Electronic Supplementary Information

Co_3O_4-based Binder-Free Cathodes for Lithium−Oxygen Batteries with Improved Cycling Stability

Shu-Mao Xu,‡ Qian-Cheng Zhu,‡ Fei-Hu Du, Xin-Hao Li, Xiao Wei, Kai-Xue Wang,* and Jie-Sheng Chen*

School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University, Shanghai 200240, China.

* To whom correspondence should be addressed. E-mail: k.wang@situ.edu.cn (KXW); chemcj@sjtu.edu.cn (JSC)

‡ Those authors contribute to this work equally.

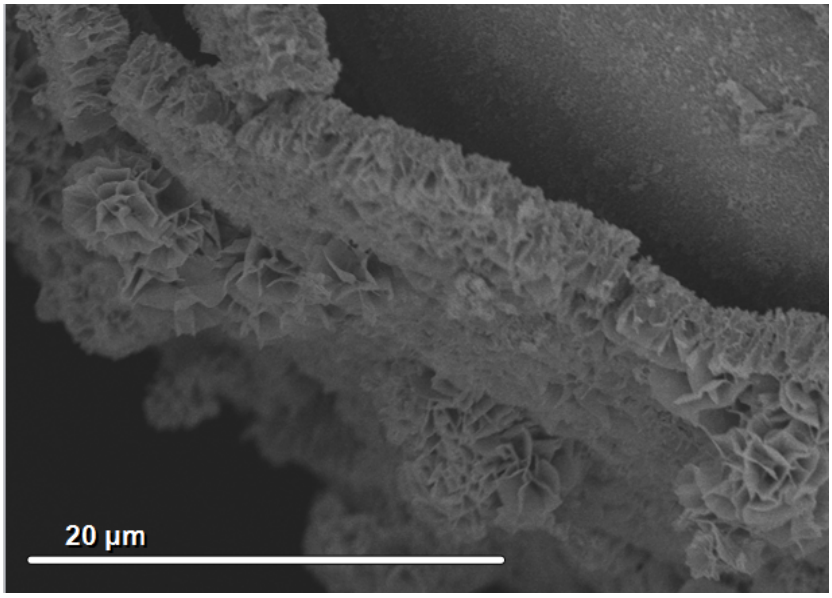

Figure S1 SEM images of Co_3O_4 layer directly electrodeposited on nickel foam (CN), showing the detachment of the layer from nickel foam. If using nickel foam without TiO_2 fiber mesh as the substrate, the Co_3O_4 layer generated would be peeled of the substrate easily.

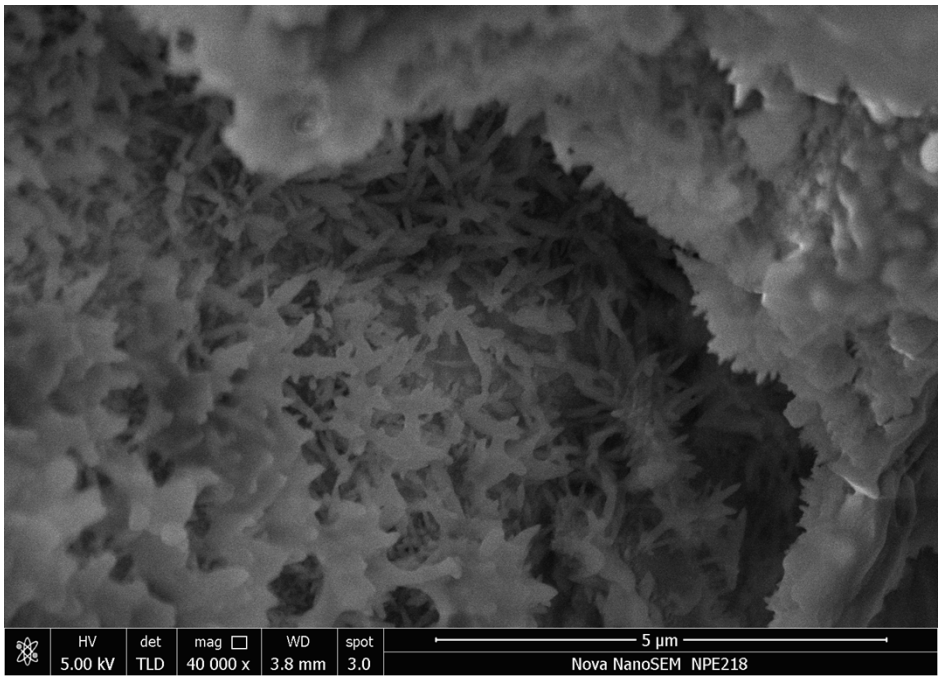

Figure S2 SEM image of CTN discharged/charged within a voltage window of 1.8 to 4.4 V at a current density of 200 mA g^{-1} for 80 cycles. Without the presecne of Co_3O_4 spheres, the electrochemically deposited Co_3O_4 layer would detach from the substrate, leading to the decrease of the capacity.