Supporting Information

Sr-dopant Microstructure Engineering Enables High Pseudocapacitive Effects of $TiNb_2O_7$ Anode for Fast-Charging Lithium-Ion Batteries

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Contents

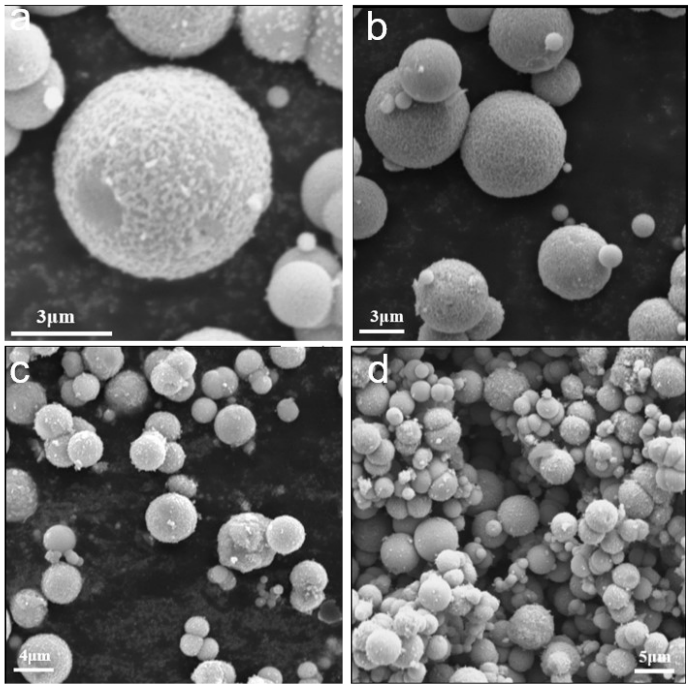

Fig. S1 high-magnification FESEM of the TNO (a,b), Sr-$_{0.005}$-TNO (c) and Sr-$_{0.015}$-TNO (d).

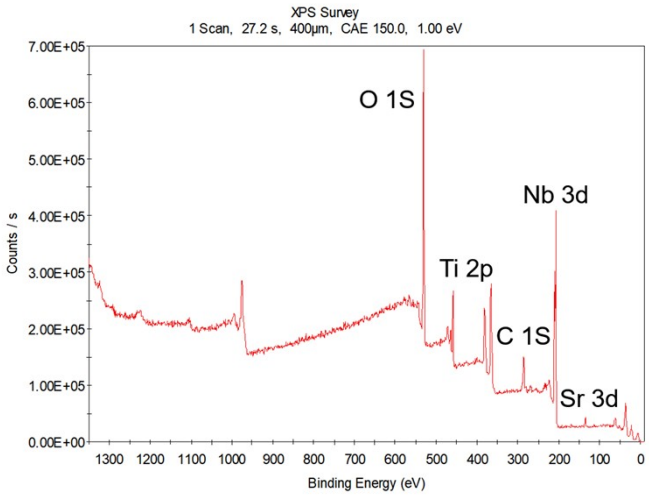

Fig. S2 The full XPS spectra of Sr-0.01TNO.

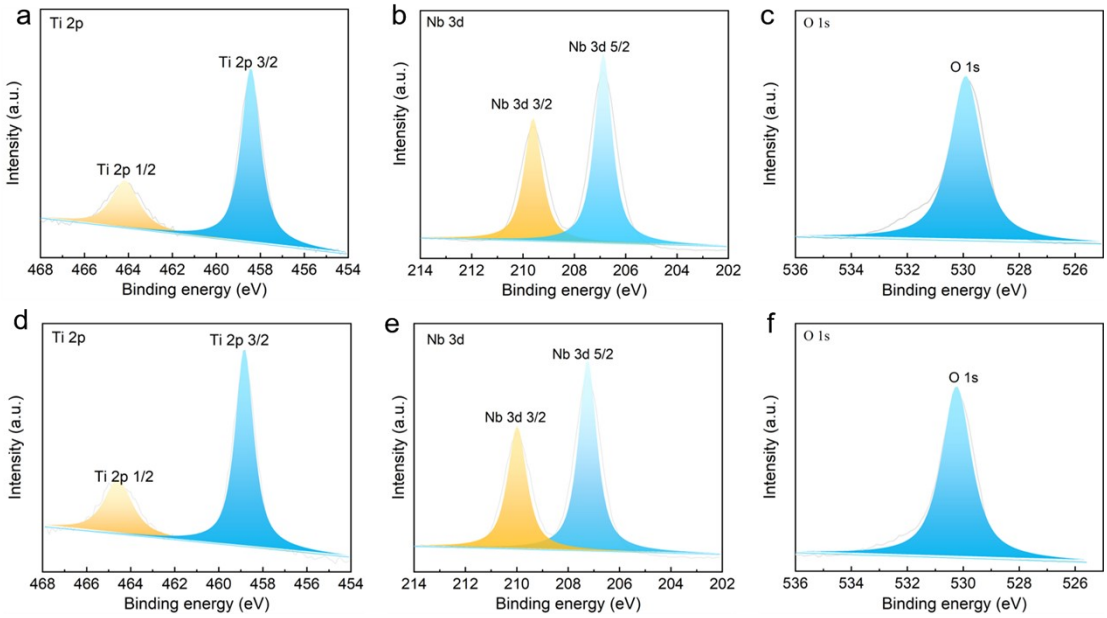

Fig. S3 XPS spectra of TNO for Ti 2p (a), Nb 3d (b) and O1s (c); XPS spectra of $Sr_{0.01}$-TNO for Ti 2p (d), Nb 3d (e) and O1s (f).

