Electronic Supplementary Information (ESI) for

## Porous SnO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub> nanocubes with improved electrochemical

## performance for lithium ion batteries

## Yuan Yan, <sup>a</sup> Feihu Du, <sup>b</sup> Xiaoping Shen,<sup>a</sup>,\*Zhenyuan Ji, <sup>a</sup> Hu Zhou,<sup>c</sup> and Guoxing Zhu<sup>a</sup>

<sup>a</sup> School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang 212013, P. R. China
<sup>b</sup> School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University, Shanghai 200240, P. R. China.
<sup>c</sup> School of Material Science and Engineering, Jiangsu University of Science and Technology, Zhenjiang 212003, P. R. China

\*Corresponding author. E-mail: xiaopingshen@163.com



Fig. S1 TG profile of nanocubic Sn<sub>3</sub>[Fe(CN)<sub>6</sub>]<sub>4</sub> precursor.



Fig. S2 The differential capacity vs voltage of SnO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub> cell cycled at 200 mA g<sup>-1</sup>.



**Fig. S3** SEM images of the precursor  $Sn_3[Fe(CN)_6]_4$  obtained under different solvothermal temperatures: (a) 120 °C and (b) 180 °C.



**Fig. S4** Cycling performance of  $SnO_2$ -Fe<sub>2</sub>O<sub>3</sub> samples with Sn/Fe mole ratios of 7.26 (a) and 1.53 (b) at the current density of 2000 mA g<sup>-1</sup>.