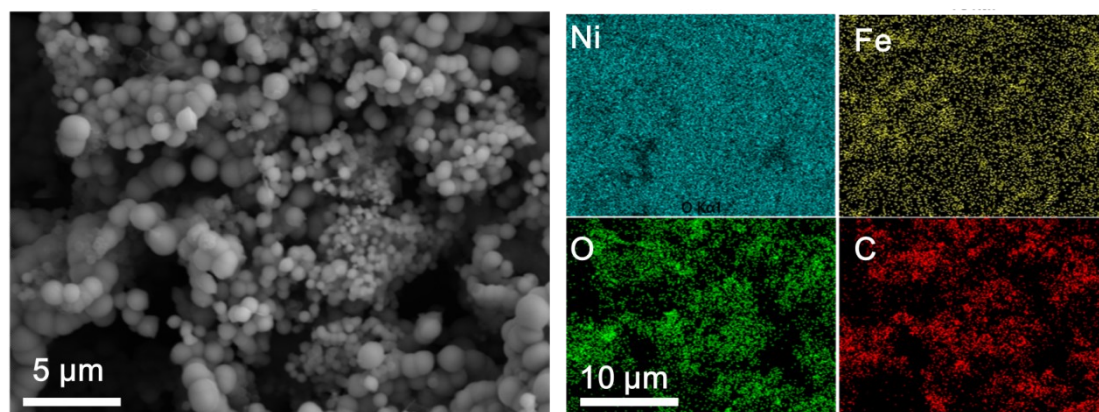


Figure S4 Images of EDX element mapping characterization of $\text{Fe}_3\text{O}_4\text{-GO-Ni@}$ cotton threads.

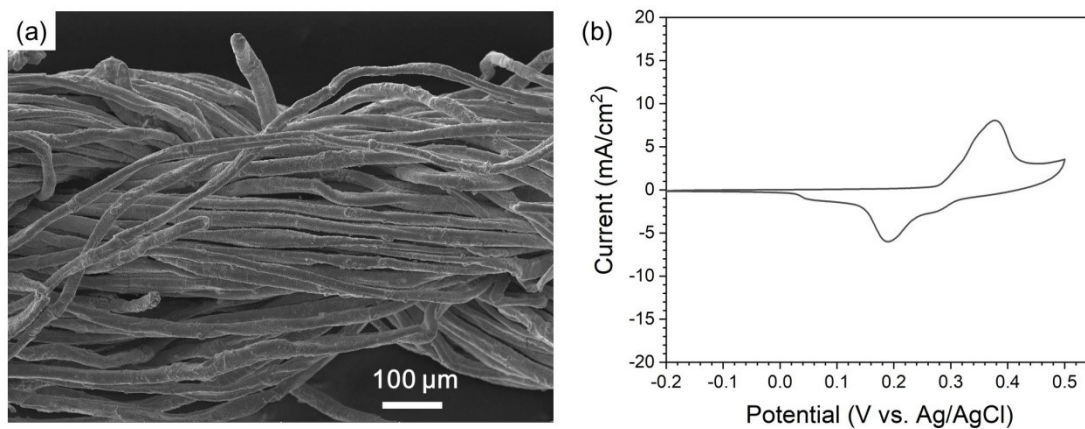


Figure S5 (a) the SEM image and (b) the CV curve of the Ni@cotton electrodes at the scan rate of 5 mV/s.

