Electronic Supplementary Information (ESI) for

Ultrafine Mo-doped SnO_2 Nanostructure and Derivative Mo-doped Sn/C Nanofibers for High-Performance Lithium-ion Batteries

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Supporting Materials

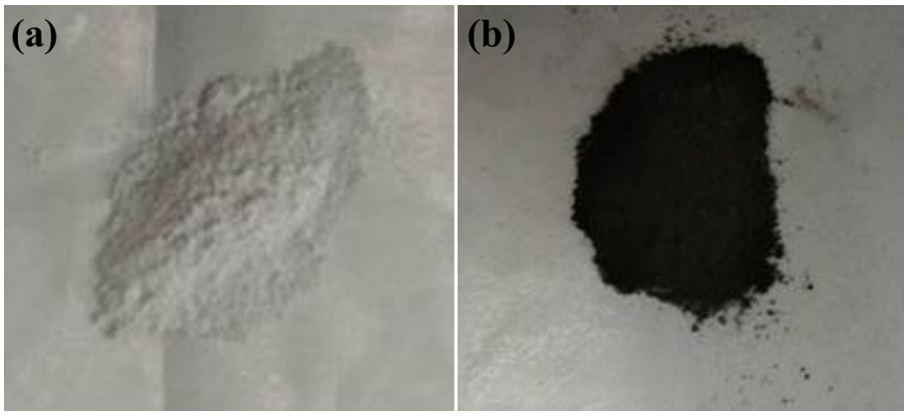

Fig. S1 Digital pictures of the SnO_2 (a) and Mo-doped SnO_2 NPs (b). Mo-doping endue SnO_2 present a black color, which is much different from standard white SnO_2.

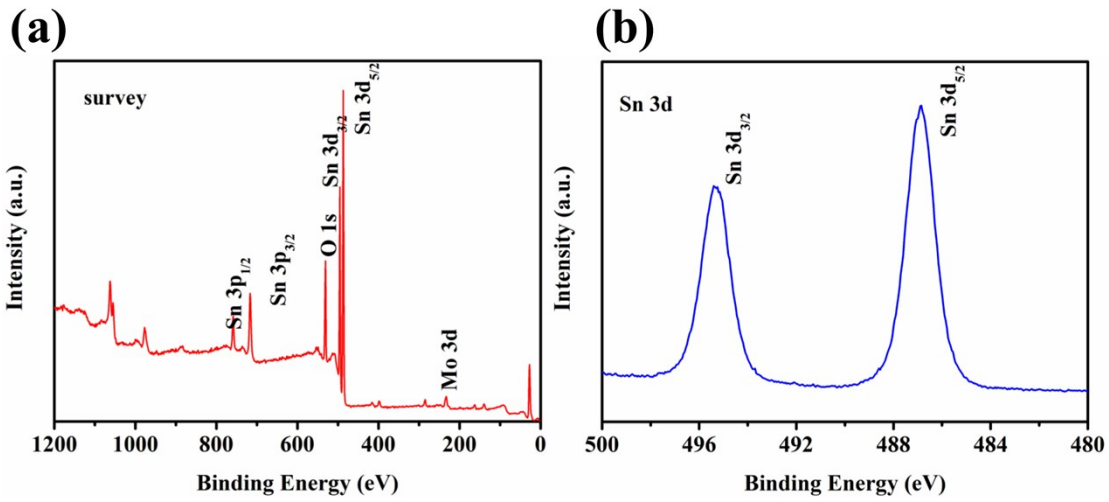

Fig. S2 XPS spectra of Mo-doped SnO_2 sample: (a) survey spectrum and (b) Sn 3d.

