

# Facile Synthesis of Sn/Nitrogen-Doped Reduced Graphene Oxide Nanocomposites with Superb Lithium Storage Properties

Quan Sun<sup>1</sup>, Ying Huang<sup>1</sup>, Shi Wu<sup>1</sup>, Zhonghui Gao<sup>1</sup>, Hang Liu<sup>2</sup>, Pei Hu<sup>2,3,\*</sup> and Long Qie<sup>1,\*</sup>

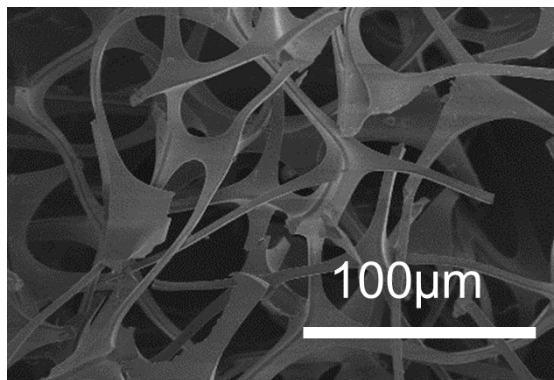


Figure S1. SEM image of Sn@N-G precursor (melamine)

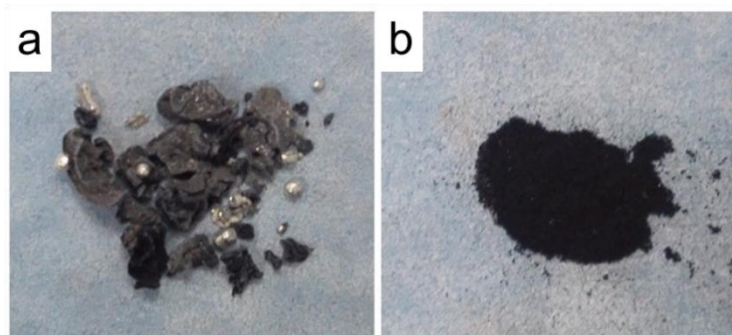


Figure S2. Optical images of Sn@G and Sn@N-G composite particles

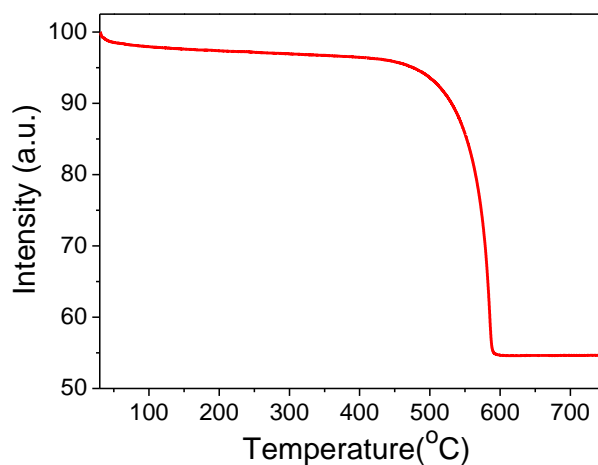
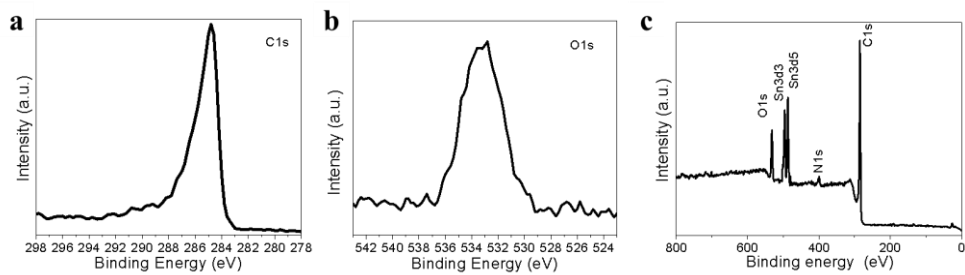
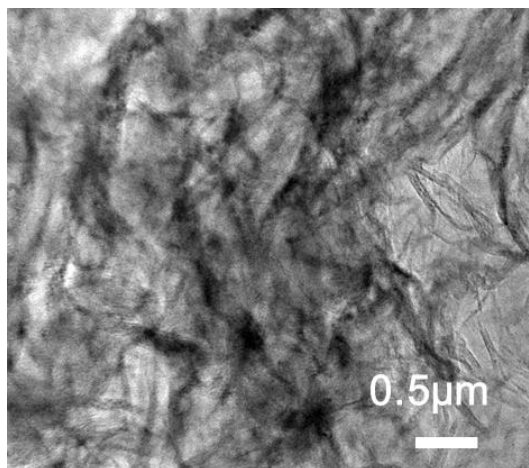


