Supporting information

Confining Sb Nanoparticles in Bamboo-like Hierarchical Porous Aligned Carbon Nanotubes as an Anode for Sodium Ion Battery with Ultralong Cyclic performance

Chao Kang[a], Shengping Zhou[a], Jilei Liu[a], YanFei Zhu[a], Aiping Hu*[a], Qunli Tang[a], Yan Zhang[a], Xiaohua Chen*[a], Tao Tao[b]

a. College of Materials Science and Engineering, Hunan University, Changsha, 410082, China. E-mail: hudaaipinghu@126.com; xiaohuachen@hnu.edu.cn

b. Dongguan South China Design Innovation Institute, Dongguan, 523808, China

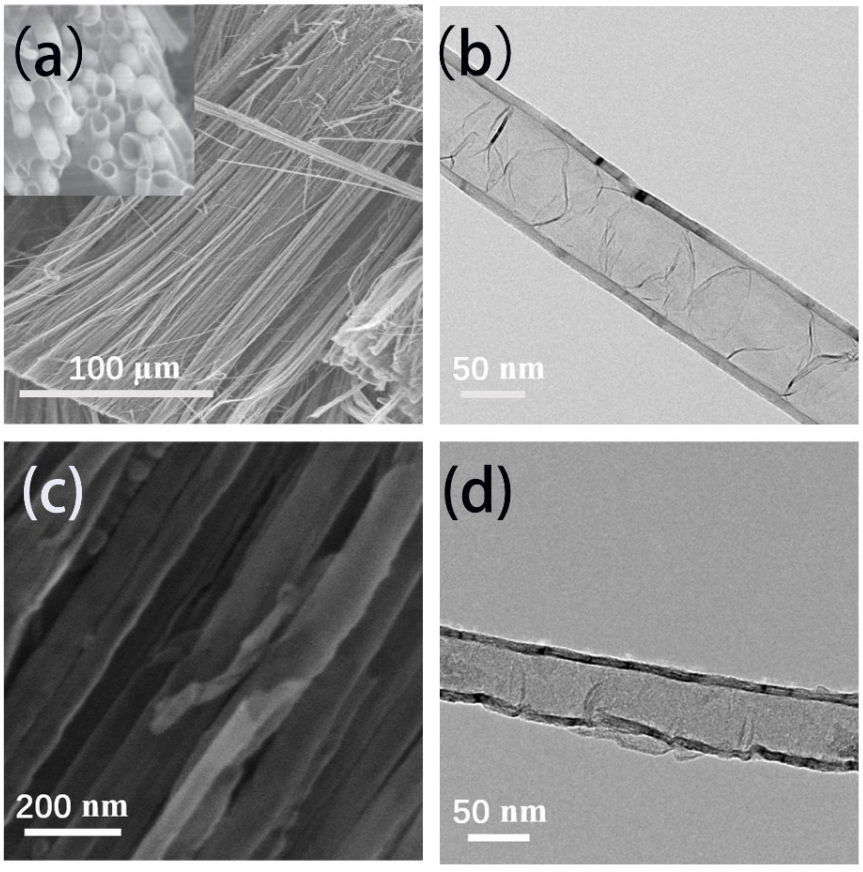

Fig. S1 (a-b) SEM and TEM of fresh bamboo-like ACNTs; (c-d) SEM and TEM of activated bamboo-like ACNTs.

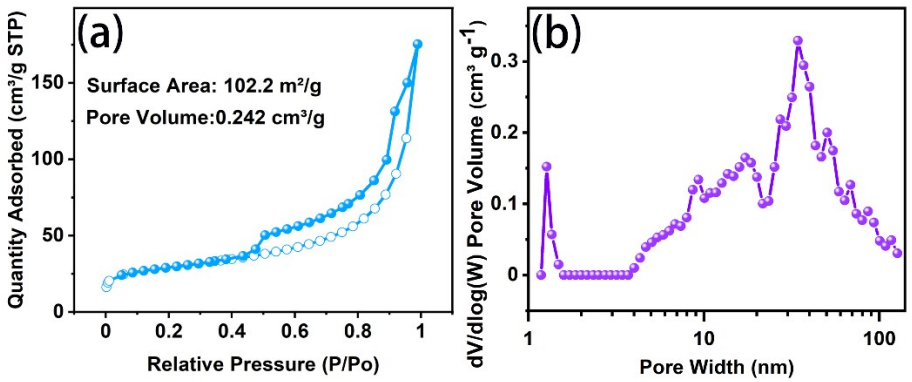

Fig. S2 Nitrogen adsorption-desorption curves of HPACNTs pore distribution (the inset).

