

Supplementary Information

Facile and scalable preparation of 3D SnO₂/holey graphene composite frameworks for stable lithium storage at high mass loading level

Junfei Liang,* Hongtao Sun, Yuqi Xu, Tengxiao Liu, Hua Wang,* Hantao Liu, and Lin Guo*

Table S1 Comparison of energy storage performance metrics for various SnO₂ and Si-based electrode materials

Materials	Mass Loading (mg cm ⁻²)	Current Density (mA cm ⁻²)	Area capacity (mA h cm ⁻²)	Ref.
SHGF	4	2	2.9 (1000 cycle)	Our work
	4	8	2.3 (2000 cycle)	
SnO ₂ /3D graphene	1	0.2	0.798 (100cycle)	1
SnO ₂ Hollow Microspheres	1	0.1	0.746 (50cycle)	2
Ultrasmall SnO ₂ nanoparticles@C	1.64	3.28	0.443 (2000cycles)	3
Carbon-Coated SnO ₂ Submicrobox	1.5	0.75	0.491 (100 cycle)	4
Si secondary structure	1.93	0.5	2 (160 cycle)	5
	1.30	0.5	1.2 (350 cycle)	
	0.64	0.5	0.7 (700 cycle)	
Mesoporous Si sponge	2	0.75	1.5 (300 cycle)	6

Notes and references

- 1 J. -I. Lee, J. Song, Y. Cha, S. Fu, C. Zhu, X. Li, Y. Lin and M. -K. Song, *Nano Res.*, 2017, **10**, 4398.
- 2 J. Zhang, H. Ren, J. Wang, J. Qi, R. Yu, D. Wang and Y. Liu, *J. Mater. Chem. A*, 2016, **4**, 17673.
- 3 A. Jahel, C. M. Ghimbeu, L. Monconduit and C. Vix-Guterl, *Adv. Energy Mater.*, 2014, **4**, 1400025.
- 4 X. Zhou, L. Yu and X. W. Lou, *Adv. Energy Mater.*, 2016, **6**, 1600451.
- 5 N. Liu, Z. Lu, J. Zhao, M. T. McDowell, H. -W. Lee, W. Zhao and Y. Cui, *Nat. Nanotechnol.*, 2014, **9**, 187.
- 6 X. Li, M. Gu, S. Hu, R. Kennard, P. Yan, X. Chen, C. Wang, M. J. Sailor, J. G. Zhang and J. Liu, *Nat. Commun.*, 2014, **5**, 4105.