Supporting Information

Rationally Designed Hierarchical MnO_2@NiO Nanostructures for Improved Lithium Ion Storage

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Experimental section:

Synthesis of MnO_2: MnO_2 nanorods have been prepared by annealing obtained MnOOH nanorods under air at 400 °C for 2 h.

Synthesis of NiO: $Ni(NO_3)_2 \cdot 6H_2O$ (1.5 mmol) and urea (3 mmol) were dissolved into mixture of 20 mL deionized water and 20 mL ethanol. Then, the solution was transferred into Teflon autoclave and heated to 120 °C for 6h. The substrate was collected, washed with deionized water and dried at 60 °C overnight. The dry composite was then heated to 400 °C for 2 h in air to obtain NiO.

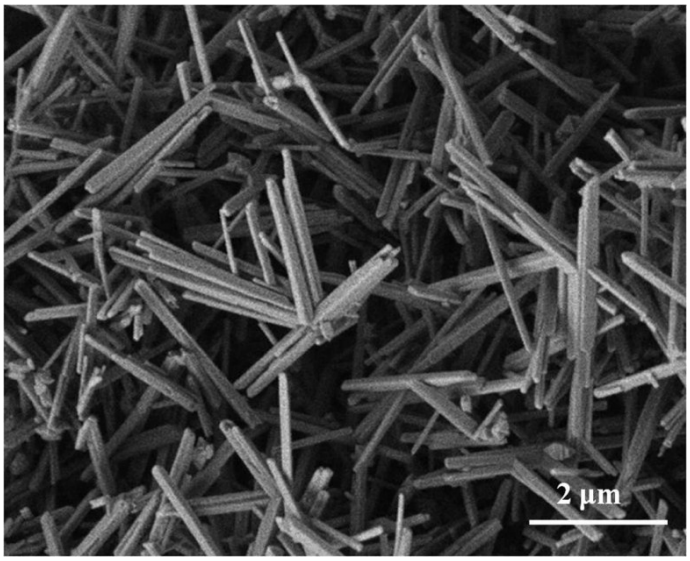
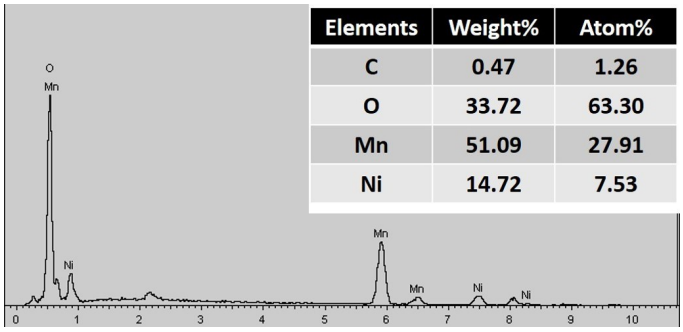


Figure S1. SEM image of MnOOH nanorods.



Elements	Weight%	Atom%
C	0.47	1.26
O	33.72	63.30
Mn	51.09	27.91
Ni	14.72	7.53

Figure S2. EDX spectra of MnO_2@NiO.

