Supporting Information

Confined Porous Graphene/SnO_x Frameworks within Polyaniline-Derived Carbon as Highly Stable Lithium-Ion Battery Anodes

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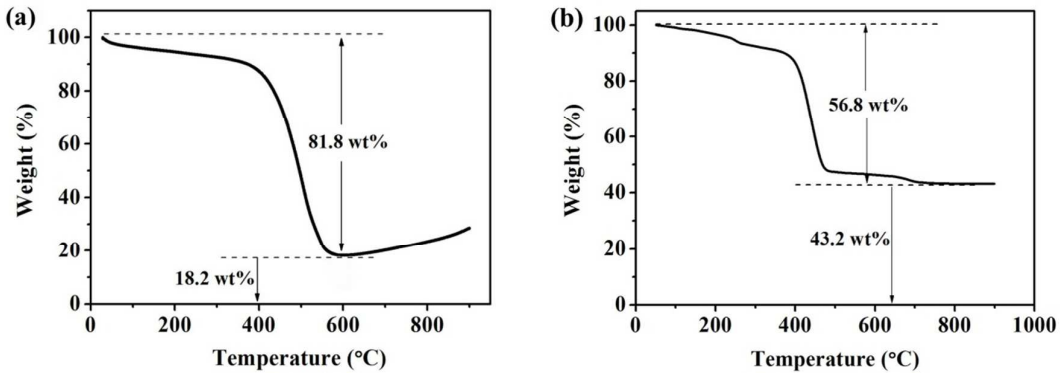

Figure S1 TGA analysis for the pG/SnO_x/C (a) and pG/SnO_2 (b) composites (the composites were annealed from room temperature to 900 ^oC with a ramping rate of 10 ^oC min^{-1} in air).

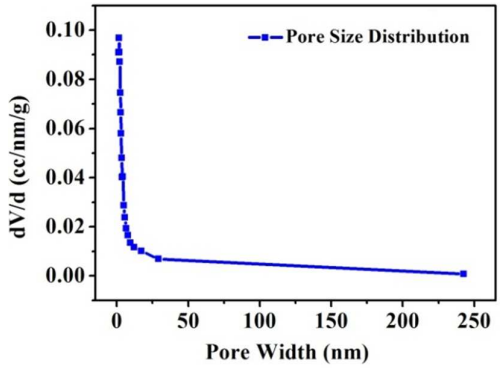

Figure S2 Pore size distribution curve of the pG/SnO_x/C composite measured by BJH adsorption method.

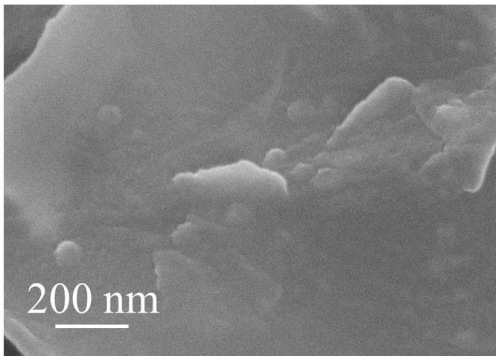

Figure S3 FE-SEM image of pG/SnO_2.

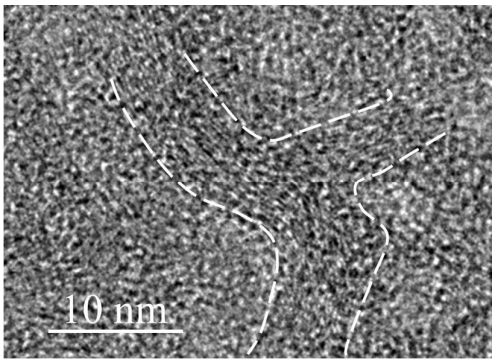

Figure S4 High-Resolution TEM image of pG/SnO_x/C.

Table S1. Comparison of the electrochemical properties of the porous pG/SnO_x/C composite with the similar anodes including the carbon coating without silicon-induced pores for LIBs.

Sample	Current density	Cycles	Capacity	Ref./Year
carbon-coated SnO_2/graphene	200 mA g^{-1}	120	460 mAh g^{-1}	[1]/2014
C@SnO_2-Graphene	100 mA g^{-1}	50	879 mAh g^{-1}	[2]/2014
SnO_2/C/GN-1.5	100 mA g^{-1}	70	720 mAh g^{-1}	[3]/2014
SnO_2-C/GNS	100 mA g^{-1}	80	703 mAh g^{-1}	[4]/2013
pG/SnO_x/C	100 mA g^{-1}	100	907 mAh g^{-1}	
	1000 mA g^{-1}	400	555 mAh g^{-1}	Our work

References

(1) Wu, G. L.; Li, Z. T.; Wu, W. T.; Wu, M. B. Effects of Calcination on the Preparation of Carbon-Coated SnO_2/Graphene as Anode Material for Lithium-Ion Batteries. *J. Alloys Compd.* **2014**,

615, 582–587.

(2) Lu, X. X.; Yang, F.; Geng, X.; Xiao, P. Enhanced Cyclability of Amorphous Carbon-Coated SnO2-Graphene Composite as Anode for Li-Ion Batteries. *Electrochim. Acta* **2014**, *147*, 596–602.

(3) Li, Z. T.; Wu, G. L.; Liu, D.; Wu, W. T.; Jiang, B.; Zheng, J. T.; Li, Y. P.; Li, J. H.; Wu, M. B. Graphene Enhanced Carbon-Coated Tin Dioxide Nanoparticles for Lithium-Ion Secondary Batteries. *J. Mater. Chem. A* **2014**, *2*, 7471–7477.

(4) Cheng, J. L.; Xin, H. L.; Zheng, H. M.; Wang, B. One-Pot Synthesis of Carbon Coated-SnO_2/Graphene-Sheet Nanocomposite with Highly Reversible Lithium Storage Capability. *J. Power Sources* **2013**, *232*, 152–158.