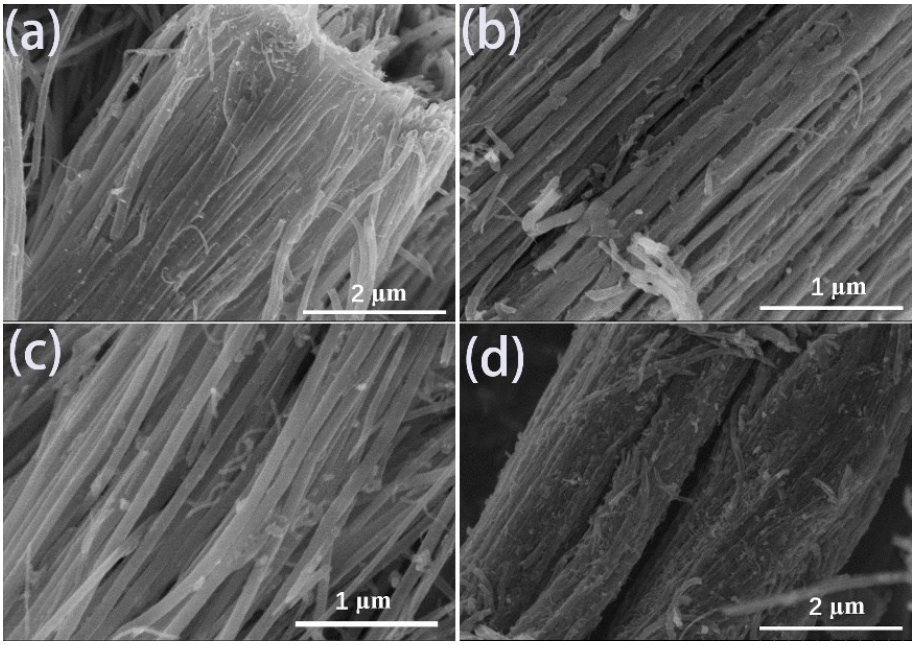

Fig. S3 SEM of samples (a) Sb/ACNTs-7; (b) Sb/HPACNTs-6; (c) Sb/HPACNTs-7; (d) Sb/HPACNTs-8.

