Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

Glucose-assisted synthesis of SnS_x coated lithium titanate anode material for lithium ion battery

Ting Xu[a], Fang Xiang Song[a], Xiang Feng Zhao[a], Li Ju Zhou[a], Qian lin Chen[a,b,*]

*Corresponding authors at: School of Chemistry and Chemical Engineering, Guizhou University, Guiyang, 550025, China.

* Corresponding authors.

E-mail: cql1018@163.com (Q. Chen).

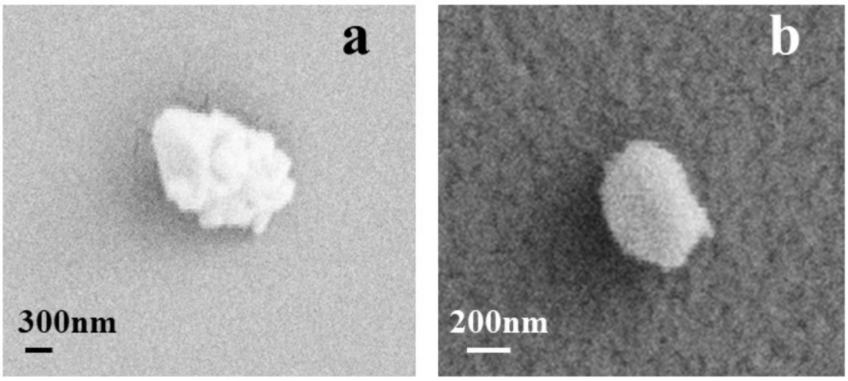

Fig.S1.(a).TEM image of SnS_x@C/LTO, (b) TEM image of LTO

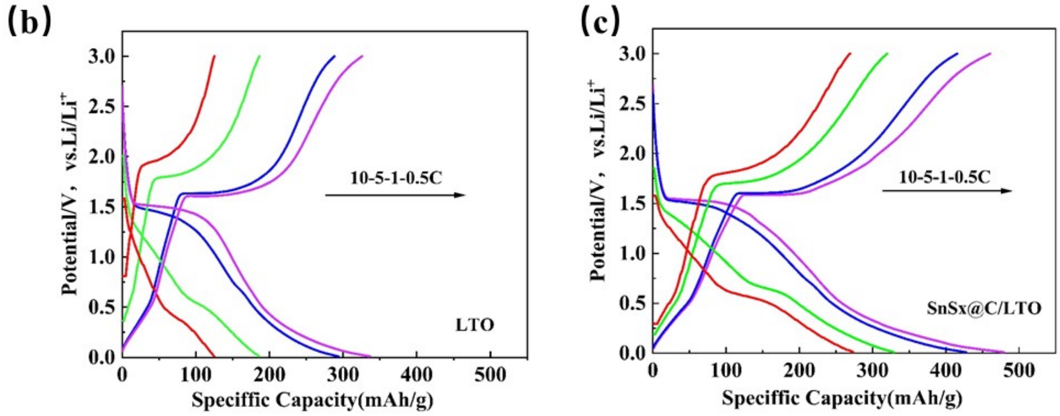

Fig.S2.Charge and discharge curves at different rates, (a) LTO, (b)SnS_x@C/LTO

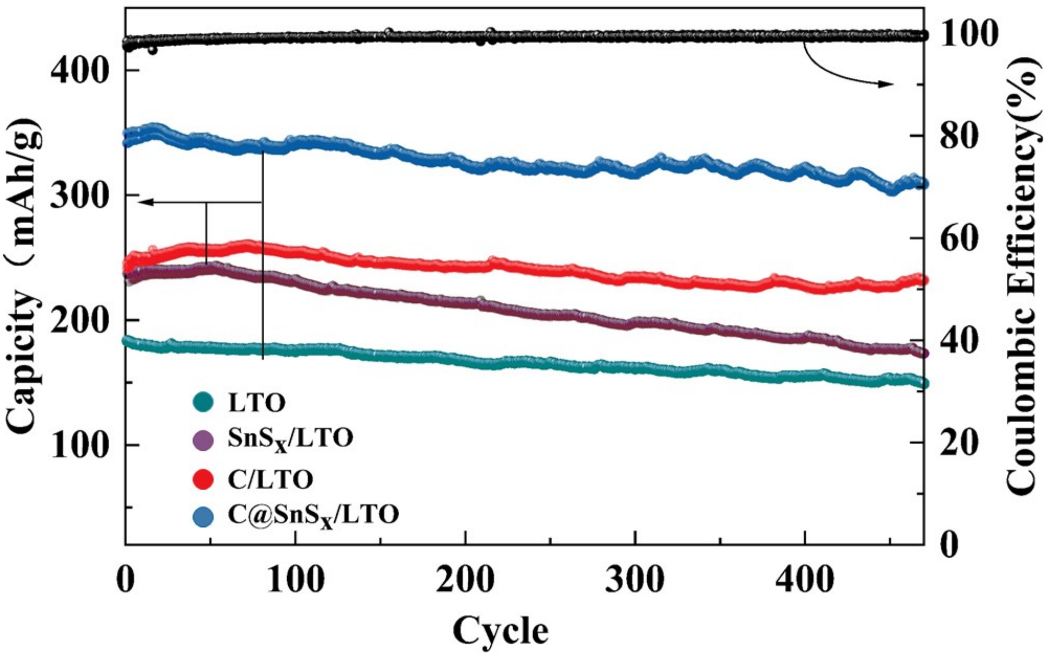

Fig.S3.The long-term cycle performance of LTO and SnS_x@C/LTO cycled 500 times at 5C.

