

SUPPORTING INFORMATION

Ultrasmall Sized-SnS Nanosheets Vertically Aligned on Carbon Microtubes for Sodium-Ion Capacitors with High Energy Density

*Jing Zhao,^a Guiling Wang,^{*a} Rong Hu,^a Kai Zhu,^a Kui Cheng,^a Ke Ye,^a Dianxue Cao,^a
Zhuangjun Fan^{*ab}*

^aKey Laboratory of Superlight Materials and Surface Technology of Ministry of Education, Department of Materials Science and Engineering, Harbin Engineering University, Harbin, Heilongjiang, 150001, P. R. China

^bSchool of Materials Science and Engineering, China University of Petroleum, Qingdao, 266580, P. R. China

*Correspondence to Guiling Wang: wangguiling@hrbeu.edu.cn; Zhuangjun Fan: fanzhj666@163.com

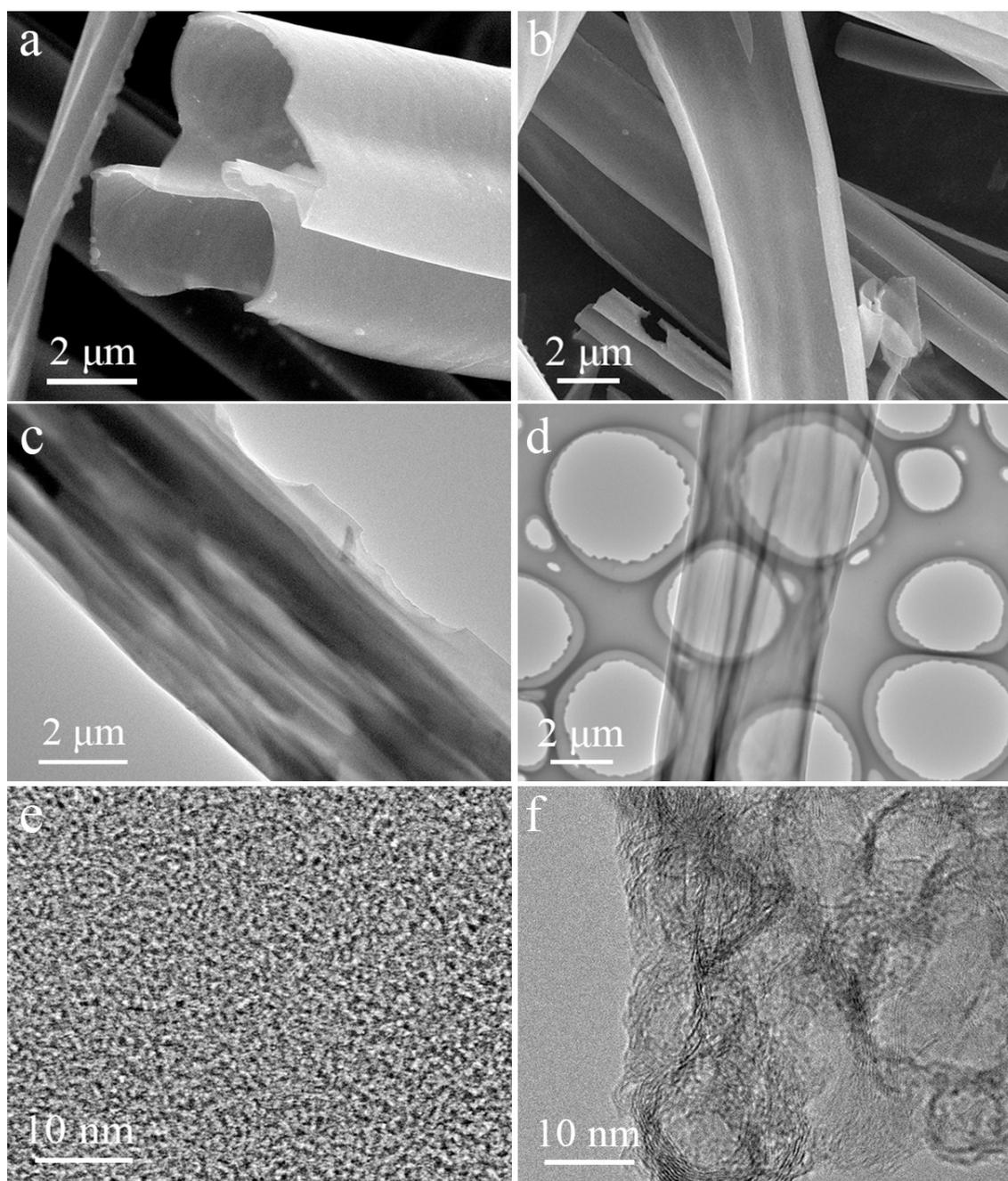


Figure S1. SEM images of the (a) CMT and (b) aCMT. TEM images of the (c) CMT and (d) aCMT. HRTEM images of (e) CMT and (f) aCMT.