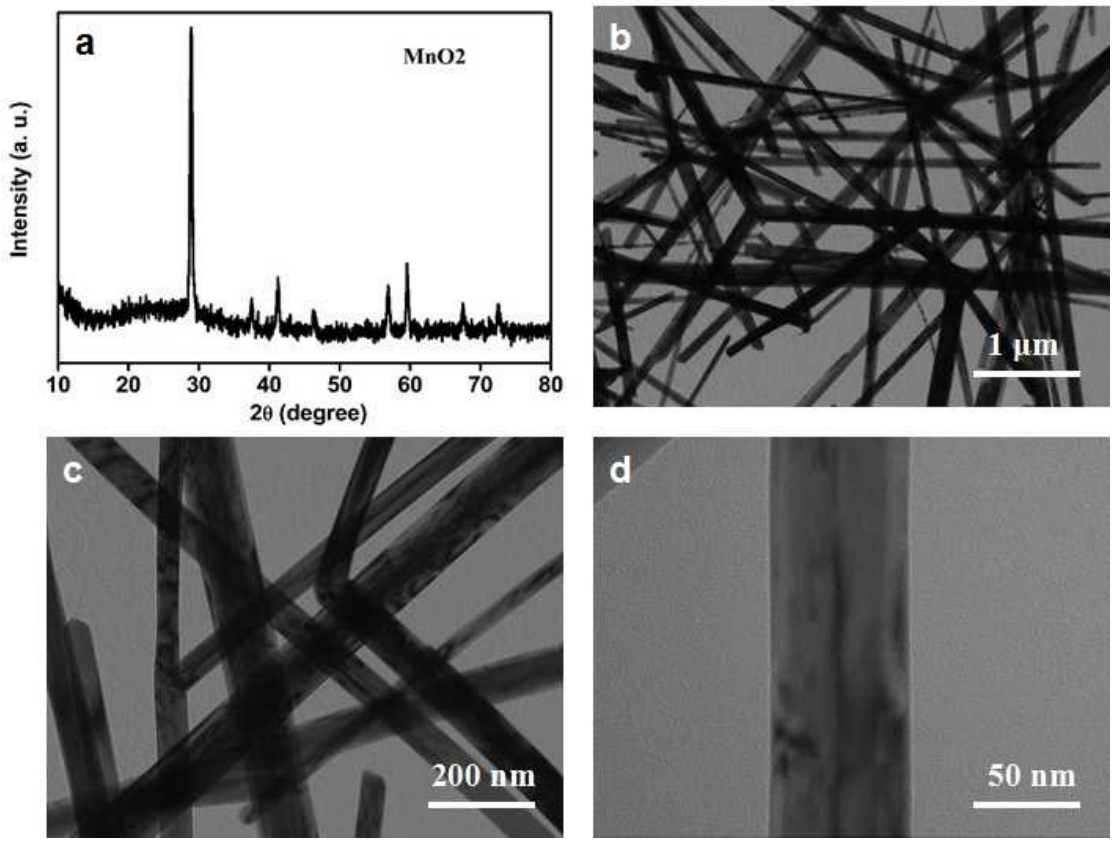


Figure S3. (a) XRD patterns and (b-d) TEM images of MnO_2 nanorods.

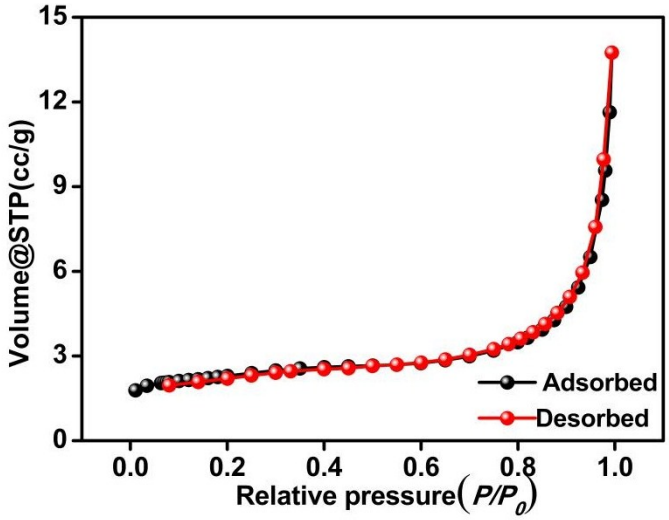


Figure S4. Nitrogen adsorption/desorption isotherms of MnO_2 nanorods.

