Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information for

A Novel High-Performance Electrode Architecture for Supercapacitors: Fe_2O_3 Nanocubes and Carbon nanotubes Functionalized Carbon

Rui Wang,[a] Shichang Cai,[a] Yizhi Yan,[a] William M. Yourey[b,c], Wei Tong[b*], Haolin Tang[a]*

[a]*State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, P. R. China*

[b]*Energy Storage and Distributed Resources Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720 USA*

[c]*College of Engineering, Penn State University, Hazleton, PA 18202 USA*

*Corresponding authors: thln@whut.edu.cn, weitong@lbl.gov

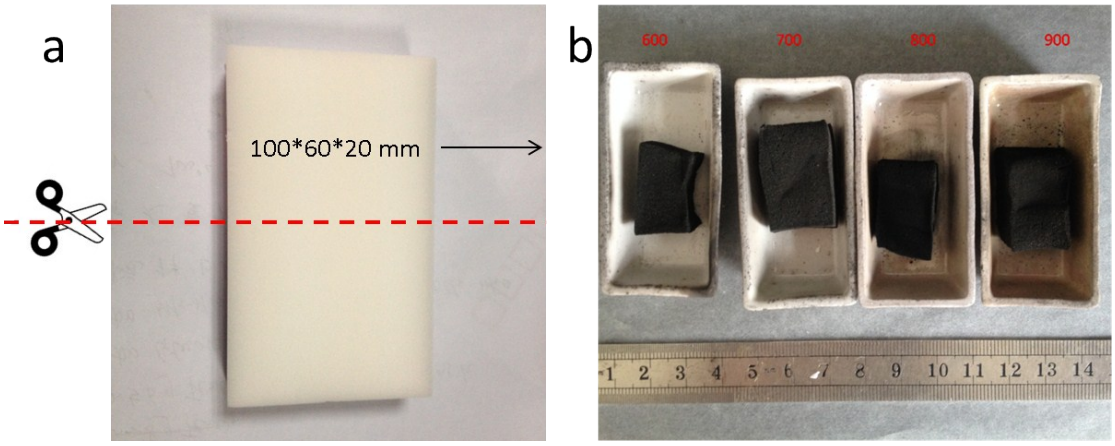

Figure S1 Optical photographs of (a) full-size pristine sponge sample, and (b) half-size sample after heat-treatment.

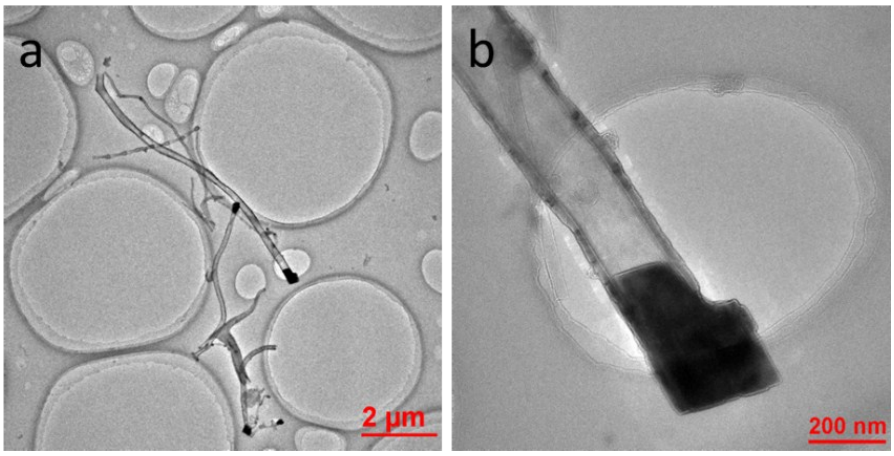

Figure S2 (a) Representative TEM image, and (b) high-resolution TEM image of FNCs/CNTs-C sample.