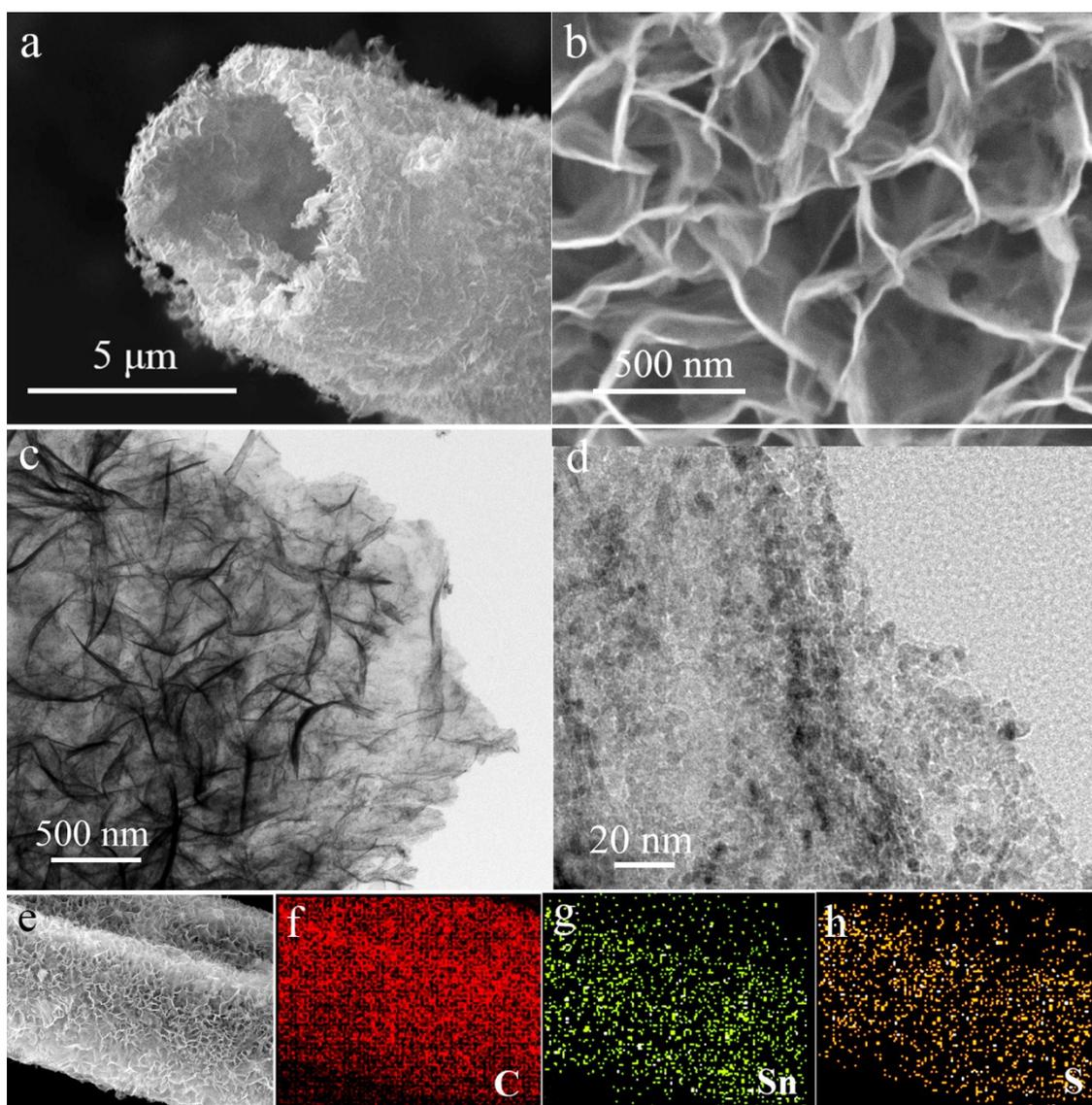


Figure S2. (a, b) SEM images of the SnS/aCMT. (c, d) TEM images of the SnS/aCMT. (e) SEM image and EDS elemental mappings of (f) C, (g) Sn and (h) S elements for SnS/aCMT composite.

