Supporting Information

Facile Synthesis of Graphene Clamped SnO_2 Nanostructured Materials for Lithium-Ion Batteries

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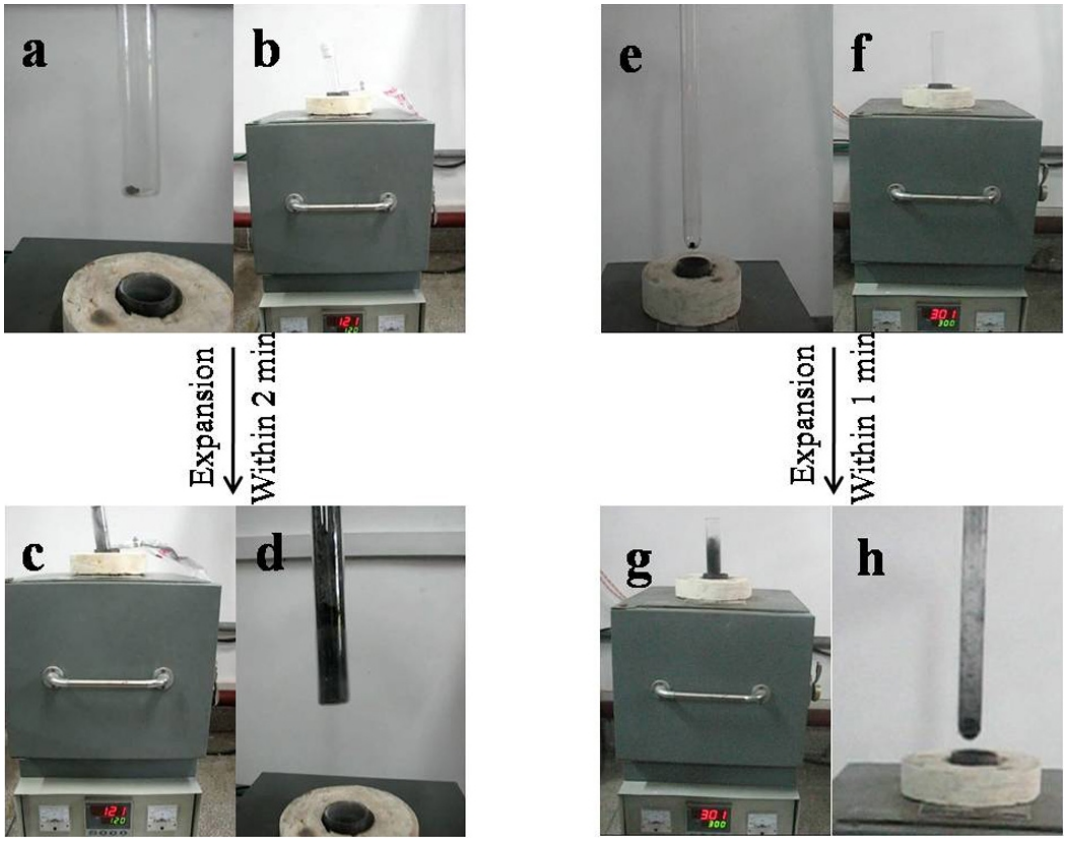

Fig. S1. Images a – d show the images before (a,b) and after (c, d) the expansion of SIGO at 120 ^{o}C within 2 minutes; Images e – f show the images before (e,f) and after (g, h) the expansion of SnO_2/SIGO at 300 ^{o}C within 1 minute.

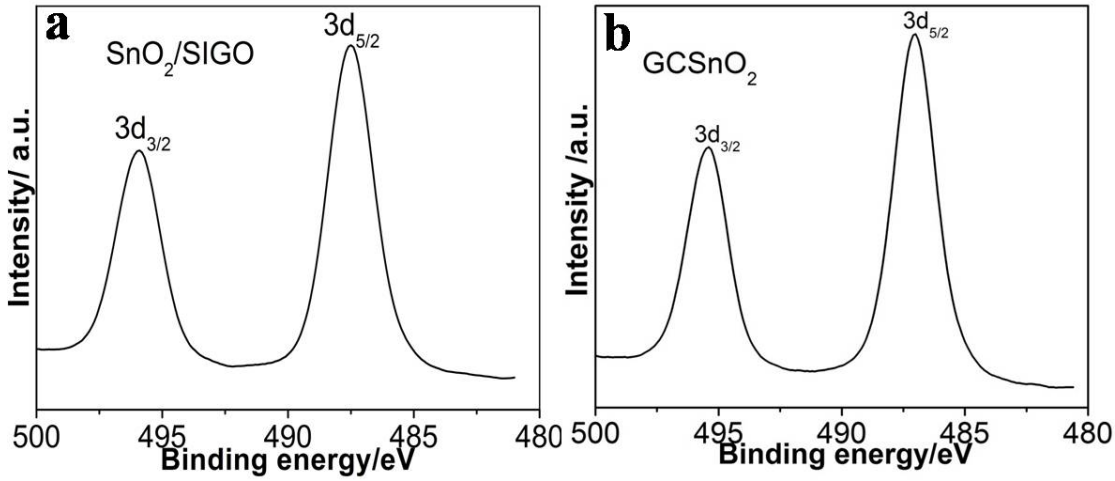

Fig. S2. a and b are the high resolution Sn 3d spectrums of SnO_2/SIGO and $GCSnO_2$, respectively.