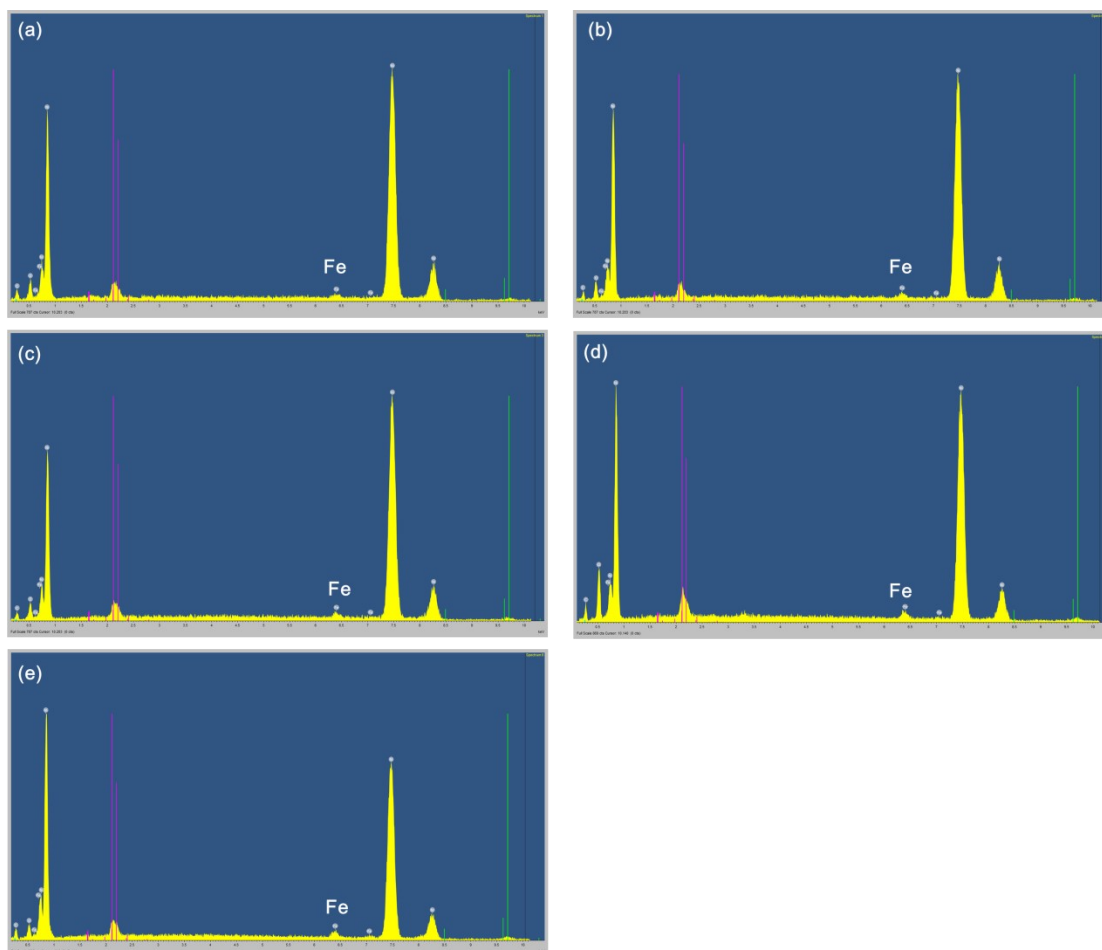


Figure S6 EDX results of Fe₃O₄-GO-Ni@cotton threads synthesized with GO concentrations of (a) 0 mg/L, (b) 12.5 mg/L, (c) 25 mg/L, (d) 50 mg/L, and (e) 125 mg/L.