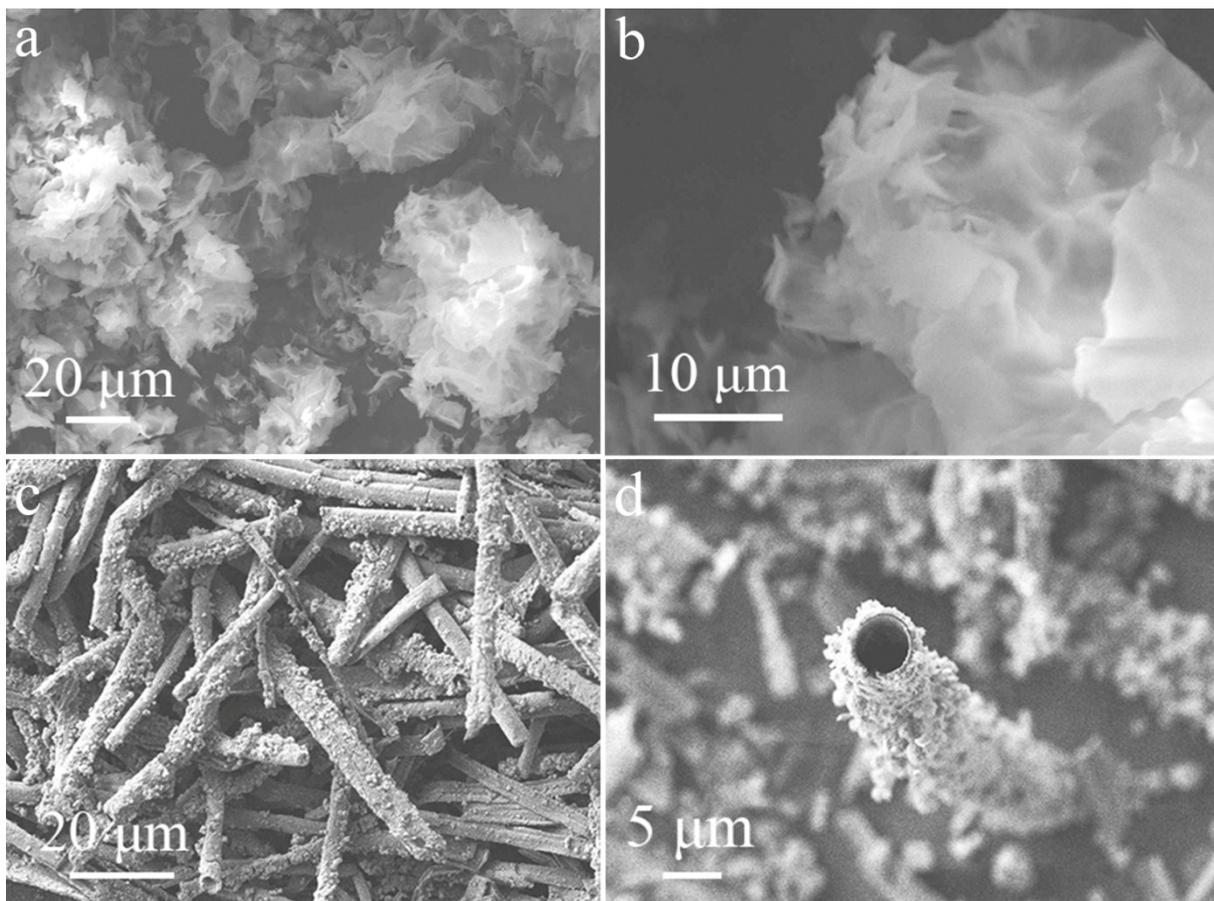


Figure S3. (a, b) SEM images of the bare SnS. (c, d) SEM images of the SnS/aCMT prepared without CTAB surfactant.