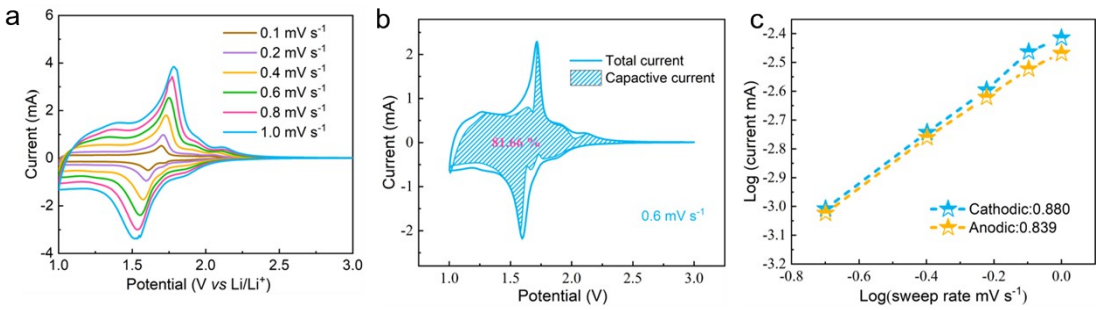

Fig. S4 The kinetic analyses of the TNO: (a) CV profiles at different rates, (b) the ratio of pseudocapacitance at 0.6 mV s^{-1}, (c) b value.

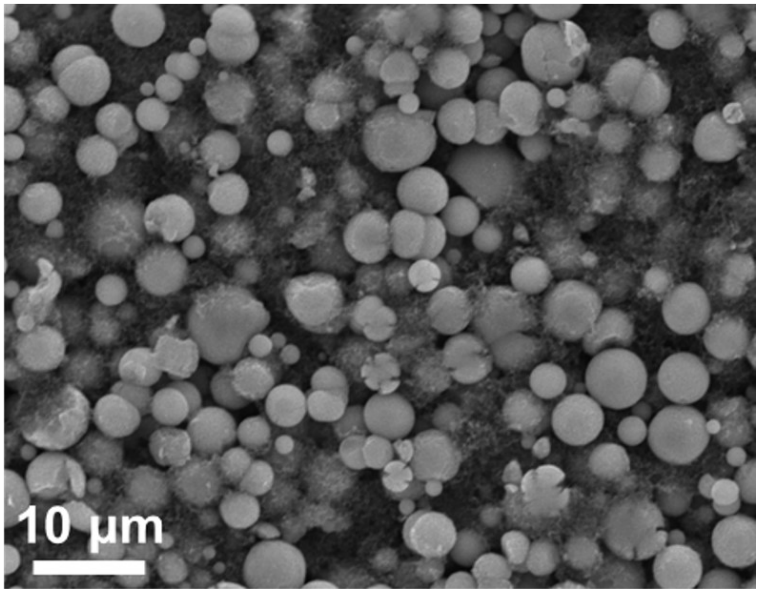

Fig. S5 SEM image of $Sr_{0.01}$-TNO electrode before cycling.

Table S1. The corresponding elemental data of the $Sr_{0.01}$-TNO materials in the XPS survey scanning spectrum.

Name	Atomic %
C1s	20.41
Nb3d	12.9
O1s	57.15
Sr3d	0.8
Ti2p	8.74

Table S2. The electrochemical performance parameters and details of the previous works.

Material	0.2 C	0.5 C	1.0 C	2.0 C	5.0 C	10 C	20 C	40 C	References
$Sr_{0.01}$-TNO	257	252	246	240	229	220	208	190	This work
W^{6+}-TNO	—	258	249	240.3	—	—	156.2	—	[20]
$Zr_{0.05}$-TNO	—	260	248.5	235	209.3	177.8	99	—	[37]
$Ti_{0.99}V_{0.01}Nb_2O_7$	275	260	243	194	—	—	—	—	[38]
$Sn_{0.01}$-TNO	—	243	218	198	164	138	—	—	[39]
Mo-TNO	—	264	250	239	225	213	—	—	[40]
Al-TNO	—	275	261	247	225	207	178	—	[41]
$TiNb_2O_7$ microspheres	—	270	260	240	165	150	110	—	[42]
$TiNb_2O_7$@C Spheres	—	270	255	240	210	160	—	—	[43]
d-H-Nb_2O_5	—	225	210	195	175	160	135	—	[44]
N-doped-TNO	—	260	248	229	195	151	—	—	[45]