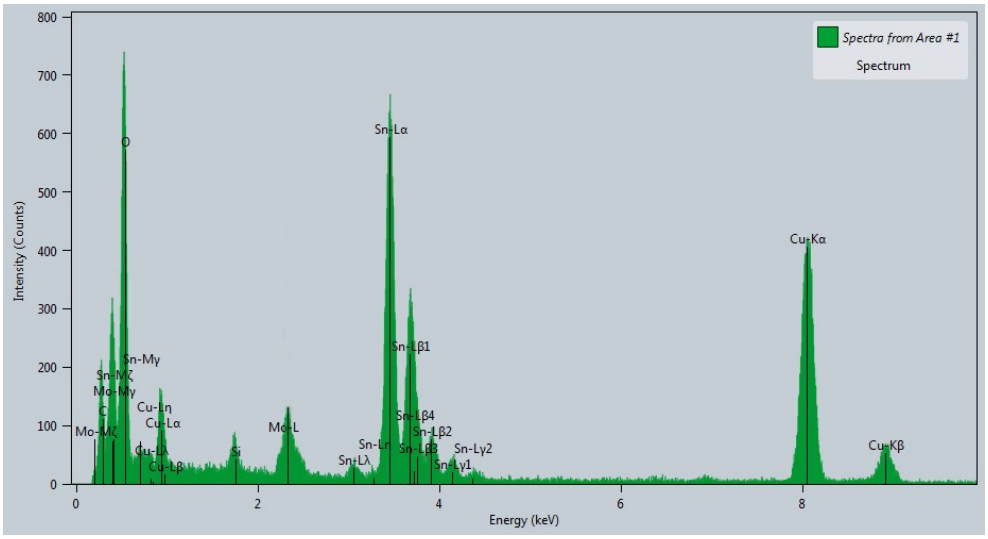

Fig. S3 EDX pattern of the Mo-doped SnO_2 NPs, implying a 3.6 wt% contnt of Mo.

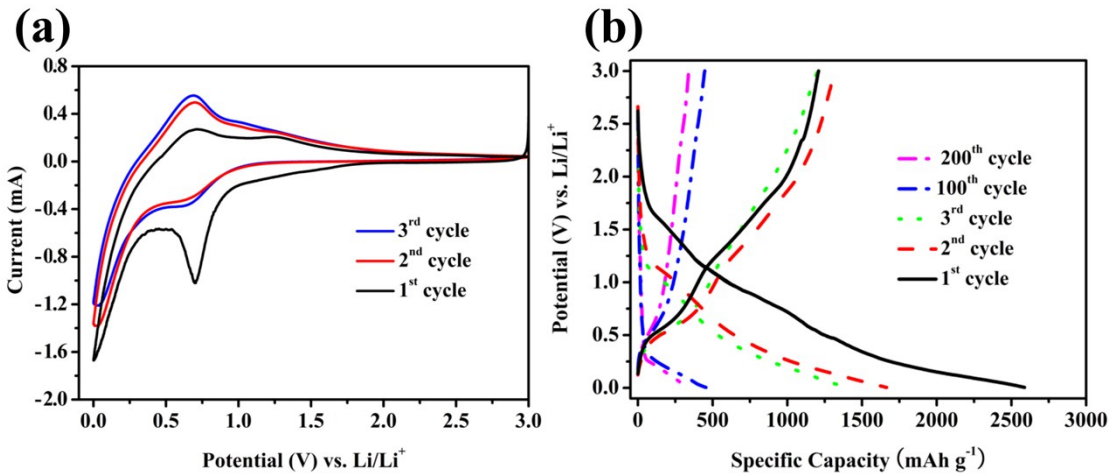

Fig. S4 (a) CV curves and (b) charge-discharge profiles of cells with pure SnO_2 anode.

Table S1 Summary of capacities of various doping SnO_2 anodes and this work.

Doping SnO_2	Current density (mA/g)	Specific Capacity (mAh/g)	Potential range	Ref.
Sb doped SnO_2 microspheres	156	194 (after 50 cycles)	0.005-3.0	1
Bowl-like SnO_2@Carbon Particles	400	963 (after 100 cycles)	0.005-3.0	2
Multilayer Zn-doped SnO_2 nanospheres	1000	446 (after 1000 cycles)	0.01-2.5	3
C/Cr-SnO_2/G	100	611 (after 200 cycles)	0.01-3.0	4
Ti-doped SnO_2/RGO	100	470 (after 200 cycles)	0.01-3.0	5
Sb-doped SnO_2/ graphene-CNT aerogels	1000	685 (after 1000 cycles)	0.005-3.0	6
Antimony-Doped SnO_2 Nanopowders	156	637 (after 100 cycles)	0.005-3.0	7
Mo-doped SnO_2 Hollow Spheres	100	801 (after 60 cycles)	0.01-3.0	8
In-doped SnO_2 Nanocrystalline	500	500 (after 10 cycles)	0.005-3.0	9
Mo-doped SnO_2 nanoparticle	500	670 (after 700 cycles)	0.005-3.0	This work