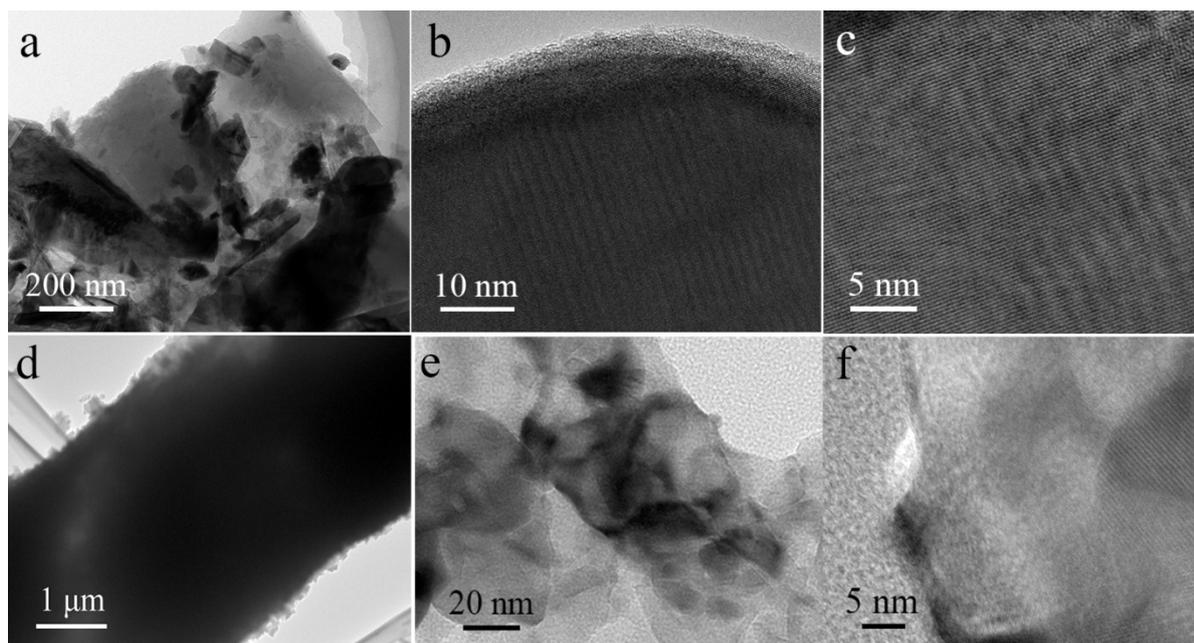


Figure S4. (a-c) TEM images of the bare SnS. (d-f) TEM images of the SnS/aCMT prepared without CTAB surfactant.

