Supporting Information

Hierarchical Fe_2O_3@CNF Fabric Decorated with MoS_2 Nanosheets as Robust Anode for Flexible Lithium-ion Battery Exhibiting Ultrahigh Areal Capacity

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Keywords: Flexible lithium-ion battery, MoS_2, Fe_2O_3@CNFs, High capacity anode

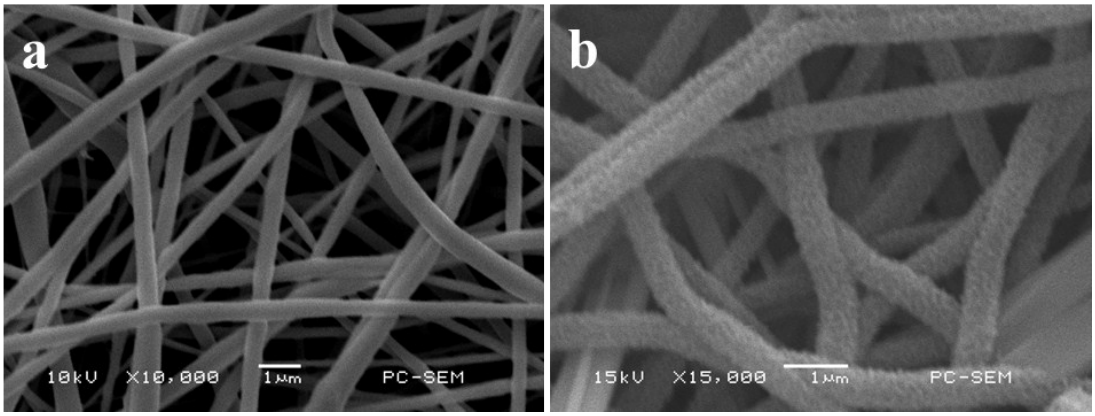

Fig. S1. The SEM images of (a) CNF and (b) CNF@MoS_2

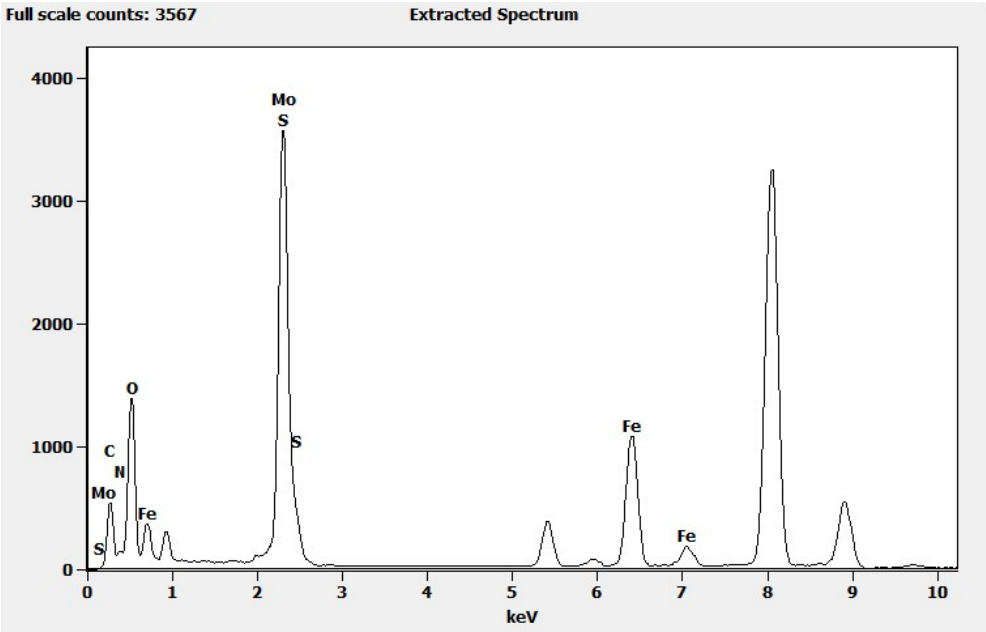

Fig. S2. The energy-dispersive X-ray spectroscopy (EDX) spectrum of various elements for Fe_2O_3@CNFs@MoS_2

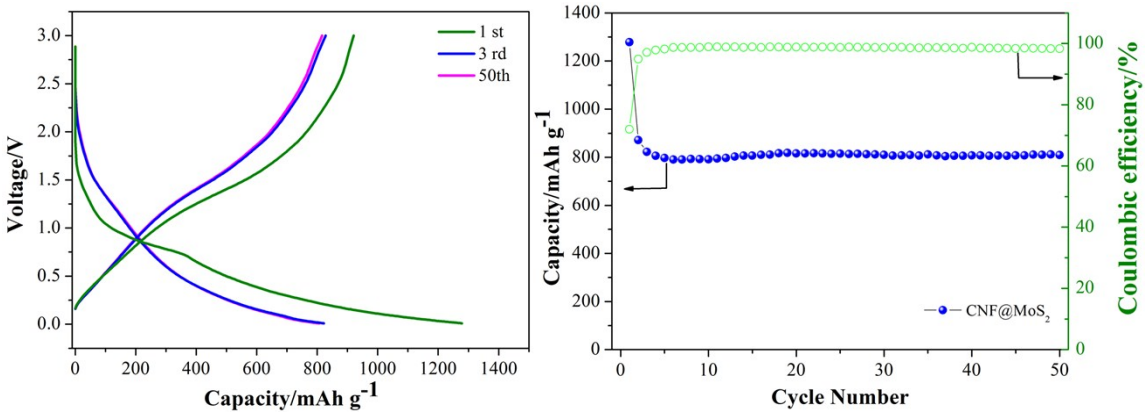

Fig. S3. (a)The charge–discharge curves of CNF@MoS_2 at a current density of 0.2 A g^{-1} and (b) cycling performance and coulombic efficiency of CNF@MoS_2 at a current density of 0.2 A g^{-1}.

