Supporting Information

Dual core-shell structured sulfur cathode composite synthesized by one-pot route for lithium sulfur battery

Chao Wang, a,b Wang Wan, a Ji-Tao Chen,* a Heng-Hui Zhou, a Xin-Xiang Zhang, a Li-Xia Yuan b and Yun-Hui Huang* b

a College of Chemistry and Molecular Engineering, Peking University, Beijing, P. R. China. Fax: 86-10-62754680; Tel: 86-10-62754680; E-mail: chenjitao@pku.edu.cn
b State Key Laboratory of Material Processing and Die & Mould Technology, School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhan, P. R. China. Fax: 86-27-87558241; Tel: 86-27-87558241; E-mail: huangyh@mail.hust.edu.cn

Fig. 1S TEM images of (a) MWCNT, (b, c) MWCNTs@S composite.
Fig. 2S Efficiency and discharge performance of MWCNTs@S at a current density of 2000 mA g\(^{-1}\).

Fig. 3S Electrochemical impedance spectroscopies of the MWCNTs@S@PPy before and after 60 cycles at 200 mA g\(^{-1}\).
Fig. 4S SEM image of the MWCNTs@S@PPy composite electrode (a) before and (b) after 200 charge and discharge cycles at a constant current density of 2000 mA g⁻¹.

Fig. 5S Photos of the MWCNTs@S and MWCNTs@S@PPy composites electrode after 200 charge and discharge cycles at a constant current density of 2000 mA g⁻¹ by regular camera.