

Supplementary information

MnO Modified Carbon Nanotubes as Sulfur Host with Enhanced Performance in Li/S Batteries

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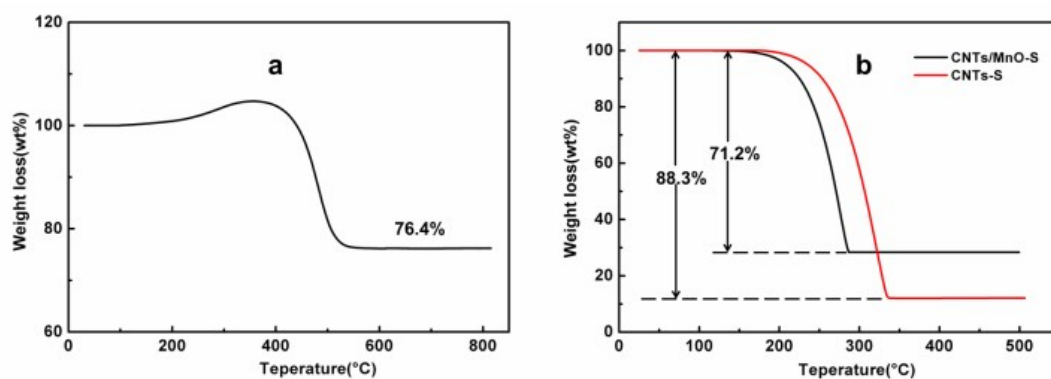


Fig. S1 TGA result curves. (a) CNTs/MnO measured under O₂, the mass first have first increased because MnO got oxidized to Mn₂O₃ and then decreased as the carbon burned; the remained weight was regarded as Mn₂O₃ thus to calculate an original carbon content as 31.4%. (b) CNTs/MnO-S and CNTs-S measured under N₂, the lost weights have given the sulfur loadings as 71.2% and 88.3%, respectively, so that their C/S ratio can be calculate both around 1:8.

Table S1 The capacities of two cathodes in first discharge at different current densities.

Current density*	CNTs@MnO-S (mAh g ⁻¹)				CNTs-S (mAh g ⁻¹)			
	<i>Q</i>	<i>Q</i> ₁	<i>Q</i> ₂	<i>Q</i> ₂ / <i>Q</i> ₁	<i>Q</i>	<i>Q</i> ₁	<i>Q</i> ₂	<i>Q</i> ₂ / <i>Q</i> ₁
0.1 C	1308	361	947	2.62	1265	383	882	2.30
0.2 C	1236	343	893	2.60	1110	326	784	2.40
0.5 C	1121	327	794	2.43	1011	322	689	2.14
1.0 C	1051	320	731	2.28	906	300	606	2.02
2.0 C	915	312	603	1.93	747	290	457	1.58
5.0 C	716	265	451	1.70	415	205	210	1.02

* 1 C = 1.68 A g⁻¹.

Table S2 The R_{ct} variation during the 1st discharge at different discharging depth for the two electrodes.

CNTs/MnO-S		CNTs-S	
Discharging depth (%)	R_{ct} (ohm mg ⁻¹)	Discharging depth(%)	R_{ct} (ohm mg ⁻¹)
0	52.86408	0	51.44578
8.4	14.6068	9.7	10.07229
18.7	9.02913	20.8	7.11647
34	7.21845	30.9	6.72289
58.5	11.0534	55.5	6.97189
77.6	19.05825	77.2	11.21687
83.9	23.68932	90.2	21.14056
100	61.45631	100	50.88353

*In this discharging process, the terminated potential was always set as 1.7 V and the current was 0.5 C