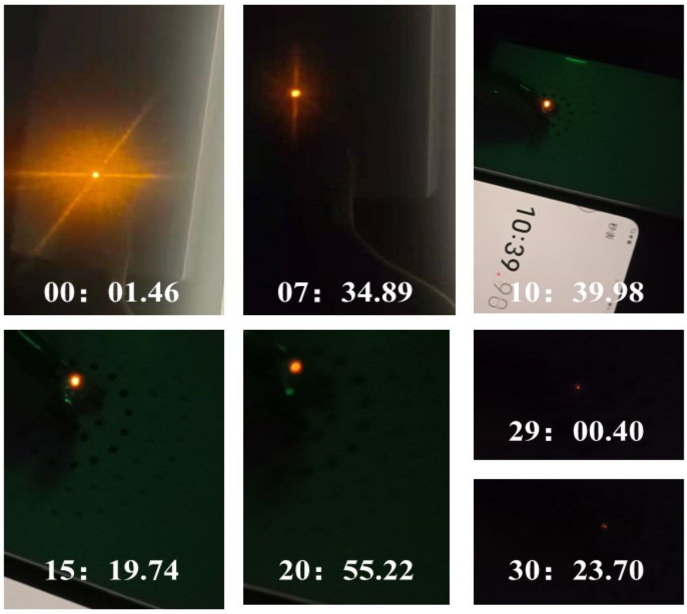

Fig.S4.The experimental phenomenon of lighting a small bulb

Anode	Cycle stability			Ref.
	Current density (mA/g)	After nth cycle	Charge capacity (mAh/g)	
This work	10C 1C（175）	500	227.53 425.8	the work
LT-ZnO	1C (175)	250	190	$Li_4Ti_5O_{12}$ coated with ultrathin aluminum-doped zinc oxide films as an anode material for lithium-ion batteries[1]
LTO-$LiCoO_2$	1A/g 2A/g 3A/g	100	192.1 163.7 108.2	Lithium cobalt oxide coated lithium zinc titanate anode material with an enhanced high rate capability and long lifespan for lithium-ion batteries[2]
LTO-h-BN	10C (175) 20C		179.5 174.1	Hexagonal boron nitride incorporation to achieve high performance $Li_4Ti_5O_{12}$ electrodes[3]
SrF_2-LTO	5C（875） 10C 20C		149 136 107	Enhanced electrochemical performance of SrF_2-modified $Li_4Ti_5O_{12}$ composite anode materials for lithium-ion batteries[4]
AlF_3-LTO	5C (175)	50	140	Synergetic effect of carbon and AlF_3coatings on the lithium titanium oxide anode material for high power lithium-ion batteries[5]
SmF_3-LTO	10C (170)		143.8	A porous mooncake-shaped $Li_4Ti_5O_{12}$ anode material modified by SmF_3 and its electrochemical performance in lithium-ion batteries[6]

$MgCo_2O_4$-LTO	1C (175)		300	Synthesis of $MgCo_2O_4$-coated $Li_4Ti_5O_{12}$ composite anodes using co-precipitation method for lithium-ion batteries[7]
LTO-Li_2ZrO_3	500mA/g	2000	102	$Li_4Ti_5O_{12}$ composited with Li_2ZrO_3 revealing simultaneously meliorated ionic and electronic conductivities as high performance anode materials for Li-ion batteries[8]
LTO⁄Cu_xO	10C (175)	100	137.6	Research on $Li_4Ti_5O_{12}$⁄Cu_xO Composite Anode Materials for Lithium-Ion Batteries[9]
Fe_2O_3-LTO	10C (175)		109.4	Improved capacity and rate capability of Fe_2O_3 modified $Li_4Ti_5O_{12}$anode material[10]
Fe_2O_3/$Li_4Ti_5O_{12}$	176mA/g	100	238.9	Graphitized carbon and graphene modified Fe_2O_3/$Li_4Ti_5O_{12}$as anode material for lithium ion batteries[11]
LTO–Fe_2O_3 nd LTO–CuO	1C (175)		216 200	High rate Li4Ti5O12–$Fe_2O_3$and $Li_4Ti_5O_{12}$–CuO composite anodes for advanced lithium ion batteries[12]
V_2O_3-LTO	0.1A/g		300	Interconnected Ultrasmall V_2O_3 and $Li_4Ti_5O_{12}$Particles Construct Robust Interfaces for Long-Cycling Anodes of Lithium-Ion Batteries[13]
Carbon-coated LTO	1000mA/g		181	Carbon-coated $Li_4Ti_5O_{12}$tablets derived from metal-organic frameworks as anode material for lithium-ion batteries[14]
N-doped carbon-coated LTO	10C (175)	200	136.8	Facile synthesis of N-doped carbon-coated $Li_4Ti_5O_{12}$ microspheres using polydopamine as a carbon source for high rate lithium ion batteries[15]
Ti and C coated LTO	0.1A/g		160	Synthesis and electrochemical performance of nano-sized $Li_4Ti_5O_{12}$with double surface modification of Ti(III) and carbon[16]
boron-doped carbon-coated LTO	10C (175)	300	98.4	Improved electrochemical performance of boron-doped carbon-coated lithium titanate as an anode[17]
Nitrogen, sulfur Co-doped porous graphene boosting LTO	10C (175)		160	Nitrogen, sulfur Co-doped porous graphene boosting $Li_4Ti_5O_{12}$ anode Performance for High-Rate and Long-Life Lithium Ion Batteries [18]
LTO/SiO2	10C (1600)	100	140	Structural and electrochemical characteristics of SiO_2 modified $Li_4Ti_5O_{12}$ as anode for lithium-ion batteries[19]

Table.S1. Comparison of different modification methods

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