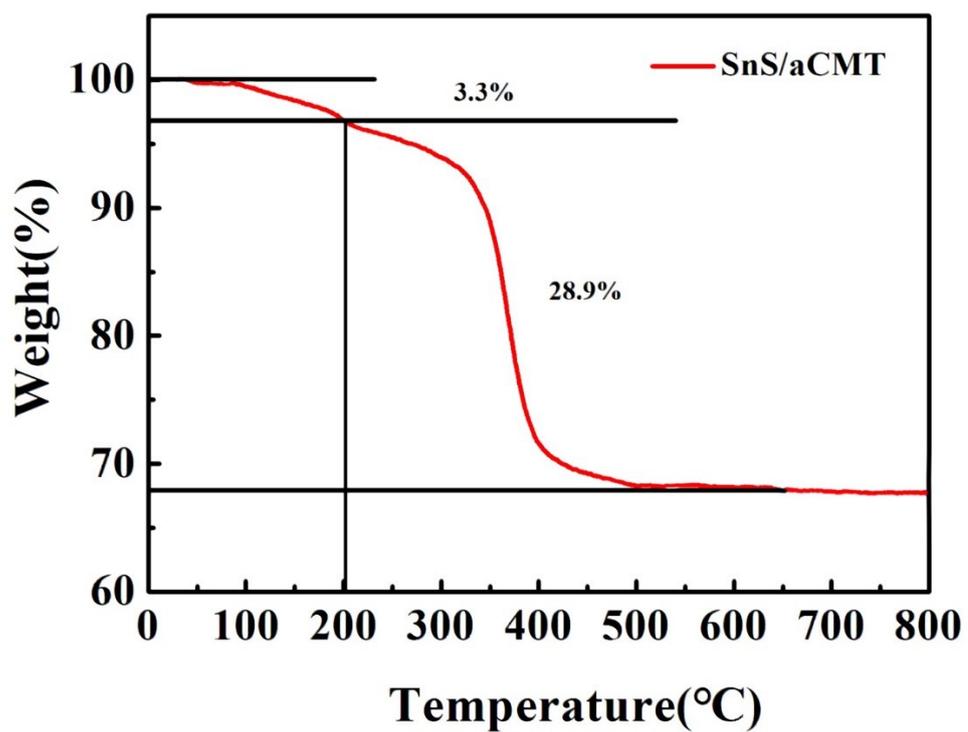


Figure S5. TGA curve of SnS/aCMT oxidized in air.

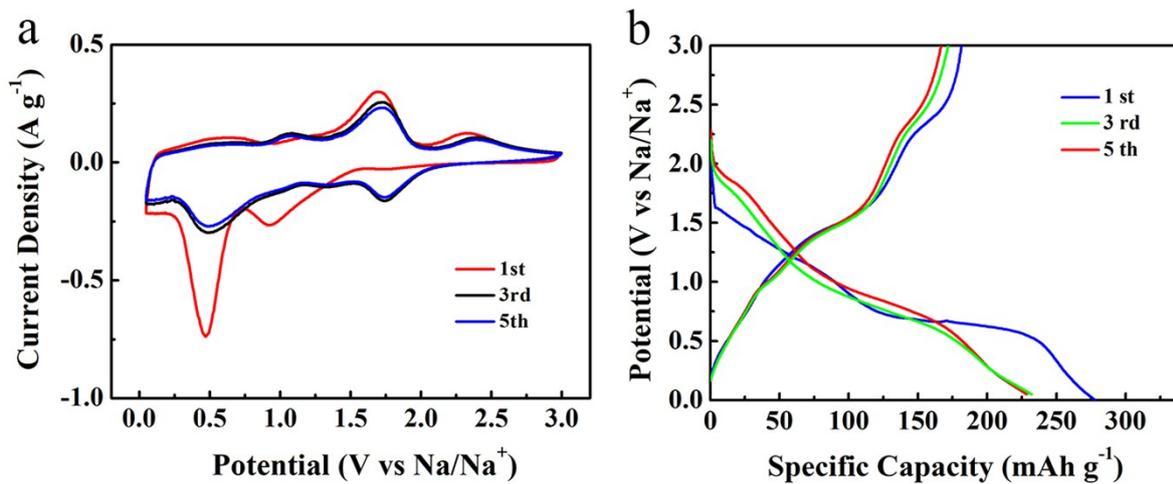


Figure S6. Electrochemical performances of the bare SnS. (a) CV curves at the scan rate of 0.3 mV s^{-1} in the voltage range from 0.01 to 3.0 V. (b) Discharge/charge curves at the current density of 0.5 A g^{-1} for the 1st, 3rd and 5th cycles.

