

## Supplementary Information

### SnS/C nanocomposites for high-performance sodium ion battery anodes

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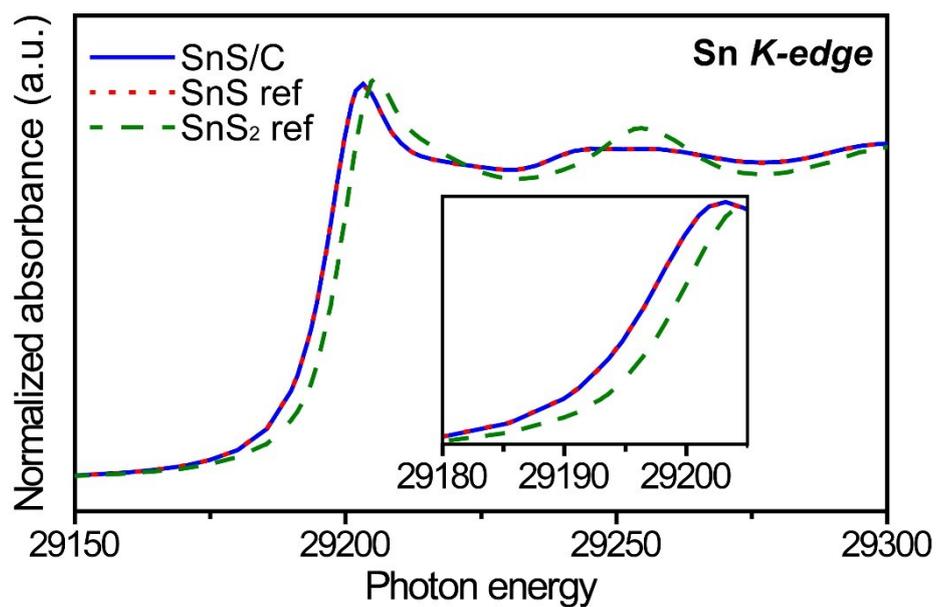
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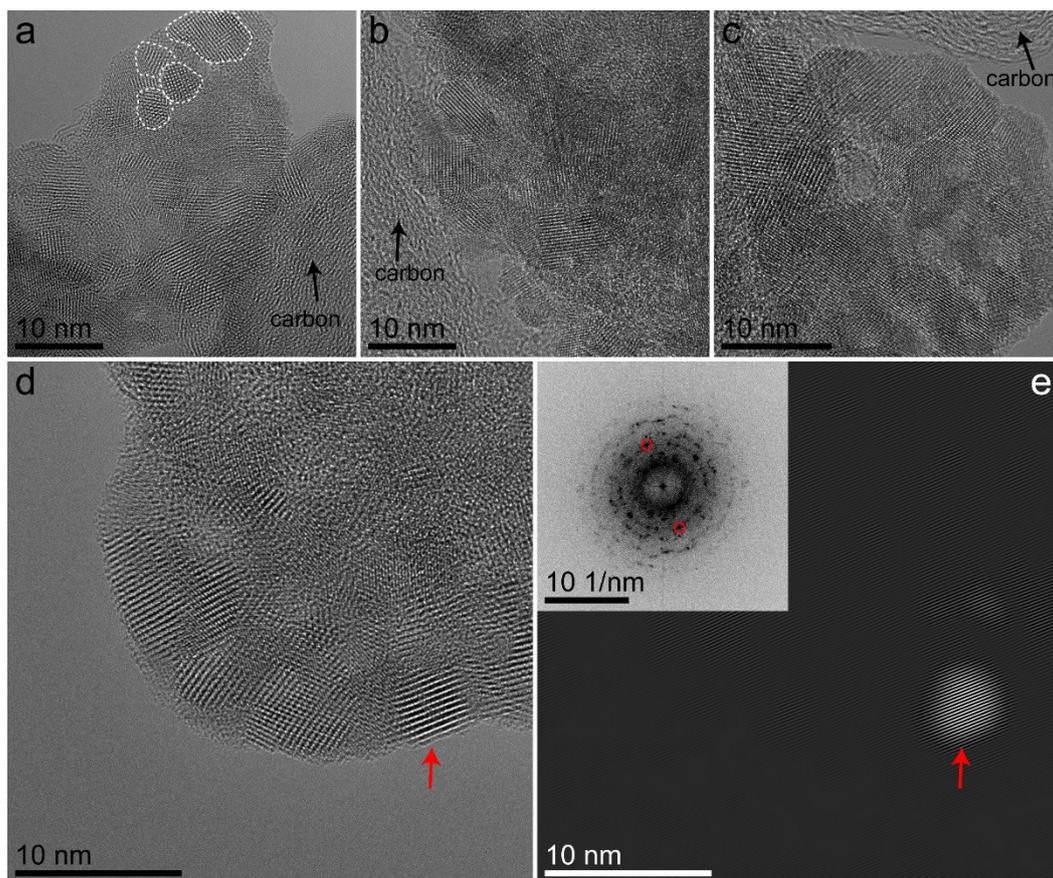
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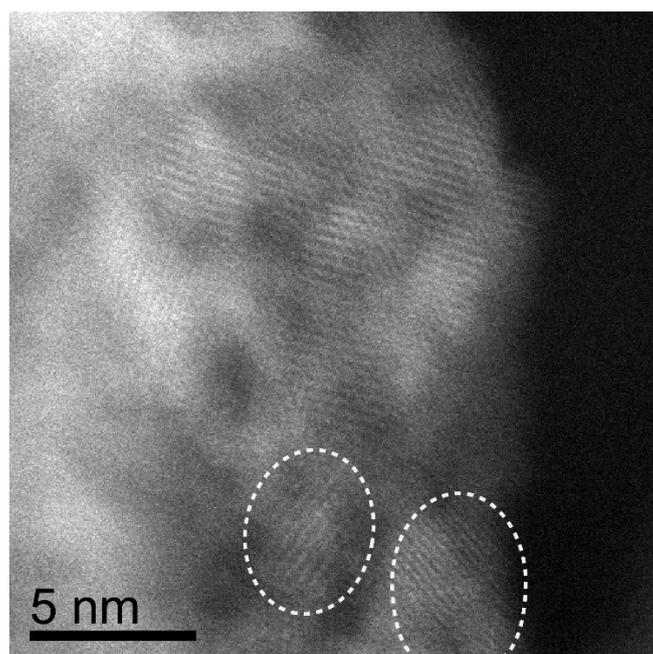
E-mail address: hda1@cornell.edu (Héctor D. Abruña), ysung@snu.ac.kr (Yung-Eun Sung)



