Electronic Supplementary Information

α-Fe₂O₃-mediated growth and carbon nanocoating of ultrafine SnO₂ nanorods as anode materials for Li-ion batteries

Zhiyu Wang,^{ab} Zichen Wang,^a Srinivasan Madhavi,^{bc} and Xiong Wen (David) Lou*^{ac}

^a School of Chemical and Biomedical Engineering, Nanyang Technological University, 70 Nanyang Drive, Singapore, 637457. Email: <u>xwlou@ntu.edu.sg</u>

^b School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore, 639798

^c Energy Research Institute @ NTU, Nanyang Technological University,
50 Nanyang Drive, Singapore 637553 (Singapore)



Fig. S1 TEM images of the samples obtained in the absence of α -Fe₂O₃ substrates.



Fig. S2 Cyclic voltammograms (CVs) of SnO_2 nanorods without carbon coating, which are obtained between 0.05 - 3.14 V at a scan rate of 0.5 mV s⁻¹.



Fig. S3 Rate capability of SnO_2 nanorods with or without carbon coating. For both tests, the cut-off voltage window is 0.01 - 1.2 V.



Fig. S4 Cycling performance of SnO_2 hollow nanospheres. The test is carried out between 0.01 - 1.2 V at 0.2 C.