



Supplementary material

Ultra-Stable Potassium Ion Storage of Nitrogen-Doped Carbon Nanofiber Derived from Bacterial Cellulose

Liang Ma ^{1,2,†}, Jinliang Li ^{2,†}, Zhibin Li ², Yingying Ji ², Wenjie Mai ² and Hao Wang ^{1,*}

¹ Guangdong Provincial Key Laboratory of Micro/Nano Optomechatronics Engineering, College of Mechatronics and Control Engineering, Shenzhen University, Shenzhen 518060, China; maliang2415@jnu.edu.cn (L. M.)

² Siyuan Laboratory, Guangdong Provincial Engineering Technology Research Center of Vacuum Coating Technologies and New Materials, Department of Physics, Jinan University, Guangzhou, Guangdong 510632, China; lijnliang@email.jnu.edu.cn (J.L.); pibetaguita@gmail.com (Z.L.); jiyinying07@163.com (Y.J.); wenjiemai@email.jnu.edu.cn (W.M.);

* Correspondence: whao@szu.edu.cn

† These authors contributed equally.

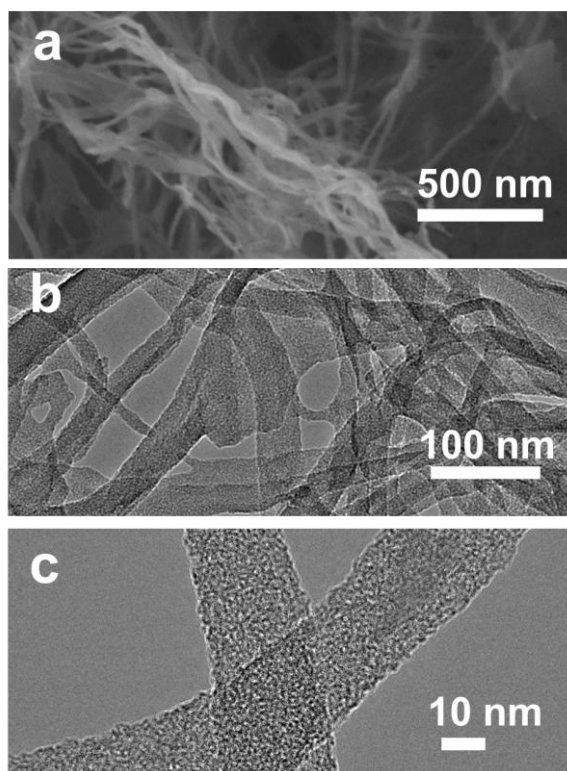


Figure S1. (a) SEM, (b) TEM and (c) high-resolution TEM image of CNF.

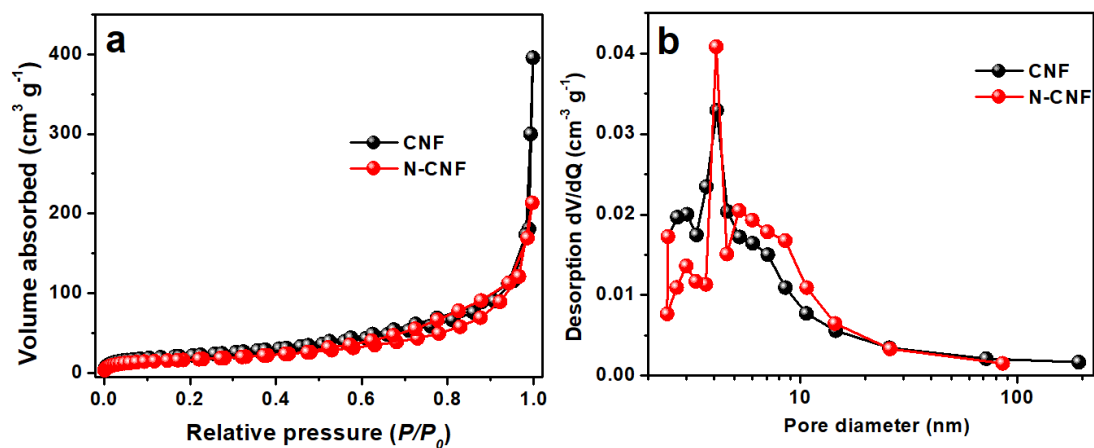


Figure S2. (a) nitrogen adsorption-desorption isotherms and (b) pore diameter distribution of CNF and N-CNF.

