Supporting Information

Core/shell TiO_2-MnO_2/MnO_2 heterostructure anodes for high-performance lithium-ion batteries

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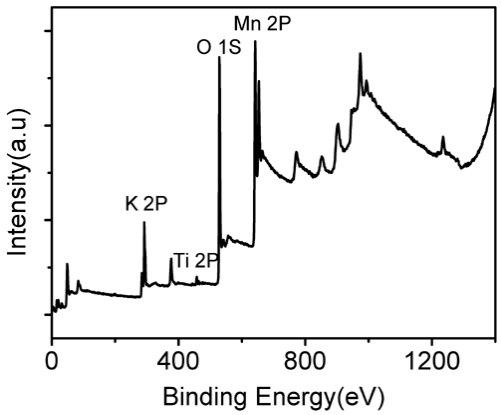

Fig. S1 XPS fully scanned spectra of core-shell TiO_2-MnO_2/MnO_2 heterostructures.

The peaks of O1s, Ti 2p, Mn 2p, Mn 3p3, K 2p are observed in Fig.S1, where a trace of K is introduced during the hydrothermal reaction, [1, 2] which is consistent with the observation of EDS (Fig. S3).

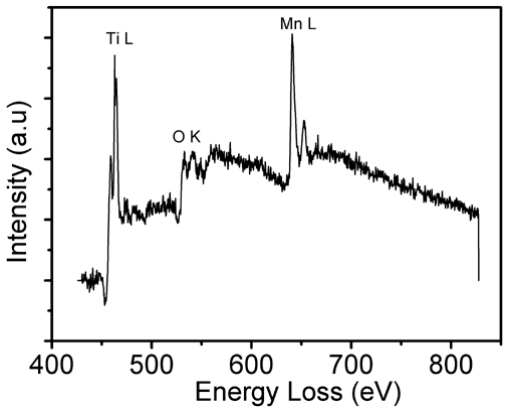

Fig. S2 EELS spectra of core/shell TiO_2-MnO_2/MnO_2 heterostructures.

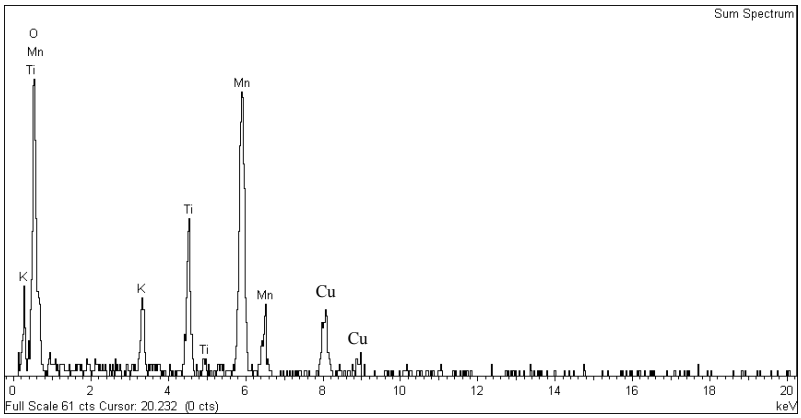

Fig. S3 EDS spectrum of core/shell TiO_2-MnO_2/MnO_2 heterostructures.

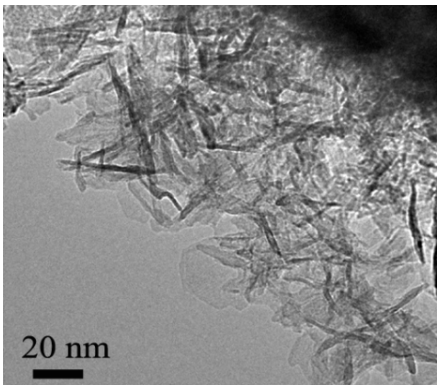

Fig. S4 TEM image of core/shell TiO_2-MnO_2/MnO_2 heterostructures.

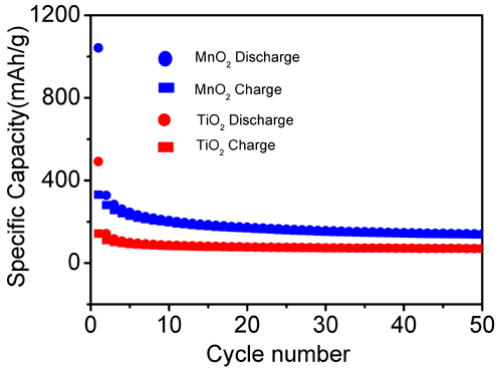

Fig. S5 Cycle performance of TiO_2 and MnO_2 at 0.1 A g^{-1}.

Table S1 Weight and atomic concentrations of Mn and Ti elements in TiO_2-MnO_2/MnO_2 nanofibers.

	Mn	Ti
Weight /%	71.65	28.35
Atomic /%	68.79	31.21

Table S2 Comparison of the capacities for various MnO_2-based electrodes

Material	Capacity /Current	Capacity/Current	Cycling life	Ref.
This work	888 mAh/g, 0.1 A/g	347 mAh/g, 1 A/g	500	
TiO_2-C/MnO_2	----------	332 mAh/g, 0.67 A/g	150	*Nano Lett.* **2013**, *13*, 5467.
MnO_2/CNT	500 mAh/g, 0.05 A/g	----------	16	*Nano Lett.*, **2009**, *9*, 1002.
Graphene-MnO_2	495 mAh/g, 0.1 A/g	----------	40	*J. Phys. Chem. Lett.* **2011**, *2*, 1855.
MnO_2-C	700 mAh/g, 0.1 A/g	----------	60	*ACS Appl. Mater. Interfaces* 2012, *4*, 2325.

REFERENCES

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(2) X. D. Zhao, H. M. Fan, J. Luo, J. Ding, X. Y. Liu, B. S. Zou and Y. P. Feng, *Adv. Funct. Mater.* 2011, **21**, 184-190.