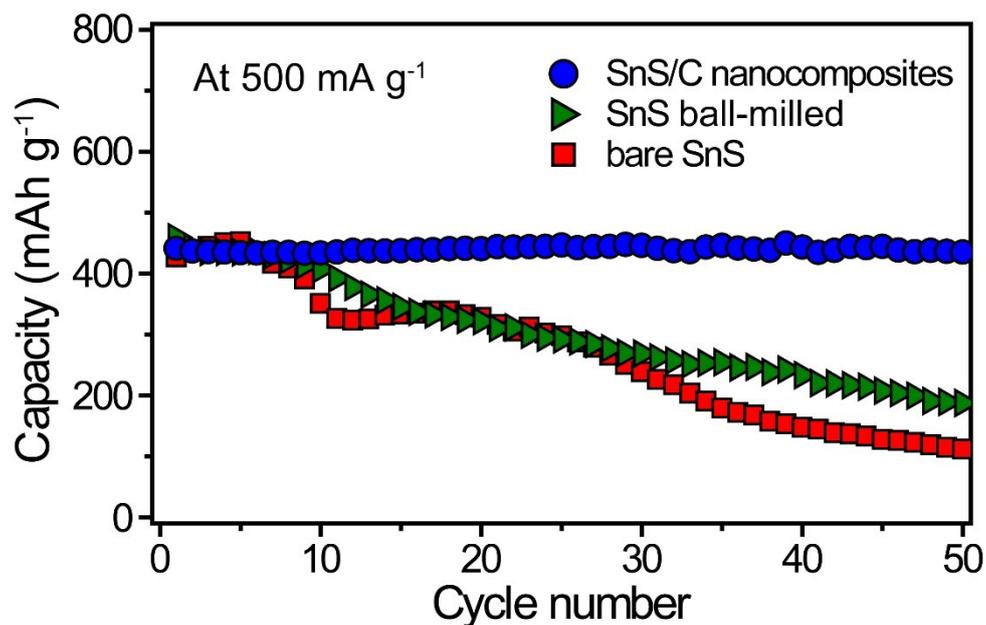
**Fig. S1.** XANES spectra of SnS/C nanocomposites (blue line), commercial SnS (red dots) and SnS<sub>2</sub> (green dash).