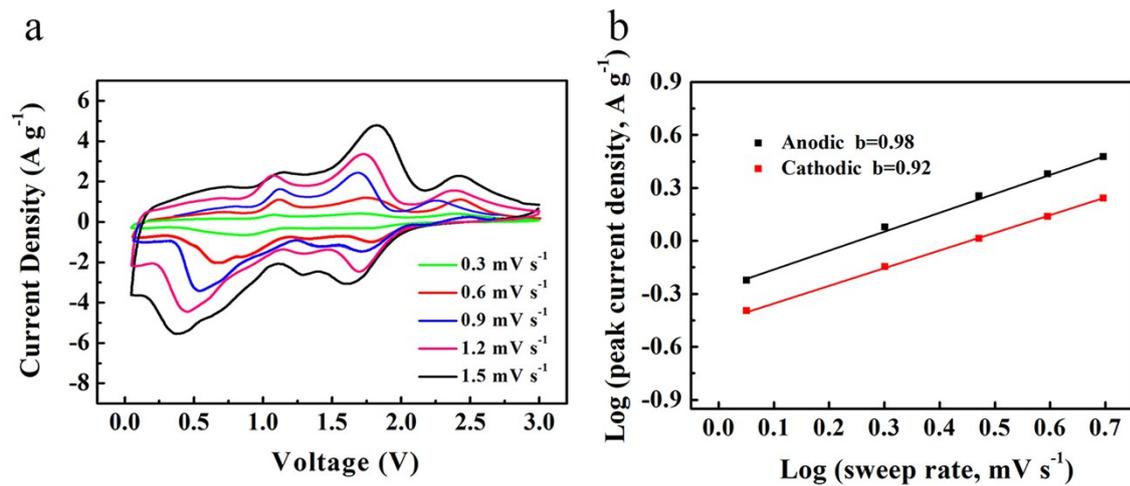


Figure S7. (a) CV curves at various scan rates, ranging from 0.3 to 1.5 mV s^{-1} . (b)

Relationship between specific peak currents and scan rates.

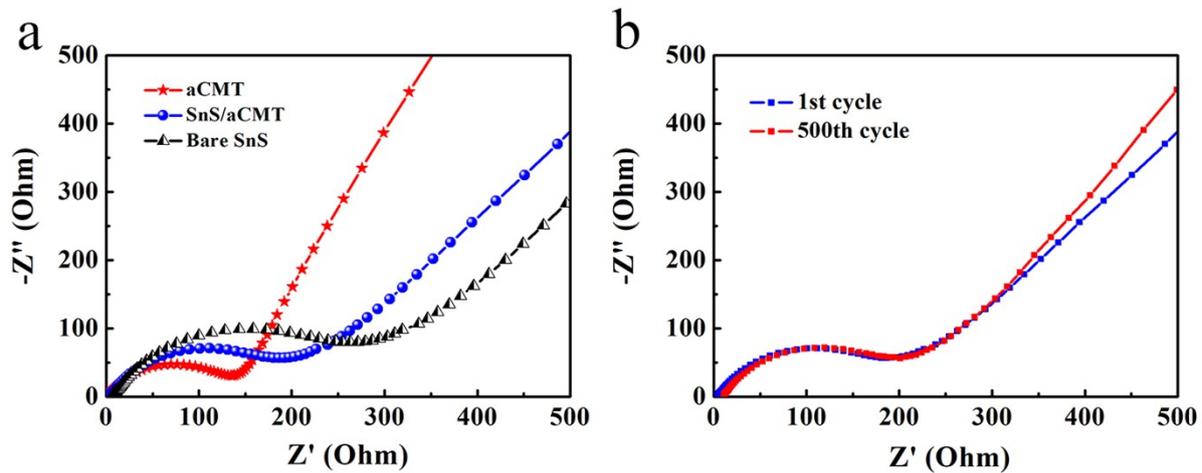


Figure S8. (a) Nyquist plots of aCMT, SnS/aCMT and bare SnS materials. (b) Nyquist plots of SnS/aCMT under different cycles at the current density of 0.1 A g^{-1} .

