

Supporting Information

Bacterial Cellulose Derived Carbon Nanofibers as both Anode and Cathode for Hybrid Sodium Ion Capacitor

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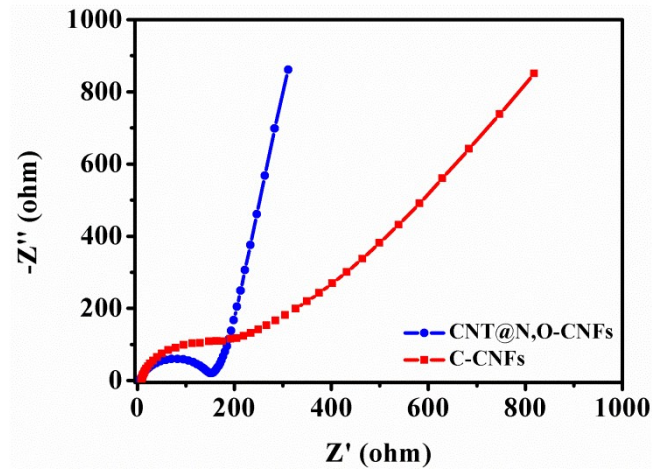


Figure S1. Nyquist plots of the CNT@N,O-CNFs and C-CNFs electrodes

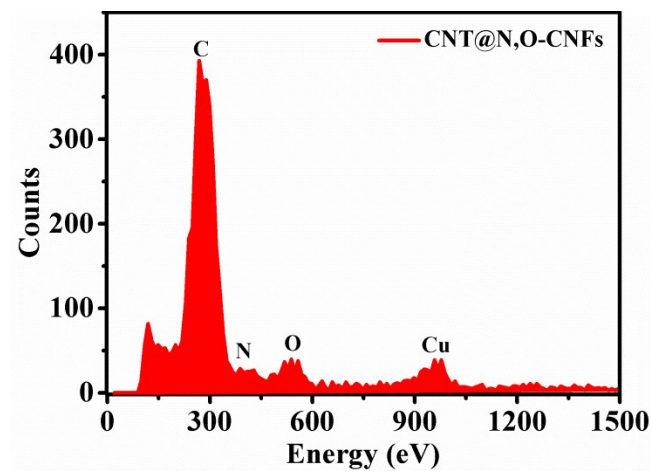


Figure S2. Energy dispersive X-ray spectroscopy analysis of CNT@N,O-CNFs

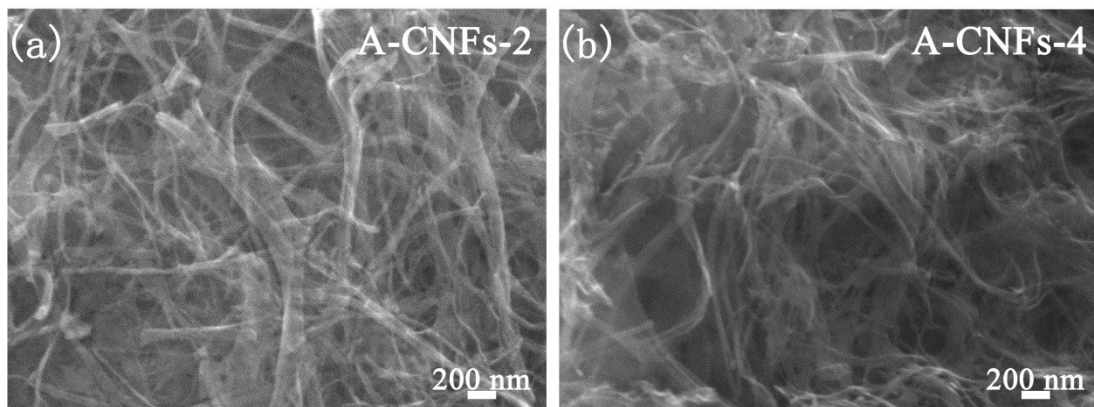


Figure S3. SEM images of (a) A-CNFs-2, (b) A-CNFs-4

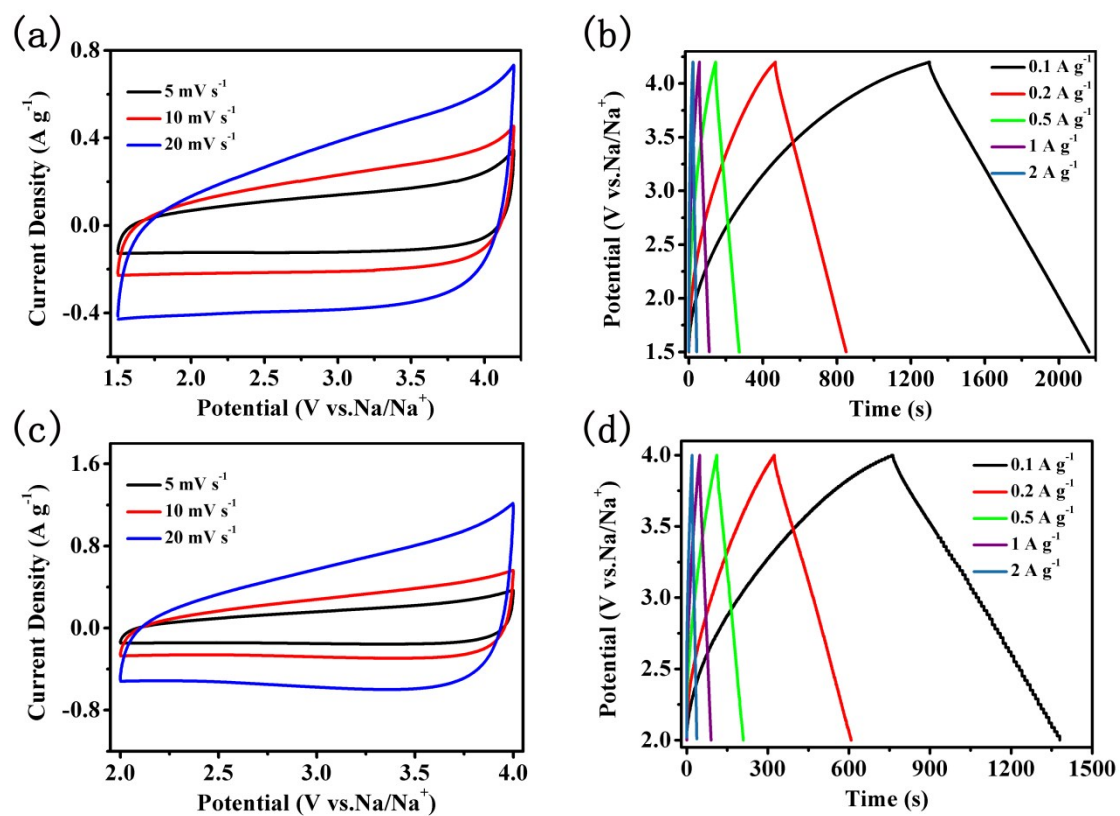


Figure S4. CV curves at various scan rates of 5 to 20 mV s⁻¹ in a potential range of (a) 1.5-4.2 V and (c) 2.0-4.0 V; Galvanostatic charge/discharge curves with various current densities from 0.1 to 2 A g⁻¹ in a potential range of (b) 1.5-4.2 V and (d) 2.0-4.0V;

Table S1. Comparison of the electrochemical performance of full-cell HICs

System (anode//cathode)	Energy density (Wh kg ⁻¹)	Power density (W kg ⁻¹)	Capacity retention (%) / cycle number / current density (A g ⁻¹)	Ref.
CNTs@N,O-CNFs//A-CNFs	59.2@275 W kg ⁻¹	5500@38.7 Wh kg ⁻¹	48.6%/5000/0.5	This work