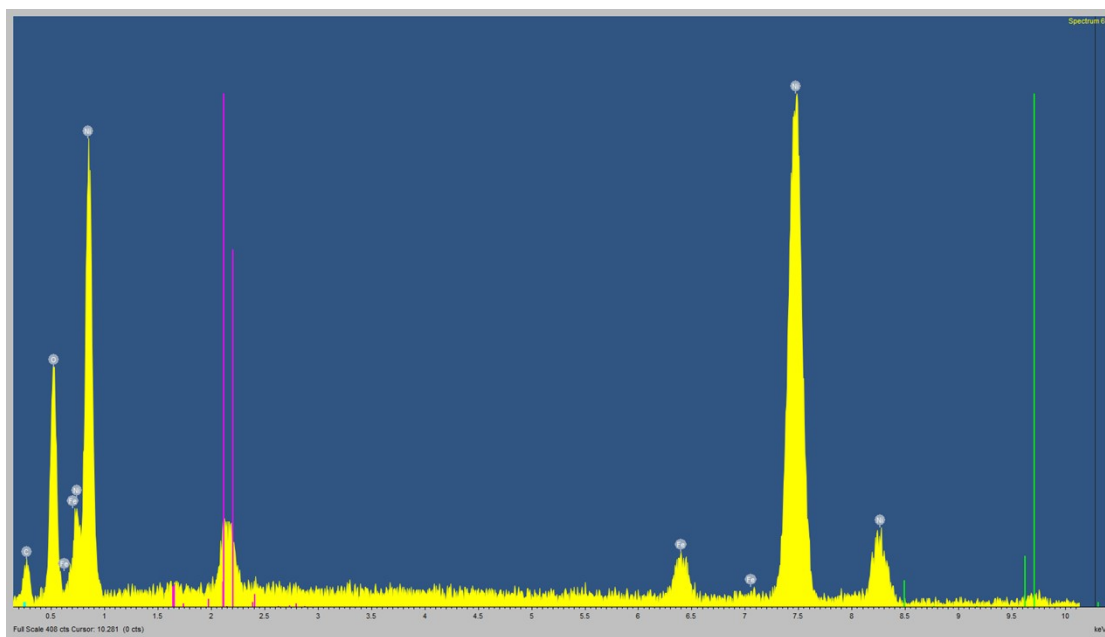


Figure S7 EDX result of $\text{Fe}_3\text{O}_4\text{-GO-Ni@ cotton}$ threads synthesized with the concentration of hollow Fe_3O_4 microspheres of 1.0 g/L.