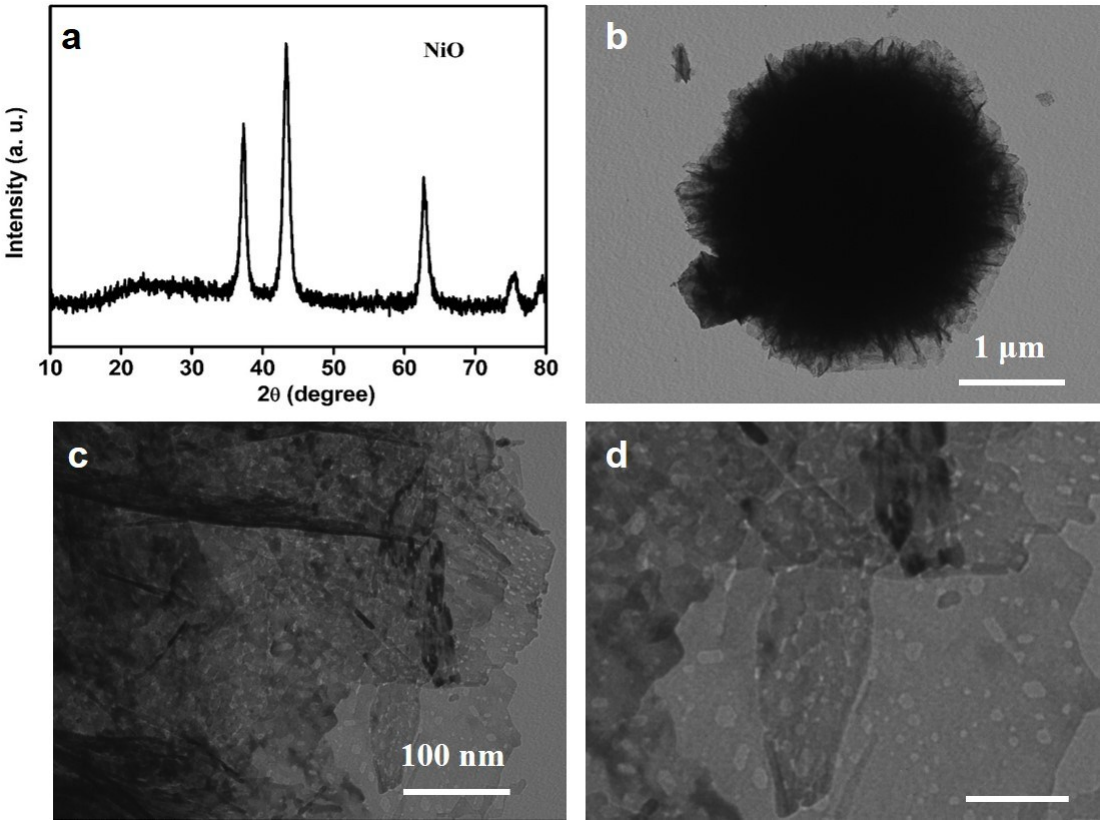


Figure S5. (a) XRD patterns and (b-d) TEM images of NiO flowers.

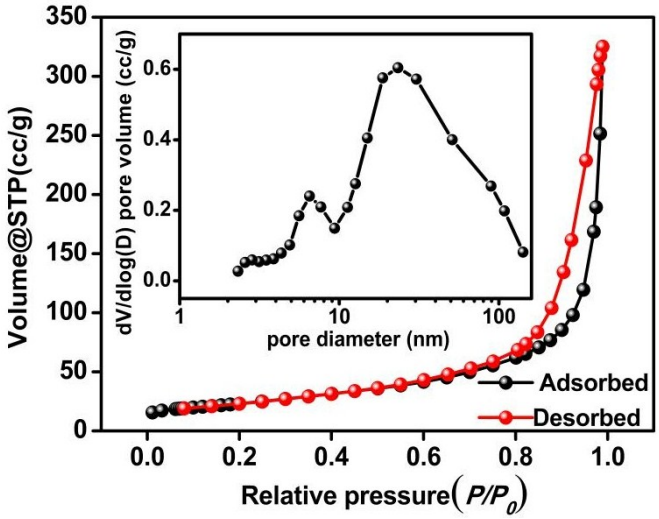


Figure S6. Nitrogen adsorption/desorption isotherms and pore size distribution (inset) of NiO.

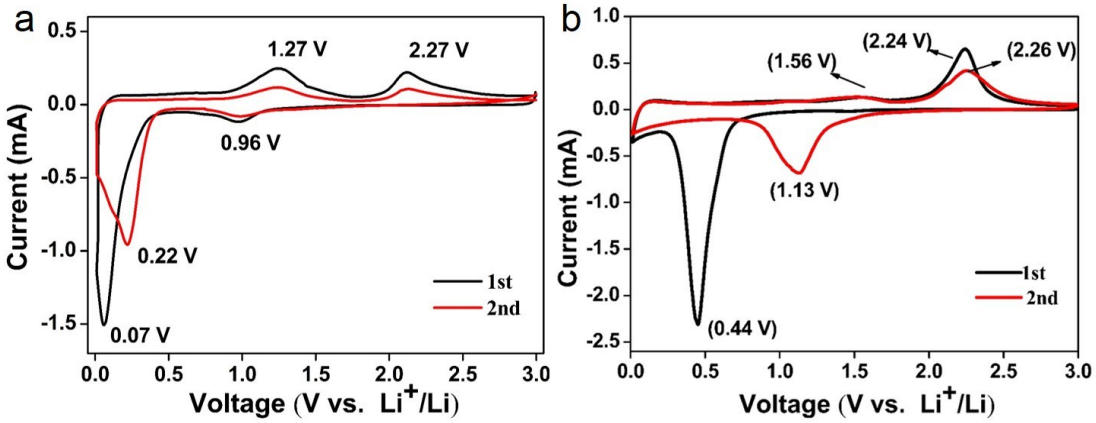


Figure S7. CV curves of the (a) MnO_2 and (b) NiO electrodes at a scanning rate of 0.1 mV s^{-1} in the range of 0.01 – 3 V.