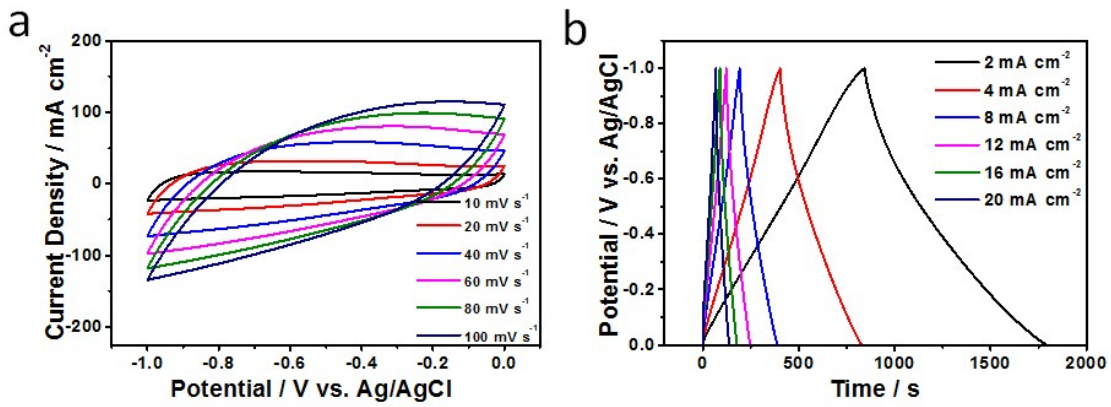

Figure S3 (a) CV curves at various scan rates (10 - 100 mV/s), (b) galvanostatic charge - discharge curves at various current densities (2 - 20 mA/cm^2) for FNCs/CNTs-C.

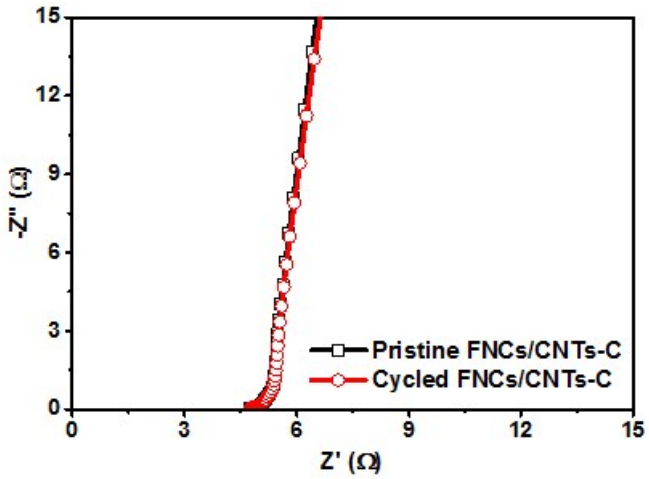

Figure S4 EIS spectra of the FNCs/CNTs-C before and after 20,000 cycles.

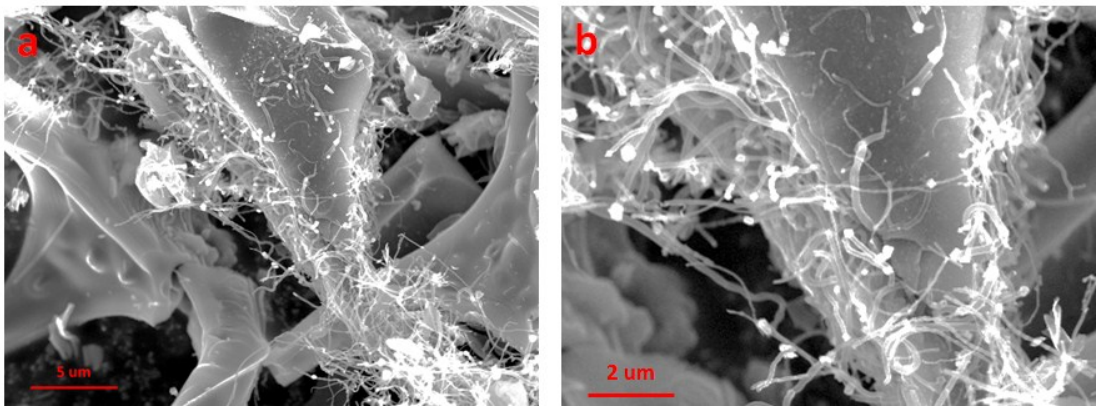

Figure S5 SEM images of cycled FNCs/CNTs-C electrode at varied magnifications. Electrode was cycled for 20,000 times at a scan rate of 100 mV/s.