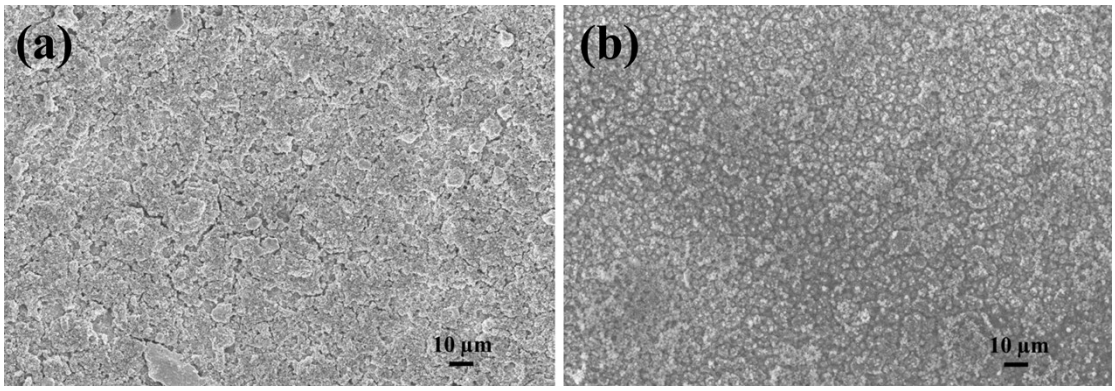

Fig. S5 SEM images of Mo-doped SnO_2 electrode: (a) before and (b) after 50 cycles.

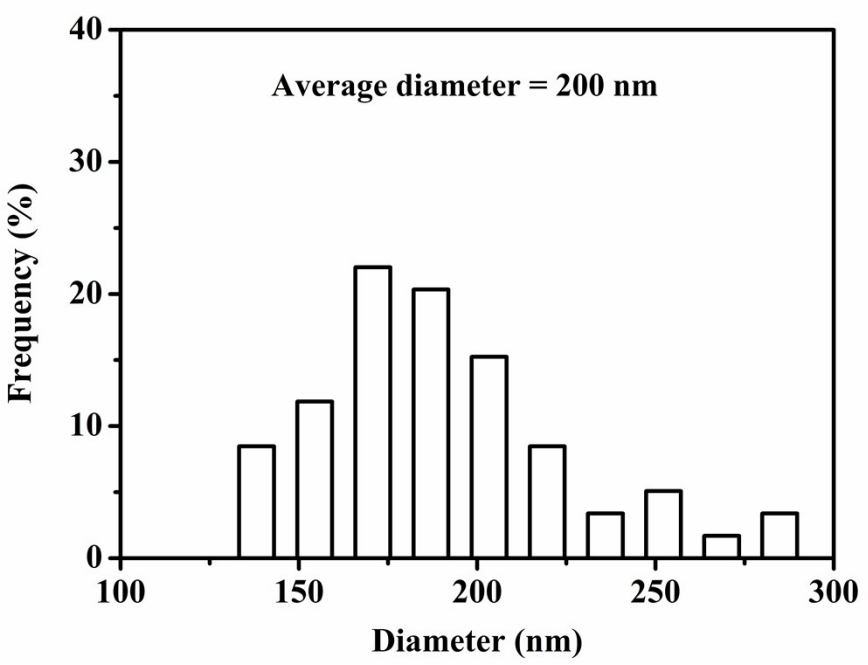

Fig. S6 Diameter distribution chart of the SMCNFs; the average diameter is about 200 nm.

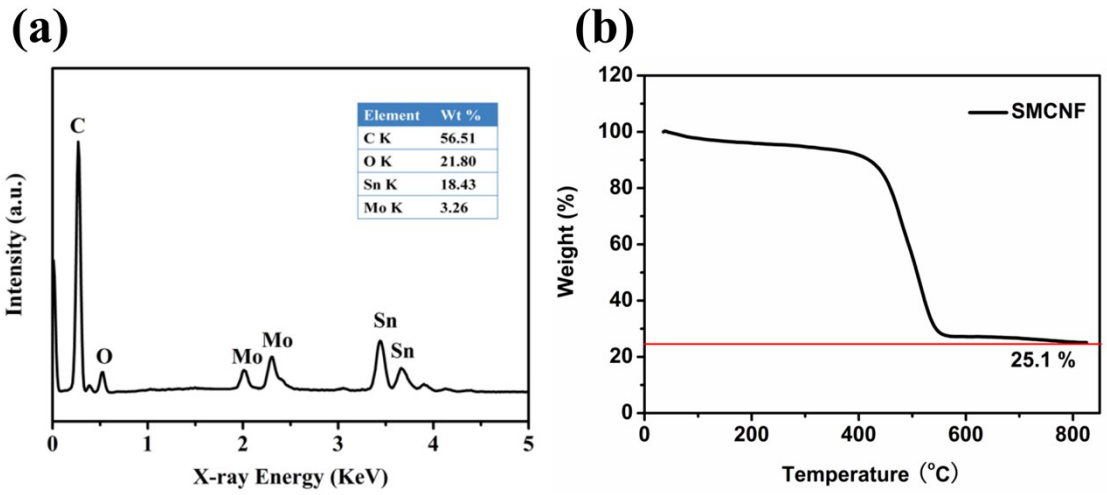

Fig. S7 (a) EDS spectrum and (b) TGA curves of SCNFs sample.