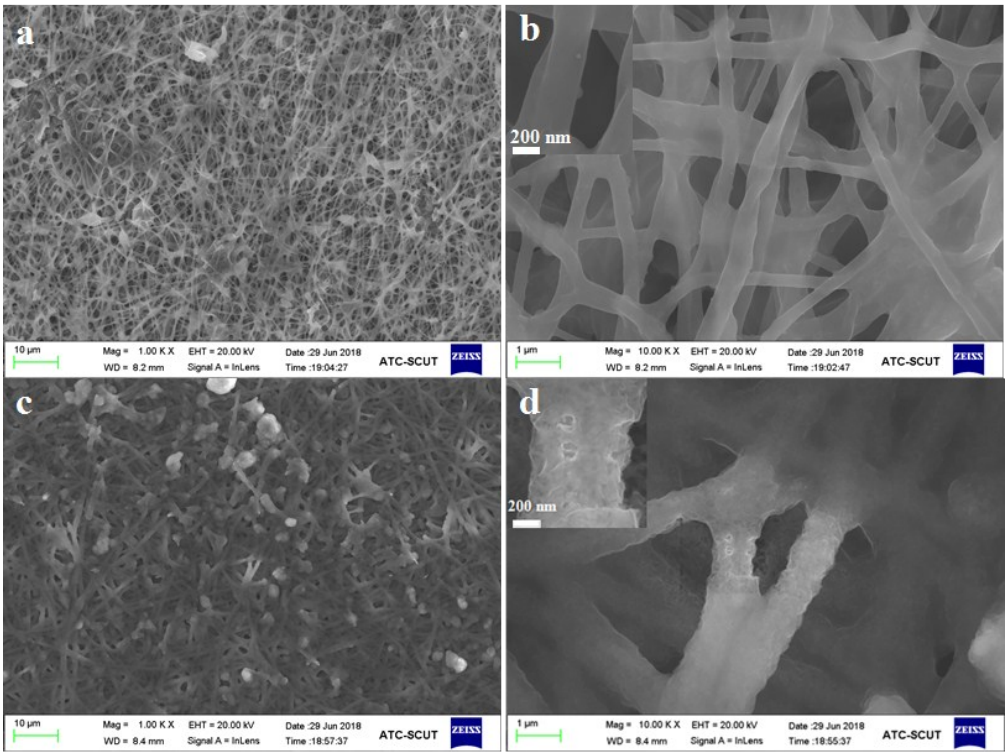

Fig. S4. SEM images for (a-b) Fe_2O_3@CNFs and (c-d) Fe_2O_3@CNFs@MoS_2 fabric electrode after 50 cycles.

Table S1. The quantitative results of various elements for Fe_2O_3@CNFs@MoS_2

Element Line	Net Counts	Weight %	Atom %
C K	3772	12.38	30.95
N K	1431	2.96	6.34
O K	10640	12.27	23.04
S K	31798	21.94	20.55
Fe K	17966	14.71	7.91
Mo K	11369	35.74	11.19
Total		100.00	100.00

Table S2. Comparison of electrochemical performance of similar materials which were reported previously

Materials	1st capacity ($mAh\ g^{-1}/mA\ g^{-1}$)	Cycle capacity ($mAh\ g^{-1}$/cycles/$mA\ g^{-1}$)	Rate Capacity ($mAh\ g^{-1}$/cycles/$mA\ g^{-1}$)	Electrode	reference
γ-Fe_2O_3@CNTs	1653.4/100	860/400/500	464.4/210/10000	Powder	[1]
Fe_2O_3-CNF	1214/200	820/100 /200	262/65/5000	Flexible	[2]
Fe_2O_3-Carbon cloth	1300/200	99/100/5000	59/60/10000	Flexible	[3]
Fe_2O_3/CNFs	1008/50	488/75/50	288/100/500	Flexible	[4]
CNFs@MoS_2	1489/100	688/300/1000	864/60/5000	Powder	[5]
PCNF@MoS_2	954/50	736/50/50	532/25/1000	Flexible	[6]
MoS_2-cBC	1313/100	581/1000/1000	267/50/4000	Flexible	[7]
MoS_2–r-GO–PEO	1240/100	890/100/100	600/40/1000	Flexible	[8]
CNF@MoS_2-GO	1225/200	680/250/500	780/32/2500	Flexible	[9]
MoS_2/ACF cloth	1262/200	635/200/200	441/45/1500	Flexible	[10]
Fe_2O_3@CNFs@MoS_2	1465/200	938/300/200	304/60/5000	Flexible	This work

References

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