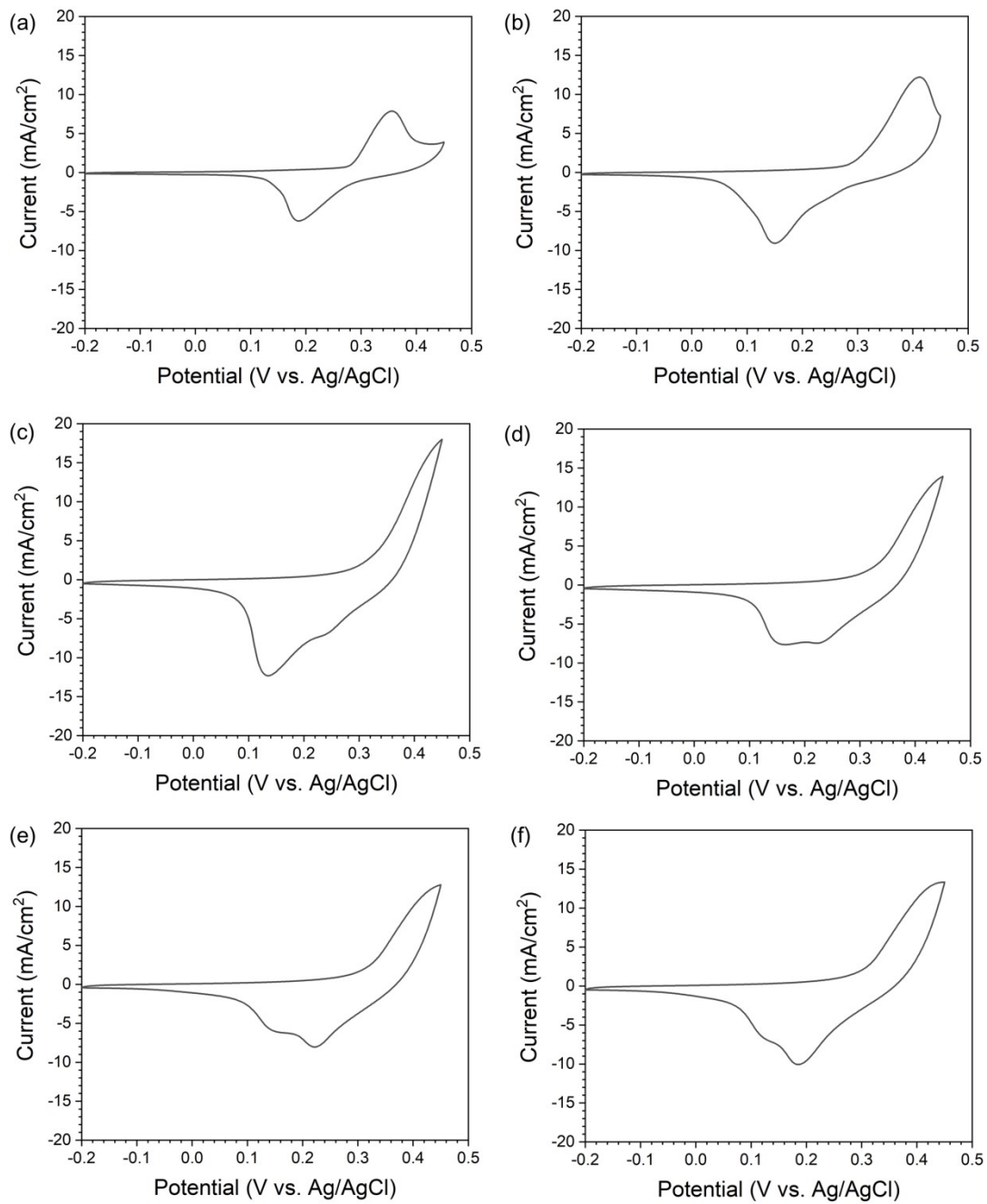


Figure S8 CV curves of $\text{Fe}_3\text{O}_4\text{-GO-Ni@cotton}$ electrode at different cycles during the long cycle test ((a) 1st cycle, (b) 100th cycle, (c) 1,000th cycle, (d) 2,000th cycle, (e) 5,000th cycle, and (f) 10,000th cycle).

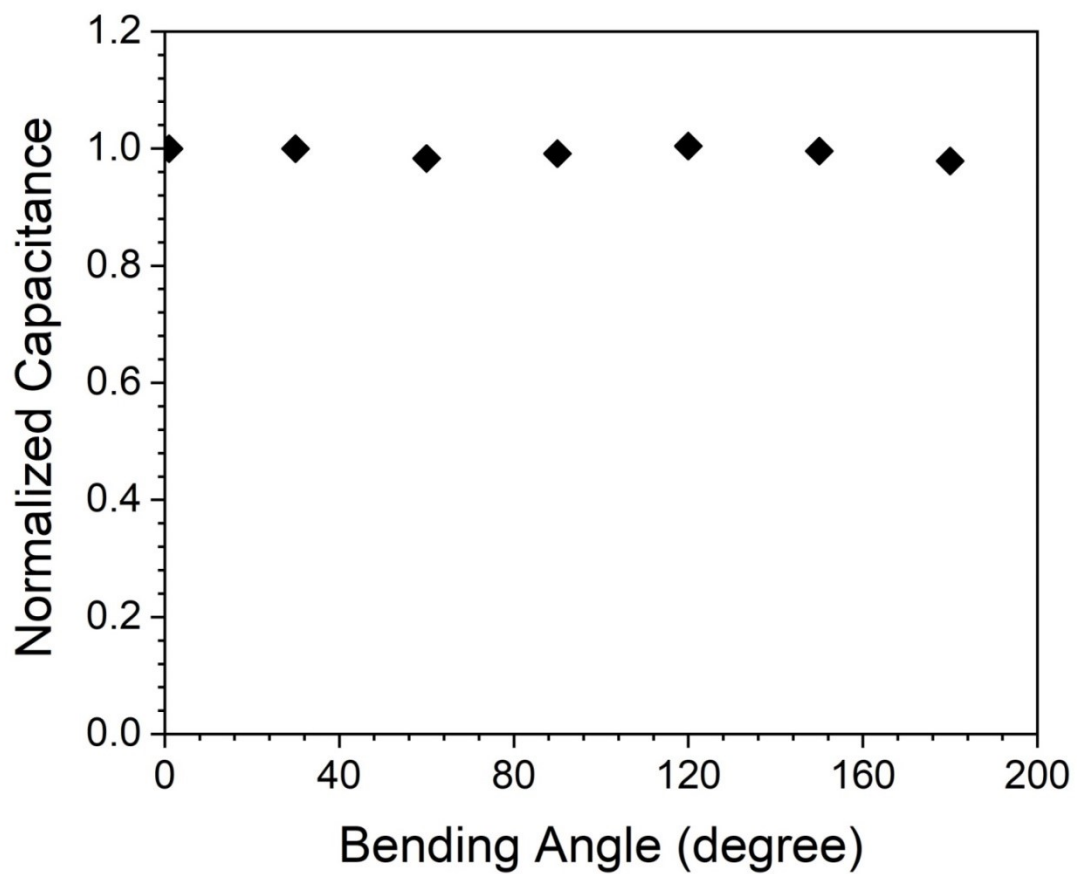


Figure S9 Capacitance retention of the flexible solid-state $\text{Fe}_3\text{O}_4\text{-GO-Ni@ cotton}$ supercapacitor against the bending angle.