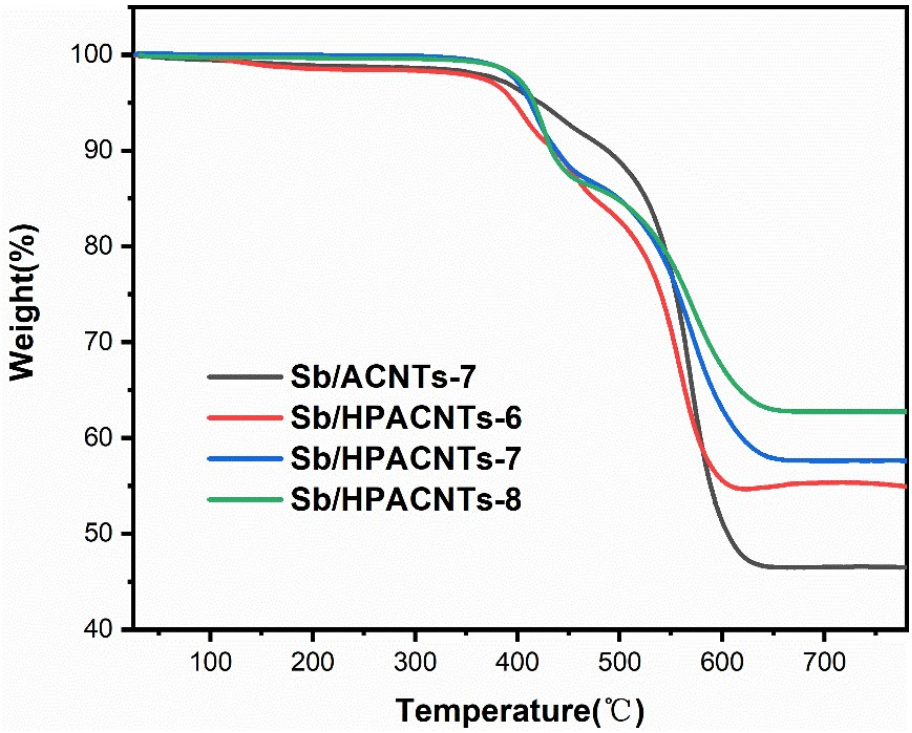

Fig. S4 TG curves of samples Sb/ACNTs-7; Sb/HPACNTs-6; Sb/HPACNTs-7; Sb/HPACNTs-8.

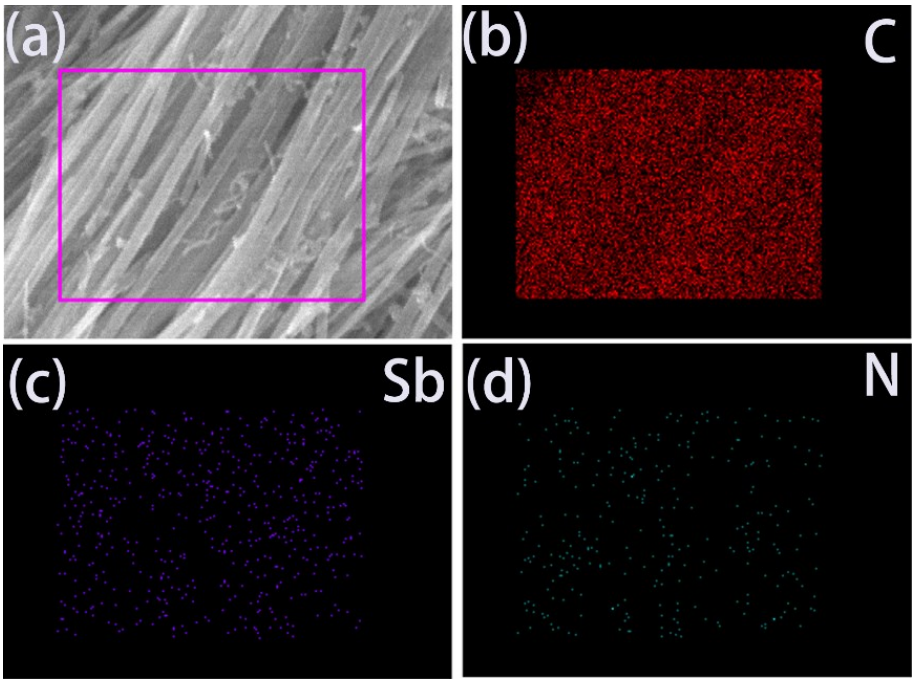

Fig. S5 SEM of samples (a) Sb/ACNTs-7; (b-d) element mappings of C, Sb and N.

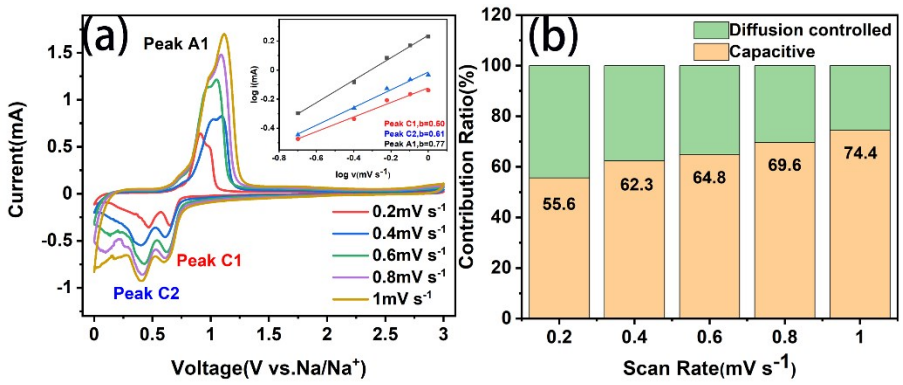

Fig. S6 (a) CV curves of sample Sb/HPACNTs-7 at various scan rates from 0.2 to 1.0 mV s^{-1}; (b) bar chart of the percentage of capacitive contribution at various scan rates.

