## **Supporting Information**

## Morphology and crystalline-controlled synthesis of MnO<sub>2</sub> hierarchical nanostructures and their application in lithium ion batteries

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Fig. S1 (a and b) SEM images of  $\delta$ -MnO<sub>2</sub> nanostructure obtained without the electrospun templates.



Fig. S2 The adsorption-desorption isotherms of M1, M2 and M3.



Fig. S3 Raman spectra of the  $\delta\text{-}MnO_2$  nanostructures.



Fig. S4 Electrochemical characterizations of  $\alpha$ -MnO<sub>2</sub> electrodes. (a) The 1st discharge/charge voltage-capacity profiles of the MnO<sub>2</sub> nanostructures at the current density of 0.1 A g<sup>-1</sup>. (b) The cycling stability of M2 and M3 electrodes at 0.1 A g<sup>-1</sup>.