

# A facile synthesis method and electrochemical studies of hierarchical structured MoS<sub>2</sub>/C-nanocomposite

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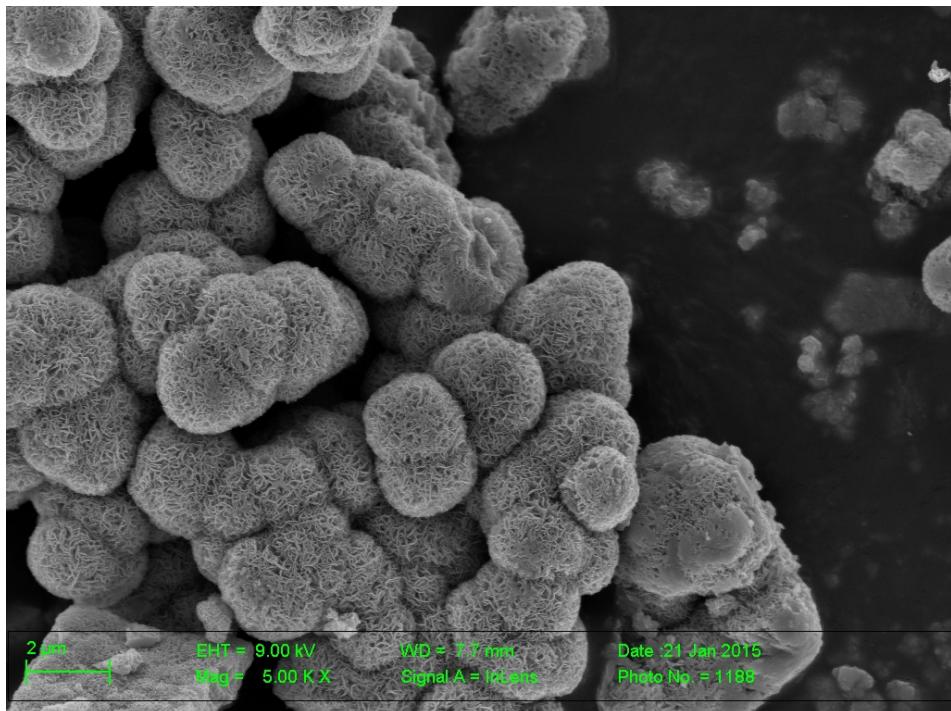


Figure S1. SEM image of a pure MoS<sub>2</sub> sample.

Element	Spot 1/%	Spot 2/%	Spot 3/%	Average/%
Mo	13.93	13.67	13.79	13.79±0.13
S	31.27	30.33	31.37	30.99±0.57
C	40.57	41.07	38.82	40.15±1.18
O	11.77	11.81	12.41	11.99±0.35
Cu	2.46	3.13	3.62	3.07±0.58

Table S1. Atomic composition of S-MoS<sub>2</sub>/BC composite.

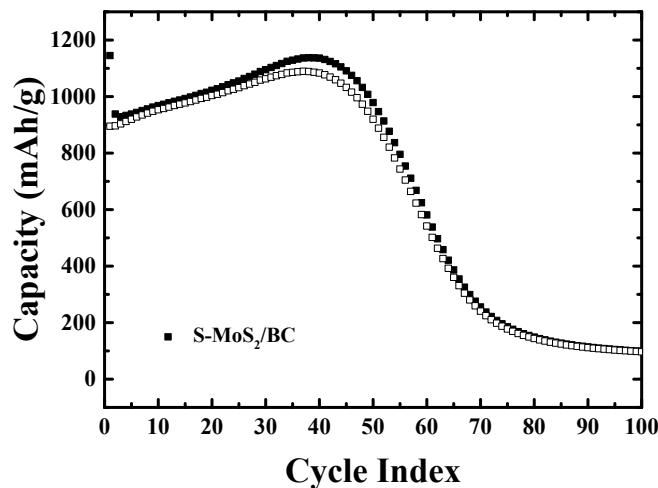


Figure S2. Long-term cycling performance of the S-MoS<sub>2</sub>/BC sample.

	MoS <sub>2</sub>	MoS <sub>2</sub> /BC	S-MoS <sub>2</sub> /BC
R <sub>E</sub> /Ω	9.0±0.5	8.0±0.5	9.4±0.4
R <sub>CT</sub> /Ω	458±5	250±5	262±5
CPE <sub>DL</sub> /μF	1.3±0.05	2.7±0.2	6.6±0.2
α	0.76±0.5	0.74±0.5	0.73±0.5

Table S2. Simulated data of the EIS before cycling. The data are based on the average value with standard deviation from two measurements for each sample.

MoS <sub>2</sub> -based anodes	Discharge capacity (mAh/g) after 50 cycle	Voltage range (V)	Current density (mA/g)	Reference
S-MoS <sub>2</sub> /BC	979	0.01-3	670	Present study
Porous CNF@MoS <sub>2</sub> core/sheath fiber	736	0.01-3	50	[1]
MoS <sub>2</sub> -coated three-dimensional graphene network	877	0.01-3	100	[2]
MoS <sub>2</sub> nanosheet/active carbon fiber cloth	~700	0-3	500	[3]
CNT network-MoS <sub>2</sub> composite	1456	0.01-3	200	[4]
Single-layered ultrasmall MoS <sub>2</sub> nanoplates embedded in carbon nanofibers	~1000	0.005-3	1000	[5]
Self-assembled MoS <sub>2</sub> nanotubes	839	0.01-3	100	[6]

Table S3. Discharge capacity of various MoS<sub>2</sub>-based anodes.

## References

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