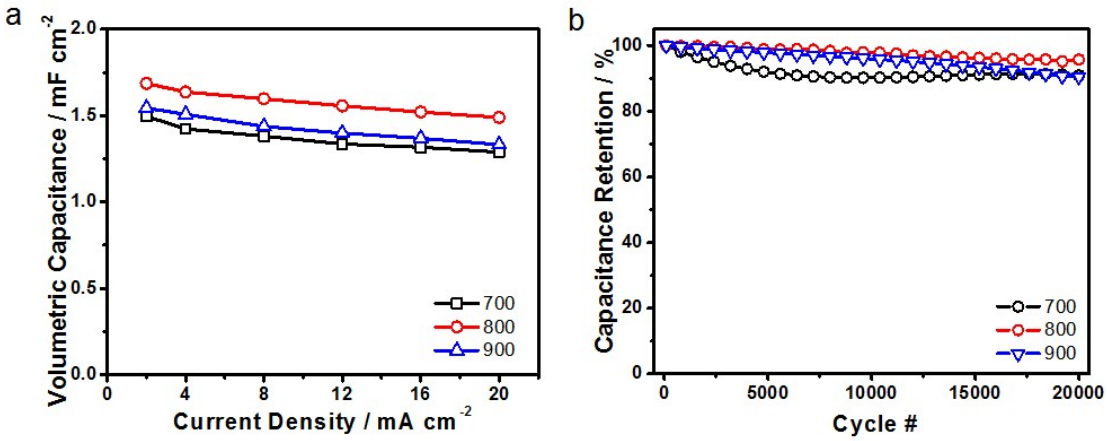

Figure S6 (a) Volumetric capacitance, (b) cycling performance of FNCs/CNTs-C electrodes synthesized at different temperatures.

Table S1 Elemental content of FNCs/CNTs-C sample (atomic %) detected by XPS.

Element	C	O	N	Fe
Atomic %	86.34	7.84	5.46	0.36

Table S2 Comparison of the electrochemical performance of FNCs/CNTs-C with that reported for Fe_2O_3 and Fe_2O_3/C electrodes.

Electrodes	Areal capacitance (mF cm^{-2})		Cycling Performance	Ref.
FNCs/CNTs-C	**1424 at 10 mV s^{-1}**	**1687 at 2 mA cm^{-2}**	**95.8% retention after 20000 cycles**	**This work**
Fe_2O_3@PANI	~48 at 10 mV s^{-1}	103 at 0.5 mA cm^{-2}	100% retention after 2500 cycles	1
Fe_2O_3 NTs	-	180.4 at 1 mA cm^{-2}	-	2
N- Fe_2O_3	277.3 at 10 mV s^{-1}	382.7 at 0.5 mA cm^{-2}	95.2% retention after 10000 cycles	3
Graphene/Fe_2O_3	-	-	75% retention after 200 cycles	4
Fe_2O_3-graphene	-	-	86% retention after 1000 cycles	5
□- Fe_2O_3/rGO	~ 189 at 10 mV s^{-1}	386.80 at 2 mA cm^{-2}	75% retention after 1000 cycles	6
Fe_2O_3 NP cluster/rGO paper	178.3 at 1 mV s^{-1}	-	83.1% retention after 10000 cycles	7
FeOOH/40G	-	-	89.7% retention after 20000 cycles	8
Activated- Fe_2O_3@C	-	-	90.6% retention after 10000 cycles	9
Fe_2O_3/RGO/Fe_3O_4@Fe	-	337.5 at 20 mA cm^{-2}	95% retention after 5000 cycles	10
GF-CNT@400Fe_2O_3	-	470.5 at 20 mA cm^{-2}	111.2% retention after 50000 cycles	11
Ti-Fe_2O_3@PEDOT	395.6 at 10 mV s^{-1}	1150 at 1 mA cm^{-2}	96.1% retention after 30000 cycles	12

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