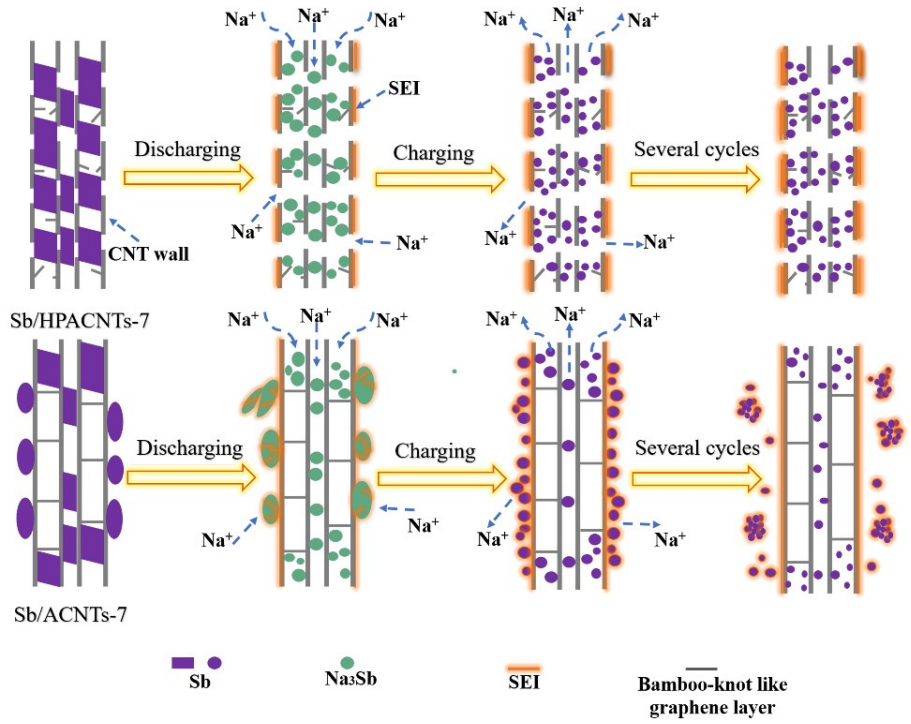

Fig. S7 Schematic structure evolution of active materials Sb in the process of cycling.

Table. S1 Electrochemical performances of the representative Sb-based anodes for SIBs.

Electrode materials	Rate capability ($mAh\ g^{-1}$)	Cycling capacity ($mAh\ g^{-1}$)	Reference
Nanoporous Sb	510 (1.32A g^{-1}) 420 (3.3A g^{-1})	574 (0.1 A g^{-1}), 200 cycles	1
Sb@C yolk–shell spheres	408 (0.5 A g^{-1}) 279 (2 A g^{-1})	280 (1 A g^{-1}), 200 cycles	2
Peapod-like Sb@N–C	638 (0.1 A g^{-1}) 310 (10 A g^{-1})	346 (2 A g^{-1}), 3000 cycles	3
Nanoporous Sb/C	461 (0.1 A g^{-1}) 298 (4 A g^{-1})	403 (1 A g^{-1}), 1000 cycles	4
Sb@HCMs	470 (0.1 A g^{-1}) 311.5 (3.2 A g^{-1})	454 (0.5 A g^{-1}), 150 cycles	5
Sb@C yolk–shell	554 (0.05 A g^{-1}) 315 (5A g^{-1})	422 (0.5 A g^{-1}), 200cycles	6
Sb/N-carbon/CNT	533 (0.1 A g^{-1}) 258 (2 A g^{-1})	543 (0.1 A g^{-1}), 200 cycles	7
SbNP/MWCNT	480 (0.1 A g^{-1}) 225 (2 A g^{-1})	382 (0.2 A g^{-1}), 120 cycles	8
Sb/HPACNTs	738 (0.1 A g^{-1}) 406 (5 A g^{-1})	318 (1A. g^{-1}), 4500 cycles	this work

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