

Supporting Information

An Interconnected Nanoflake Network Derived from a Natural Resource for High-Performance Lithium-Ion Batteries

*Fei Cheng, Wen-Cui Li, An-Hui Lu**

State Key Laboratory of Fine Chemicals, School of Chemical Engineering, Dalian University of Technology, Dalian 116024, P. R. China

Corresponding Author: An-Hui Lu

E-mail: anhuilu@dlut.edu.cn Phone/ fax numbers: +86-0411-84986112

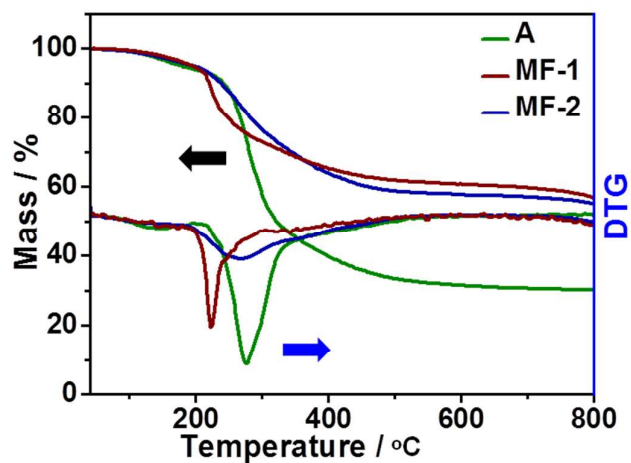


Figure S1. TG and DTG profiles of the samples. The measurements were conducted at a heating rate of $10\text{ }^{\circ}\text{C min}^{-1}$ in a nitrogen flow.

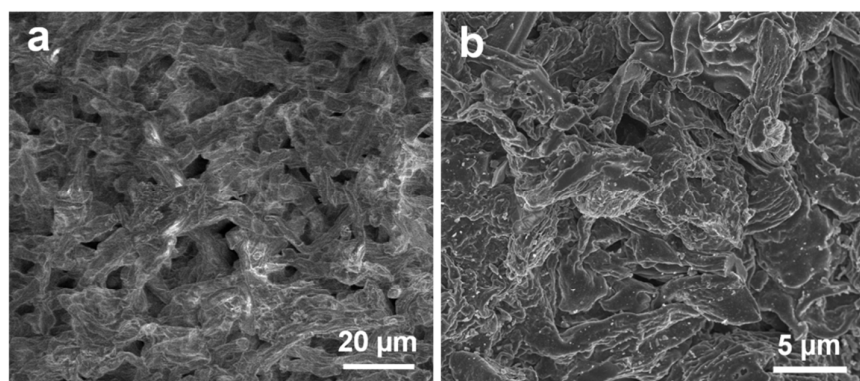


Figure S2. (a) SEM image of the dried auricularia. (b) SEM image of the carbon obtained from direct carbonization of auricularia.

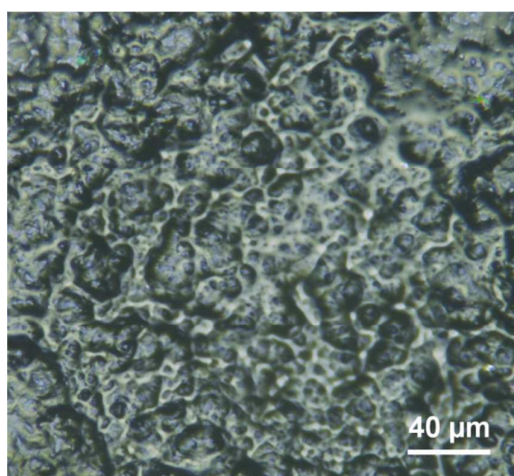


Figure S3. Super depth microscope image of the auricularia impregnated with MnCl_2 solution.

Table S1. Elemental analysis and TGA results.

Sample	Elemental analysis			TGA
	C (wt%)	N (wt%)	H (wt%)	MnO (wt%)
ADC	77.3	3.21	0.83	-
MFC-1	33.0	1.69	0.47	58.4
MFC-2	36.8	2.67	0.77	53.8

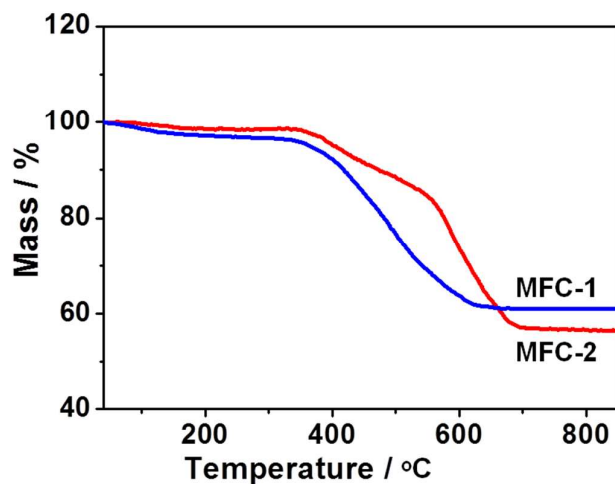


Figure S4. TGA curves of the MnO@C hybrids. The measurements were conducted at a heating rate of 10 °C min⁻¹ in an air flow.

Table S2. Performances of MnO@C anodes for LIBs.

Sample	Initial coulombic efficiency	Cycle number	Capacity at 0.2 A g ⁻¹ (mA h g ⁻¹)	Rate capacity (mA h g ⁻¹)	Ref
MnO@C nanoflake network	69% (0.2 A g ⁻¹)	500	868	668 (1 A g ⁻¹) 571 (2 A g ⁻¹) 388 (4 A g ⁻¹)	This study
GNs/MnO nanowires	60.5% (0.1 A g ⁻¹)	200	723	285 (2.5 A g ⁻¹)	9
Microparticulate porous MnO@C	56% (0.1 A g ⁻¹)	100	479	238 (0.8 A g ⁻¹)	18
MnO/C nanorod	54.9% (0.1 A g ⁻¹)	100	721	371 (1.6 A g ⁻¹)	19
MnO/C microsheets	62.9% (0.1 A g ⁻¹)	50	598	323 (2 A g ⁻¹)	20
Hollow porous MnO/C microsphere	71% (0.1 A g ⁻¹)	50	600	315 (3 A g ⁻¹)	27
MnO/C microtubes	61.5% (0.2 A g ⁻¹)	60	610	350 (1.6 A g ⁻¹)	29