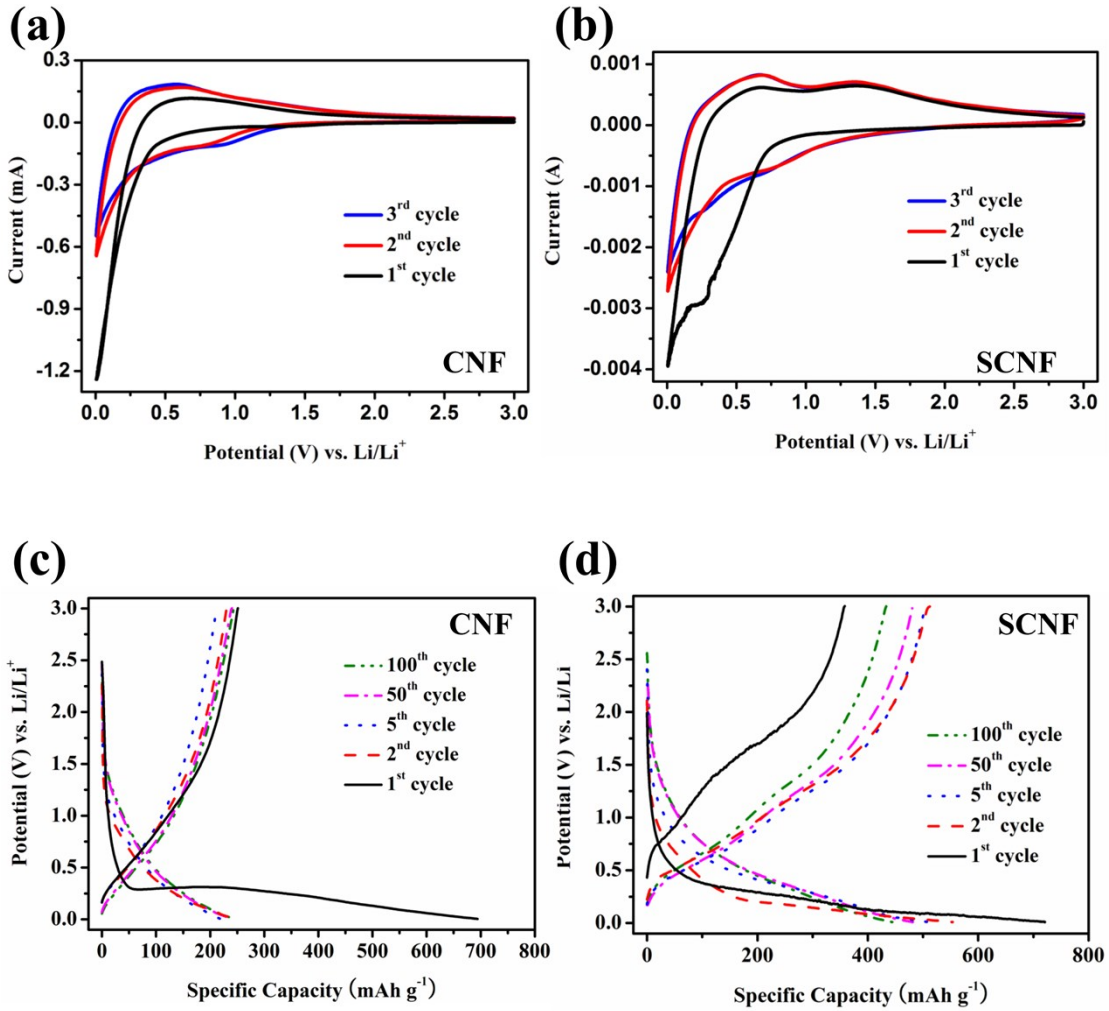

Fig. S8 CV curves of the cells with CNF anode (a) and cells with SCNF anode (b); charge-discharge profiles of cells with with CNF anode (c) and cells with SCNF anode (d).

Table S2 Comparison of electrochemical performance of SMCNF anode in this work and other Sn-based/carbon nanofiber anode

Material	Current density (mA/g)	Specific Capacity (mAh/g)	Cycles	Ref.
Sn/SnOx/CNF	30	510	40	10
Sn/C nanofibers	50	457	50	11
Co–Sn alloy/carbon nanofibers	161	560	80	12
Ni-Sn/Carbon Nanofibers	500	641	100	13
Sn/carbon nanofiber	75	741.1	40	14
Sn NP-dispersed in carbon nanofibers	25	450	30	15
Sn NP/Carbon nanofiber	200	460	200	16
Mo-doped Sn/carbon nanofiber	500	617	200	This work

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