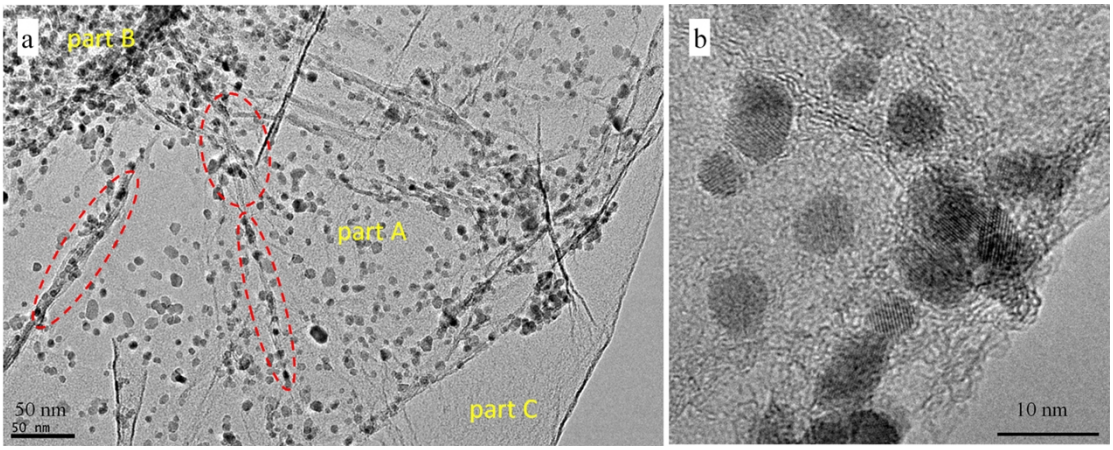

Fig. S3. a, typical TEM image of the $GCSnO_2$ and b, one high magnification observation of the rim of part A in (a).

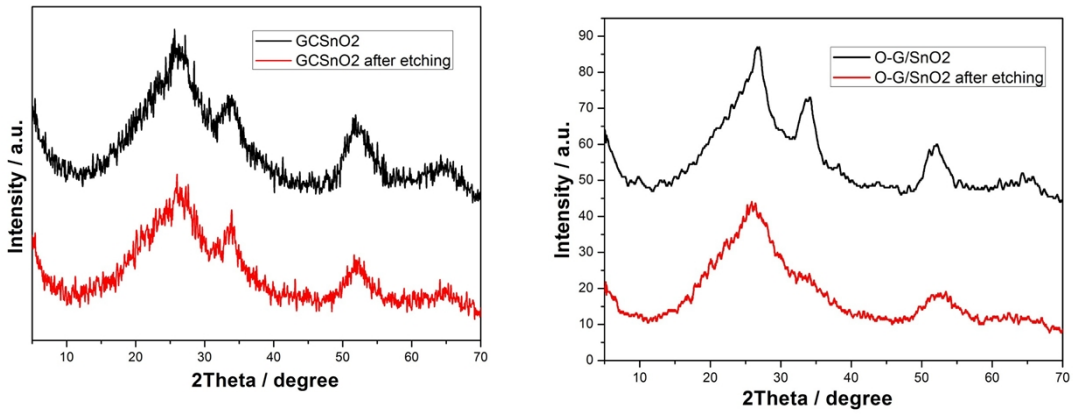

Fig. S4. The XRD patterns of the $GCSnO_2$ (a) and O-G/SnO_2 (b) before and after etching in 5 M HCl for 3 h under ultrasonic.

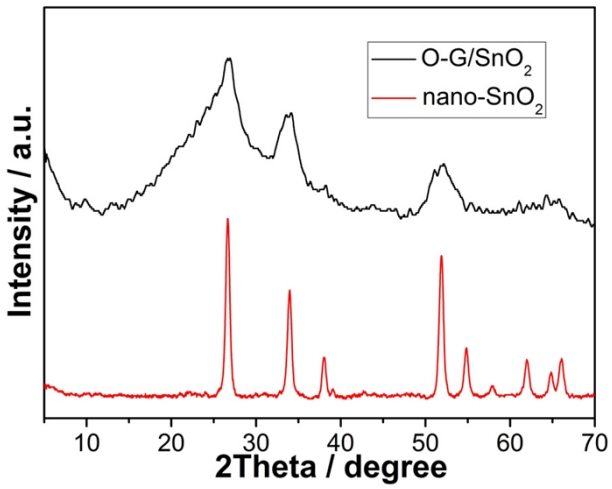

Fig. S5. The X-ray diffraction (XRD) patterns of the nano-SnO_2 and O-G/SnO_2.