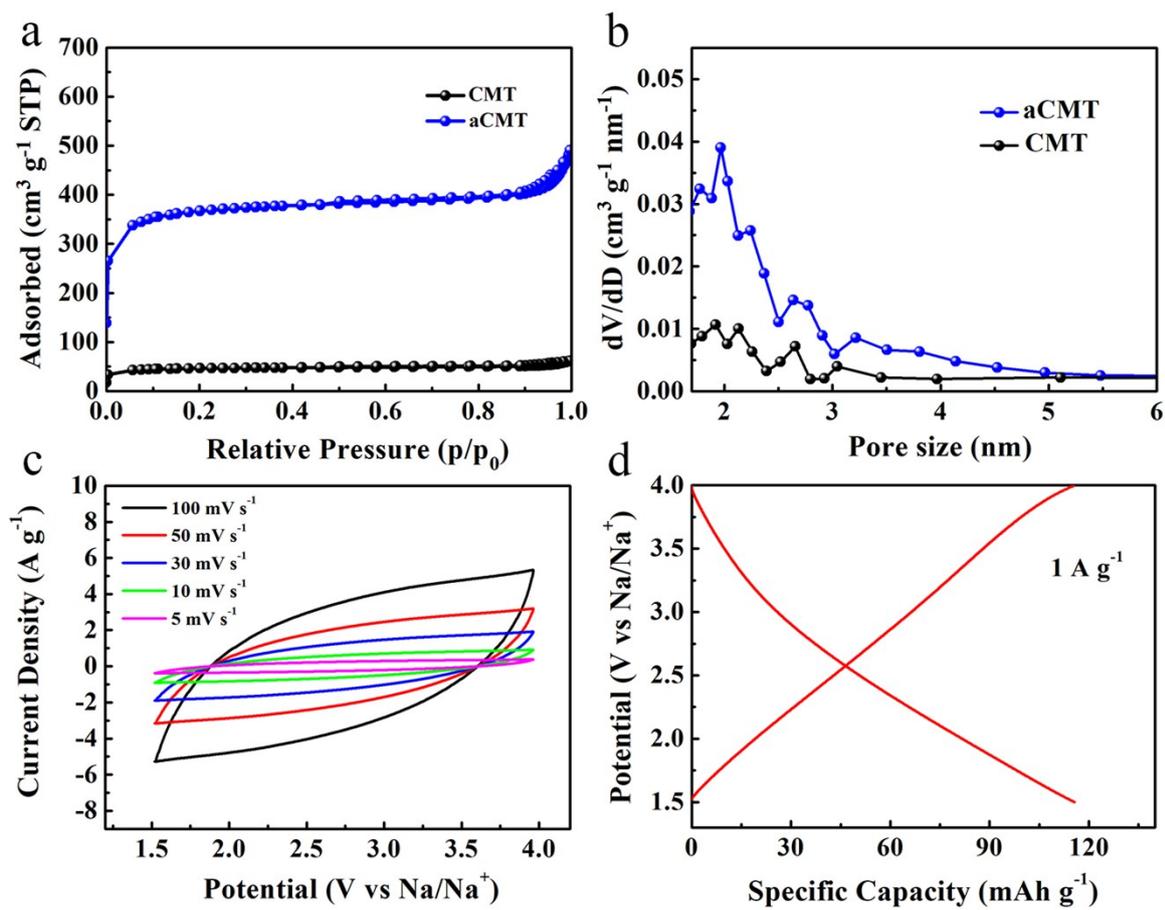


Figure S9. (a) Nitrogen adsorption-desorption isotherms and (b) Pore size distribution of CMT and aCMT. (c) CV curves at different scan rates and (d) Discharge/charge curve at 1 A g^{-1} of the aCMT electrode vs Na/Na^+ .