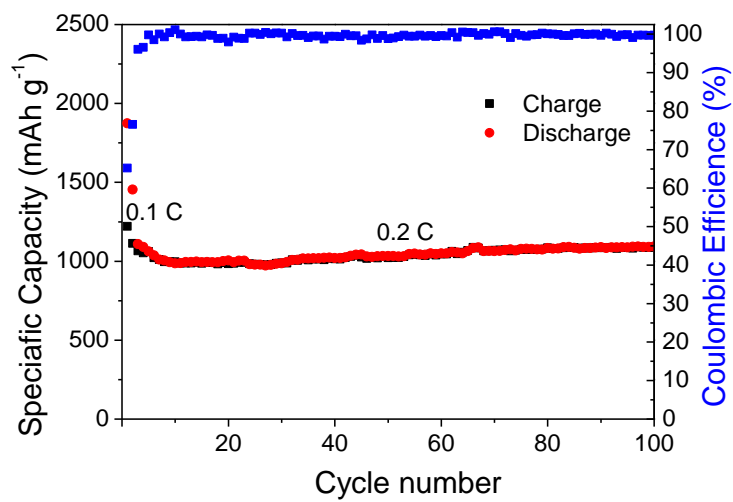
Figure S3. TG result of Sn/N-G obtained in air.



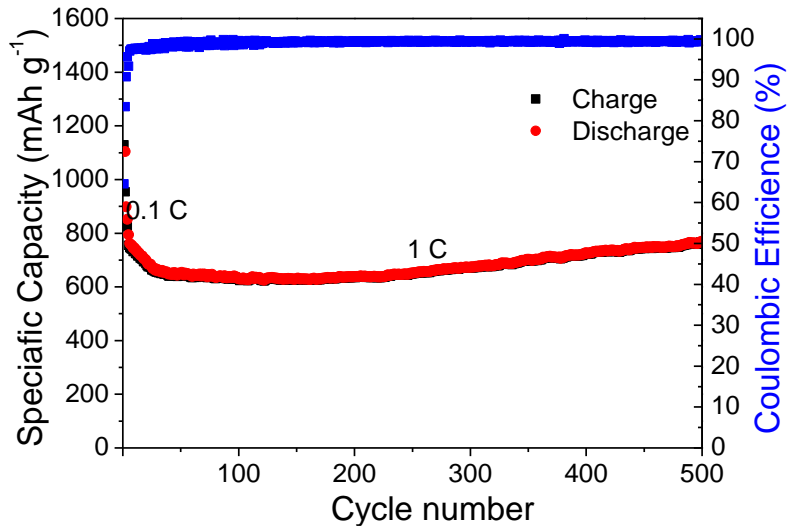
**Figure S4.** XPS spectrum of C1s, O1s and survey XPS spectrum of Sn@N-G composite.



**Figure S5.** TEM image of Sn@N-G composite after 100 cycles at 0.5C



**Figure S6.** Cycling performance of Sn@N-G electrodes at 0.2C.



**Figure S7.** Cycling performance of Sn@N-G electrodes at 1C.

**Table S1** The contents of carbon, nitrogen, oxygen, and tin in the Sn/N-G composite.

Sample	C (wt%)	N (wt%)	O (wt%)	Sn (wt%)
Sn/N-G	44.4	4.2 %	9.8	41.6 %

**Table S2** Comparison of electrochemical performances of the Sn@N-G electrodes with previously reported Sn-based electrodes.

Electrode materials	Synthetic method	Cycling stability (C/A/n)	Ref.
Sn/C-PANI nanocomposite	hydrogen thermal reduction	650/100/300	S1
Sn/N-doped carbon nanospheres nanocomposites	arc-discharge	520.4/500/1000	S2
Nano-Sn/C composites	aerosol spray pyrolysis	710/200/130	S3
Sn/C composite	chemical vapor deposition + chemical transformation	626.4/600/200	S4
Sn@C/graphenenanocomposite	hydrothermal	662/100/100	S5
core/shell-structured Sn/onion- like carbon nanocapsules	arc-discharge	585/100/100	S6
Sn-C nanostructured composite	gel + calcination	500/1000/200	S7
Sn@Graphene	chemical vapor deposition	682/2000/1000	S8
Sn nanoparticles decorated 3D foothill-like graphene	microwave plasma enhanced chemical vapor deposition	794/293/400	S9
Sn-based nanoparticles on graphene	chemical transformation + heat treatment	565.1/200/50	S10
Sn/nitrogen-doped carbon composite	hydrolyze + pyrolyze	660/200/200	S11
Pitaya-like Sn@C nanocomposites	spray pyrolysis	910/200/180	S12
Sn-carbon nanotube nanocapsules	Arc discharge	612/100/10	S13
C/Sn and C/SnO/Sn composites	gel + heat treatment	939/500/300	S14
Sn@N-G composites			This work

C/A/n means the capacity of C (mAh g<sup>-1</sup>) remained after n cycles at the certain current density of A (mA g<sup>-1</sup>).

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