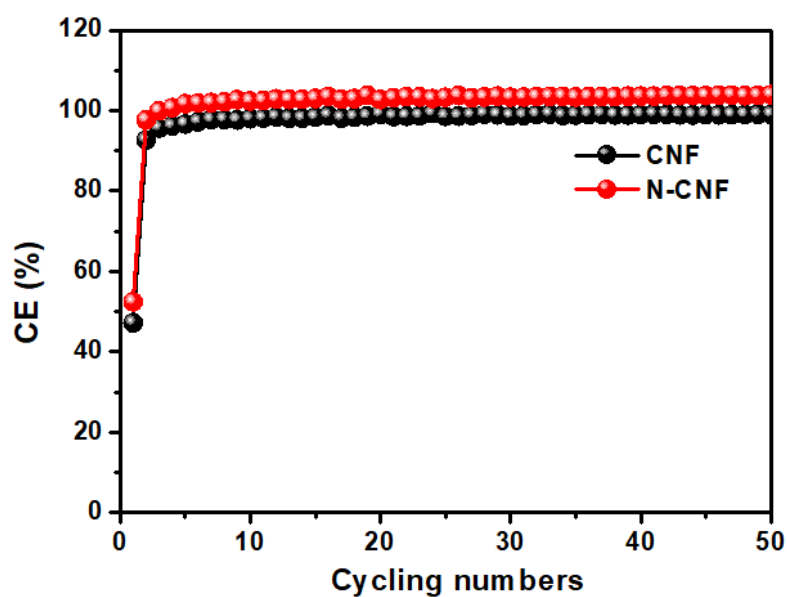


Figure S3. CEs of CNF and N-CNF.

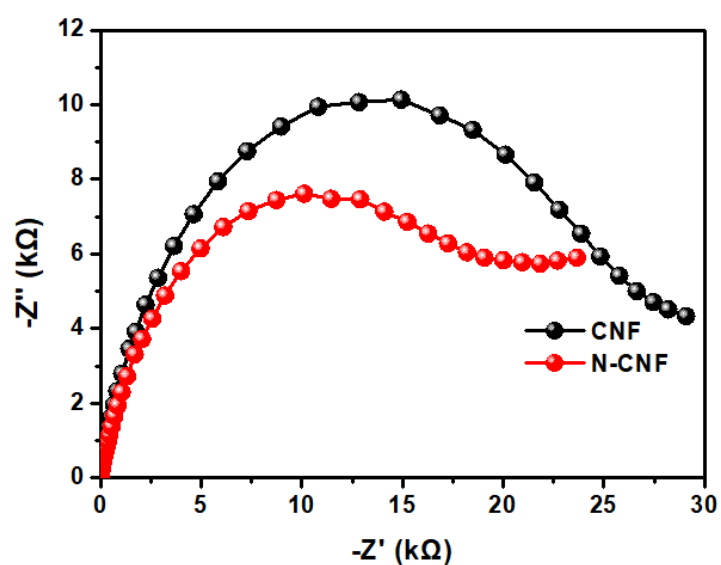


Figure S4. EIS of CNF and N-CNF after 50 cycles.

Table S1. The obtained parameters based on DFT calculation.

| System | E_2 (eV) | E_1 (eV) | μK (eV) | ΔE_a (eV) |
|---------------|------------------------------|------------------------------|--------------------------------|-------------------------------------|
| C-C model | -318.886 | -316.785 | -0.304 | -1.80 |
| C-N model | -320.046 | -317.604 | -0.304 | -2.14 |