

Self-assembled Mn-doped MoS₂ hollow nanotubes with significantly enhanced sodium storage for high-performance sodium-ion batteries

Tian Zheng, Guangda Li*, Jianhong Dong, Qiaoqiao Sun and Xiangeng Meng*

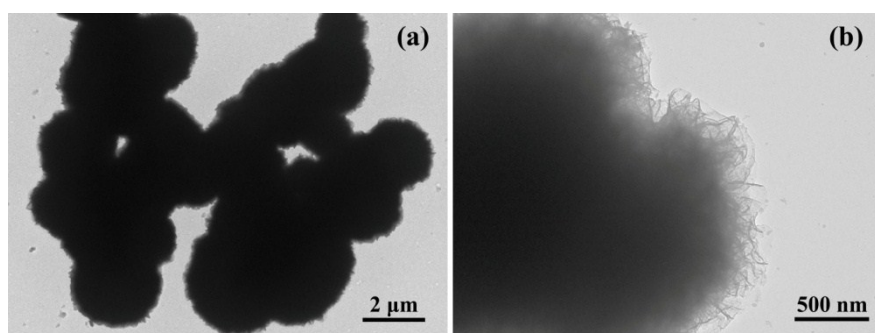


Figure S1. TEM images of the bulk MoS₂.

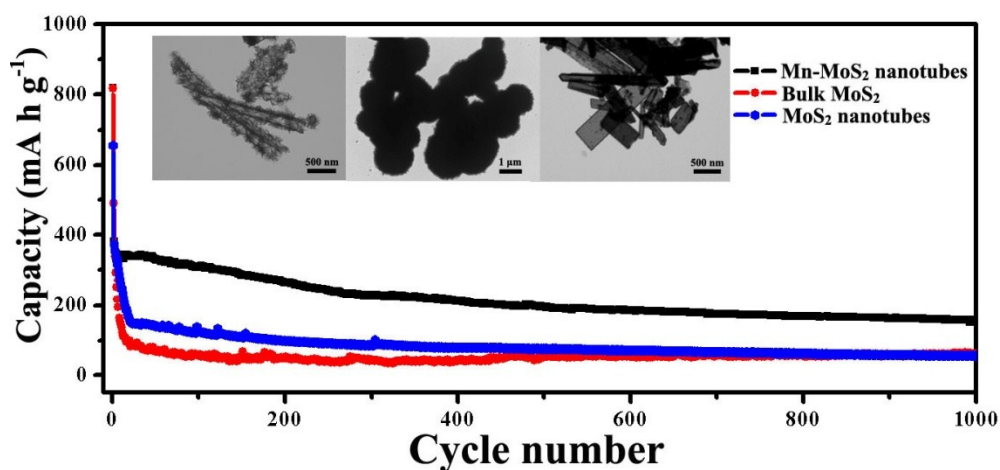


Figure S2. Cycling performance of the Mn-MoS₂ nanotubes, bulk MoS₂ and undoped MoS₂ nanotubes at the current density of 1 A g⁻¹ and the corresponding TEM images of these samples (shown in the inset).

Table S1 Electrochemical performance of recent progress on metal sulfide material for SIBs.

Materials	Current density (mA g ⁻¹)	Cycle number	Capacity (mA h g ⁻¹)	References
ZnS spheres	640	100	423.0	1
WS ₂ nanowires	100	50	388.8	2
Flower-like Sb ₂ S ₃	200	100	641.7	3
Hollow sphere MnS/rGo	100	125	308.0	4
Ni ₃ S ₂ particals	450	40	250.0	5
3D-flowers SnS ₂	800	50	180.0	6
FeS ₂ spheres	200	60	240.0	7
CoS/rGo particals	100	100	230.8	8
MoS ₂ nanofibers	100	30	474.0	9
MoS ₂ nanoflowers	200	300	295.0	10
MoS ₂ nanosheets	320	100	251.0	11
MoS ₂ /C tubes	250	200	480.0	12
MoS ₂ /C spheres	100	100	470.0	13
Mn-MoS ₂ nanotubes	1000 100	1000 200	160.0 441.0	This work

1. D. W. Su, K. Kretschmer and G. X. Wang, *Adv. Energy Mater.*, 2016, **6**, 1501785.
2. Y. C. Liu, N. Zhang, H. Y. Kang, M. H. Shang, L. F. Jiao and J. Chen, *Chem. Eur. J.*, 2015, **21**, 11878.
3. Y. Y. Zhu, P. Nie, L. F. Shen, S. Y. Dong, Q. Sheng, H. S. Li, H. F. Luo and X. G. Zhang, *Nanoscale*, 2015, **7**, 3309.
4. X. J. Xu, S. M. Ji, M. Z. Gu and J. Liu, *ACS Appl. Mater. Interfaces*, 2015, **7**, 20957.
5. J. S. Kim, S. W. Lee, X. J. Liu, G. B. Cho, K. W. Kim, I. S. Ahn, J. H. Ahn, G. X. Wang and H. J. Ahn, *Curr. Appl. Phys.*, 2011, **11**, S11.
6. E. Cho, K. S. Song, M. H. Park, K. W. Nam and Y. M. Kang, *Small*, 2016, **12**, 2510.

7. Z. Hu, Z. Zhu, F. Cheng, K. Zhang, J. Wang, C. Chen and J. Chen, *Energy Environ. Sci.*, 2015, **8**, 1309.
8. Q. Zhou, L. Liu, G. X. Guo, Z. C. Yan, J. L. Tan, Z. F. Huang, X. Y. Chen and X. Y. Wang, *RSC Adv.*, 2015, **5**, 71644.
9. S. D. Lacey, J. Wan, A. v. W. Cresce, S. M. Russell, J. Dai, W. Bao, K. Xu and L. Hu, *Nano Lett.*, 2015, **15**, 1018.
10. Z. Hu, L. Wang, K. Zhang, J. Wang, F. Cheng, Z. Tao and J. Chen, *Angew. Chem. Int. Ed.*, 2014, **126**, 13008.
11. D. W. Su, S. X. Dou and G. X. Wang, *Adv. Energy Mater.*, 2015, **5**, 1401205.
12. X. Q. Zhang, X. N. Li, J. W. Liang, Y. C. Zhu and Y. T. Qian, *Small*, 2016, **12**, 2484.
13. Y. Y. Lu, Q. Zhao, N. Zhang, K. X. Lei, F. J. Li and J. Chen, *Adv. Funct. Mater.*, 2016, **26**, 911.