Supporting information

Two-dimensional architecture of N,S-codoped nanocarbon composites embedding few-layer MoS_2 for efficient lithium storage

Jintao Ren[#], Dandan Yang[#], Lei Chen, Zhong-Yong Yuan[*]

School of Materials Science and Engineering, Smart Sensing Interdisciplinary Science Center, Nankai University, Tianjin 300350, China

[*] Corresponding author. *E-mail:* zyyuan@nankai.edu.cn (Z.-Y. Yuan).

[#] These authors have equal contributions to this work.

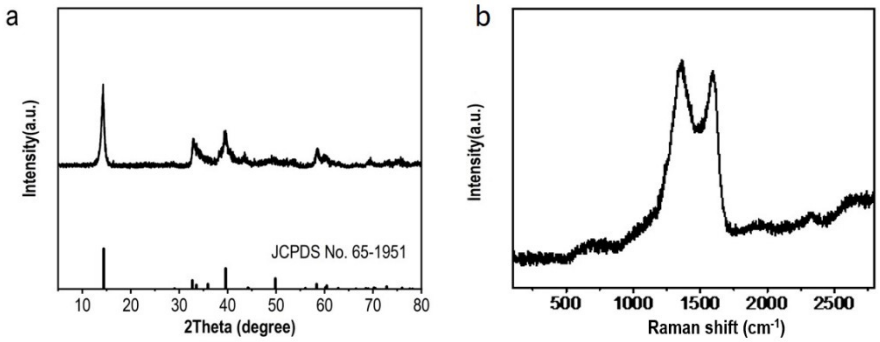

Fig. S1. (a) XRD pattern and (b) Raman spectrum of MoS_2/NSCS.

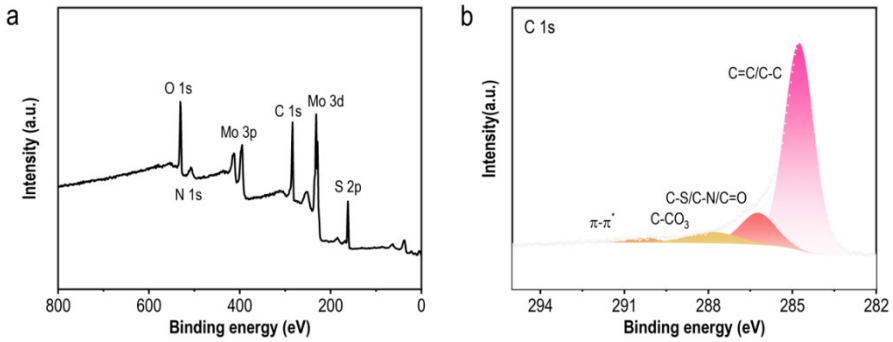

Fig. S2. (a) XPS survey scan, (b) high-resolution XPS spectrum of C 1s for MoS_2/NSCS.

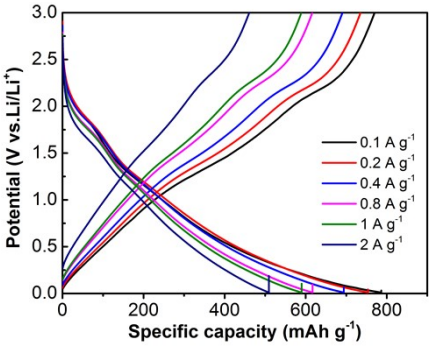

Fig. S3. Galvanostatic discharge–charge profiles of the MoS_2/NSCS at different current densities.

Table S1. Compared electrochemical performance of reported similar MoS_2-C materials with different current rates.

Electrode materials	Current density ($A\ g^{-1}$)	Cycles	Specific capacity ($mAh\ g^{-1}$)	Rate performances	References
MoS_2/NSCS	0.2	110	731	776, 731, 691, 617, 592, 396 mAh g^{-1} at 0.1, 0.2, 0.4, 0.8, 1.0, and 2.0 A g^{-1}	This work.
MoS_2-NC hybrids	0.2	300	995	1155, 926, 865, 788, and 574 mAh g^{-1} at 0.2, 0.5, 1.0, 2.0 and 5.0 A g^{-1}	[1]
MoS_2-in-Ti_3C_2 superstructure	1.0	500	614	830, 760, 650, 580 and 500 mAh g^{-1} at 0.2, 0.5, 1.0, 2.0 and 5.0 A g^{-1}	[2]
MoS_2 nanosheet/carbon fiber cloth	0.2	200	635	1173, 951, 831, 739, 689, 593, 537, 491 and 441 mA h g^{-1} at 0.1, 0.2, 0.3, 0.4, 0.5, 0.75, 1, 1.2 and 1.5 A g^{-1}	[3]
MoS_2 nanosheet arrays/carbon fiber cloth	0.4	500	1023	1183, 1113, 1088, 1035, 990, and 943 mAh g^{-1} at 0.2, 0.4, 0.8, 1.6, 3.2, and 6.4 A g^{-1}	[4]
MoS_2 on N-doped carbon framework	1.0	110	844	965, 905, 838, 762, and 702 mAh g^{-1} at 0.2, 0.4, 1, 2, and 4 A^{-1}	[5]
MoS_2 nanothorns grown on CNTs	0.1	200	982	960, 905, 859, 820, 793, and 758 mAh g^{-1} at 0.1, 0.2, 0.5, 1, 1.5, and 2 A g^{-1}	[6]
1T-MoS_2 on liquid-exfoliated graphene	0.5	60	907	1335, 1163, 940, 820 and 700 mAh g^{-1} at 0.1, 0.2, 0.5, 1.0 and 2.0 A g^{-1}	[7]
MoS_2/C nanosheets	0.2	220	931	832, 752, 540, 436 and 344 mAh g^{-1} at 0.1, 0.2, 0.5, 1 and 2 A g^{-1}	[8]

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