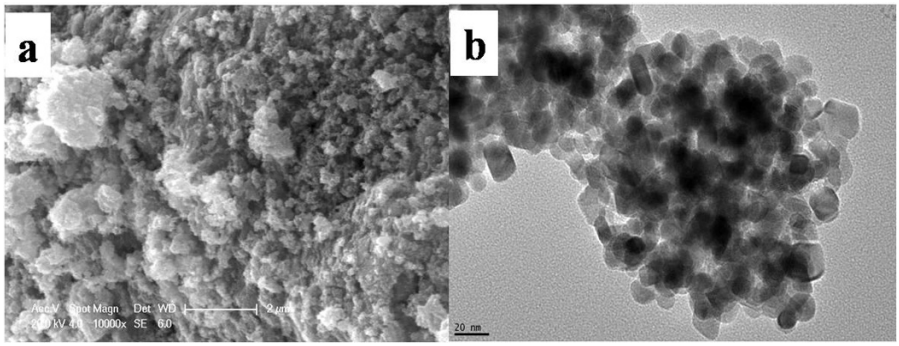

Fig. 6. SEM (a) and TEM (b) images of the nano-SnO_2.

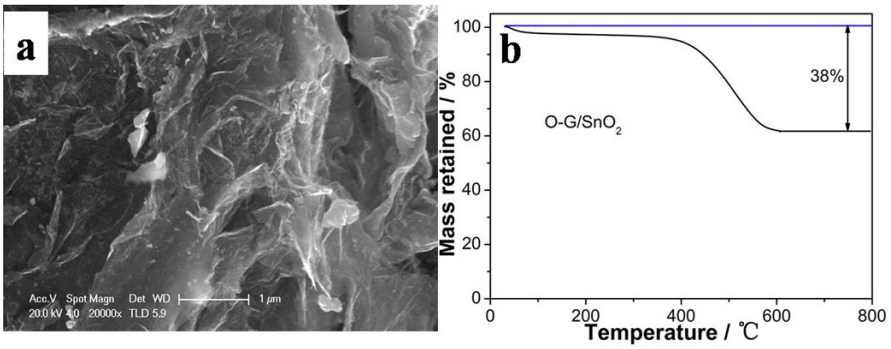

Fig. S7. The SEM image (a) and Thermo-gravimetric Analysis (b) of the O-G/SnO_2.

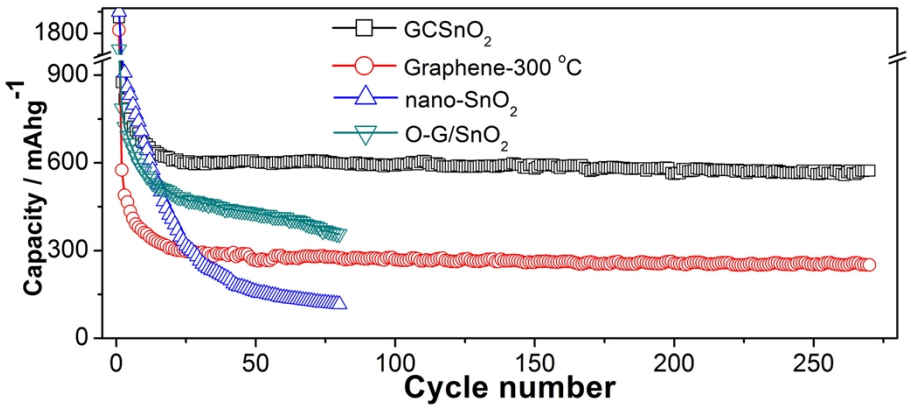

Fig. S8. A comparison of the Cycling performances of $GCSnO_2$, graphene-300°C, nano-SnO_2 and O-G/SnO_2.

Table S1. Performance of typical graphene/SnO_2 composite materials for lithium batteries during cycling with an upper potential limit of 2 V versus the lithium electrode.

Component	Test Condition	Initial Capacity / mAh g^{-1} (the first cycle Efficiency)	Remaining Capacity / mAh g^{-1}	Decay Rate (%)	Ref
RGO/SnO_2	50mA/g 0.005-2.00V	1080mAh/g (50.4%)	649mAh/g (30^{th})	1.33%	23
SnO_2-graphene	100mA/g 0.01-2.00V	819mAh/g (49%)	626mAh/g (50^{th})	0.47%	24
SnO_2/graphene	50mA/g 0.05-2.00V	810mAh/g (43%)	570mAh/g (30^{th})	1%	32
SnO_2/graphene	67mA/g 0.01-2.00V	978mAh/g (57.5%)	840mAh/g (30^{th})	0.46%	49
SnO_2-GNS	0.2C 0.005-2.00V	950mAh/g (68%)	550mAh/g (100^{th})	0.44%	50
GCSnO_2	200mA/g 0.02-2.00v	858mAh/g (42%)	572mAh/g (270^{th})	0.11%	This Work