CS-800//CS-800-6	52.2@300 W kg ⁻¹	3000@15.8 Wh kg ⁻¹	85.7%/2000/1	1
S-N/CNTs//AC	116.4@200 W kg ⁻¹	20000@48.2 Wh kg ⁻¹	81%/3000/2	2
Na-TNT//AC	34@120 W kg ⁻¹	889@13 Wh kg ⁻¹	80%/1000/0.25	3
NVP@AC//NVP@AC	26@270 W kg ⁻¹	5424@15 Wh kg ⁻¹	64.5%/10000/1.17	4
Nb ₂ O ₅ //AC	43.2@160 W kg ⁻¹	5760@24 Wh kg ⁻¹	80%/3000/1.28	5
MWTOG//AC	64.2@56 W kg ⁻¹	1357@25.8 Wh kg ⁻¹	90%/10000/3.35	6
V ₂ O ₅ @CNT//AC	38@140 W kg ⁻¹	5000@7.5 Wh kg ⁻¹	80%/900/60 C	7

References

1. S. Wang, R. Wang, Y. Zhang, D. Jin and L. Zhang, *J. Power Sources*, 2018, **379**, 33-40.
2. K. Liao, H. Wang, L. Wang, D. Xu, M. Wu, R. Wang, B. He, Y. Gong and X. Hu, *Nanoscale. Adv*, 2019, **1**, 746-756.
3. J. Yin, L. Qi and H. Wang, *Acs Appl. Mater. Interfaces*, 2012, **4**, 2762-2768.
4. Z. Jian, V. Raju, Z. Li, Z. Xing, Y. S. Hu and X. Ji, *Adv. Funct. Mater.*, 2015, **25**, 5778-5785.
5. H. Li, Y. Zhu, S. Dong, L. Shen, Z. Chen, X. Zhang and G. Yu, *Chem. Mater.*, 2016, **28**, 5753-5760.
6. Z. Le, F. Liu, P. Nie, X. Li, X. Liu, Z. Bian, G. Chen, H. B. Wu and Y. Lu, *ACS nano*, 2017, **11**, 2952-2960.
7. Z. Chen, V. Augustyn, X. Jia, Q. Xiao, B. Dunn and Y. Lu, *ACS nano*, 2012, **6**, 4319-4327.