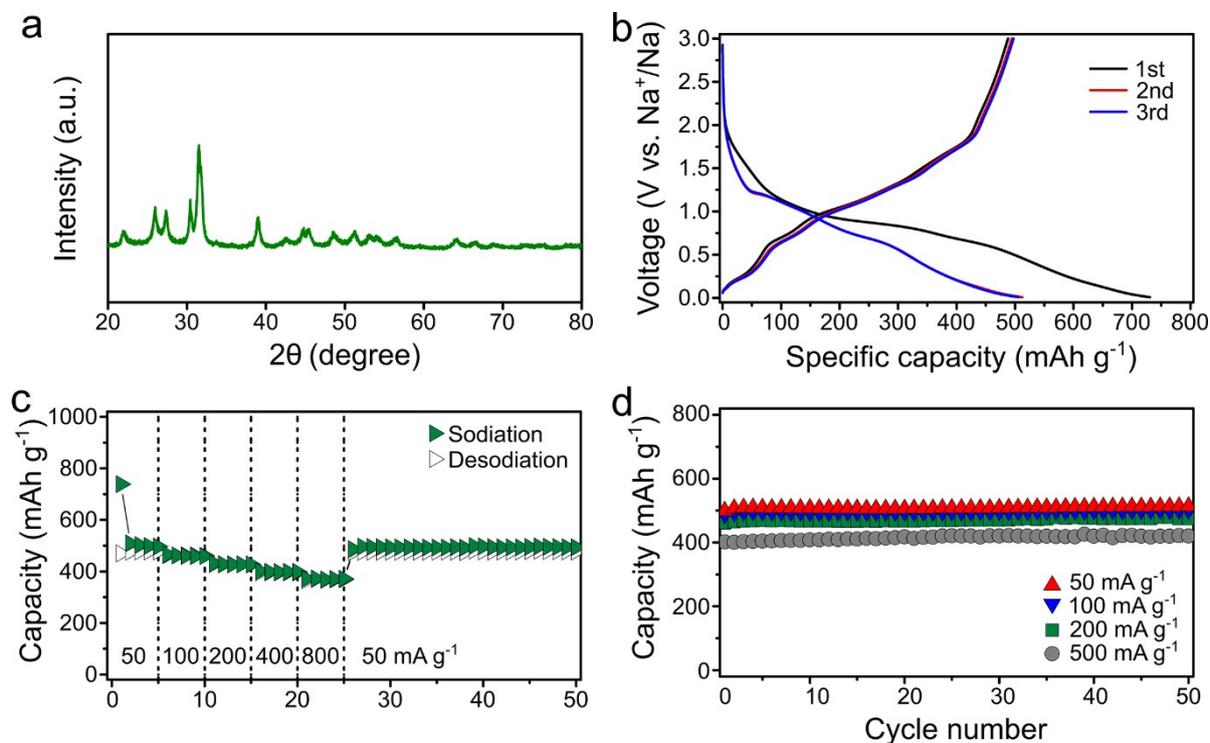
**Fig. S2.** (a)-(d) High-resolution TEM images of SnS/C nanocomposites, and (e) inverse fast Fourier transformed (FFT) image from the region circled by red in inset. Inset shows FFT image of (d).



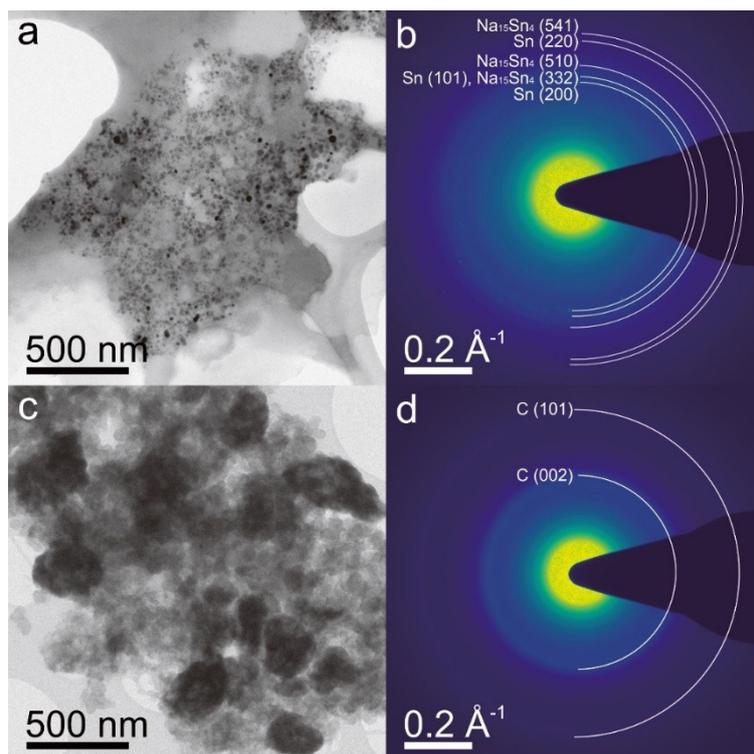
**Fig. S3.** STEM image of SnS/C nanocomposites.



**Fig. S4** Cycle performance of SnS/C nanocomposites, ball-milled SnS without carbon, and bare SnS at a current density of  $500 \text{ mA g}^{-1}$ .



**Fig. S5.** (a) XRD patterns of SnS/mesoporous carbon (CMK) nanocomposites prepared by ball-milling method. (b) Voltage profiles of SnS/CMK nanocomposites at a current density of  $100 \text{ mA g}^{-1}$ . (c) Rate performance of SnS/CMK nanocomposites. (d) Cycling performance of SnS/CMK nanocomposites at various current densities.



**Fig. S6.** (a) TEM image and (b) SAED pattern of SnS/C nanocomposites at fully sodiated state (0.01 V). (c) TEM image and (d) SAED pattern of SnS/C nanocomposites at fully desodiated state (3.0 V).