## **Supplementary Information**

## LiNi<sub>1/3</sub>Co<sub>1/3</sub>Mn<sub>1/3</sub>O<sub>2</sub> hollow nano/micro hierarchical microspheres with enhanced performances as cathodes for Lithium-ion Batteries

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Figure S1. SEM image of MnCO<sub>3</sub> microspheres.



Figure S2. XRD pattern of MnCO<sub>3</sub> microspheres (JCPDS Card No.: 83-1763).



Figure S3. SEM image of MnO<sub>2</sub> microspheres.



Figure S4. XRD pattern of MnO<sub>2</sub> microspheres (JCPDS Card No.: 24-0735).



Figure S5. (a) XPS curves of NCM-HS. (b) Ni. (c) Co. (d) Mn.



Figure S6. The SEM image of NCM-bulk.



Figure S7. The TEM image of NCM-HS.



**Figure S8.** The first five cyclic voltammetric (CV) curves of NCM-HS cathode in the voltage range of 2.5–4.5 V at the scan rate of 0.1 mV s<sup>-1</sup>.