

Electronic Supplementary Information

Fabrication of Flower-like MoS₂/TiO₂ Hybrid as Anode Material for Lithium Ion Batteries

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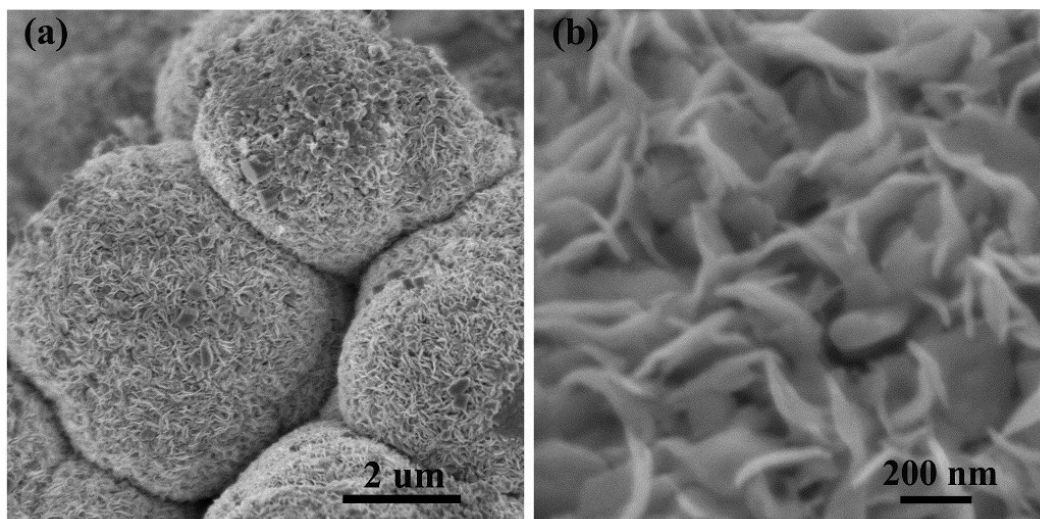


Fig. S1 (a) low- and (b) high- magnification SEM images of bare MoS₂.

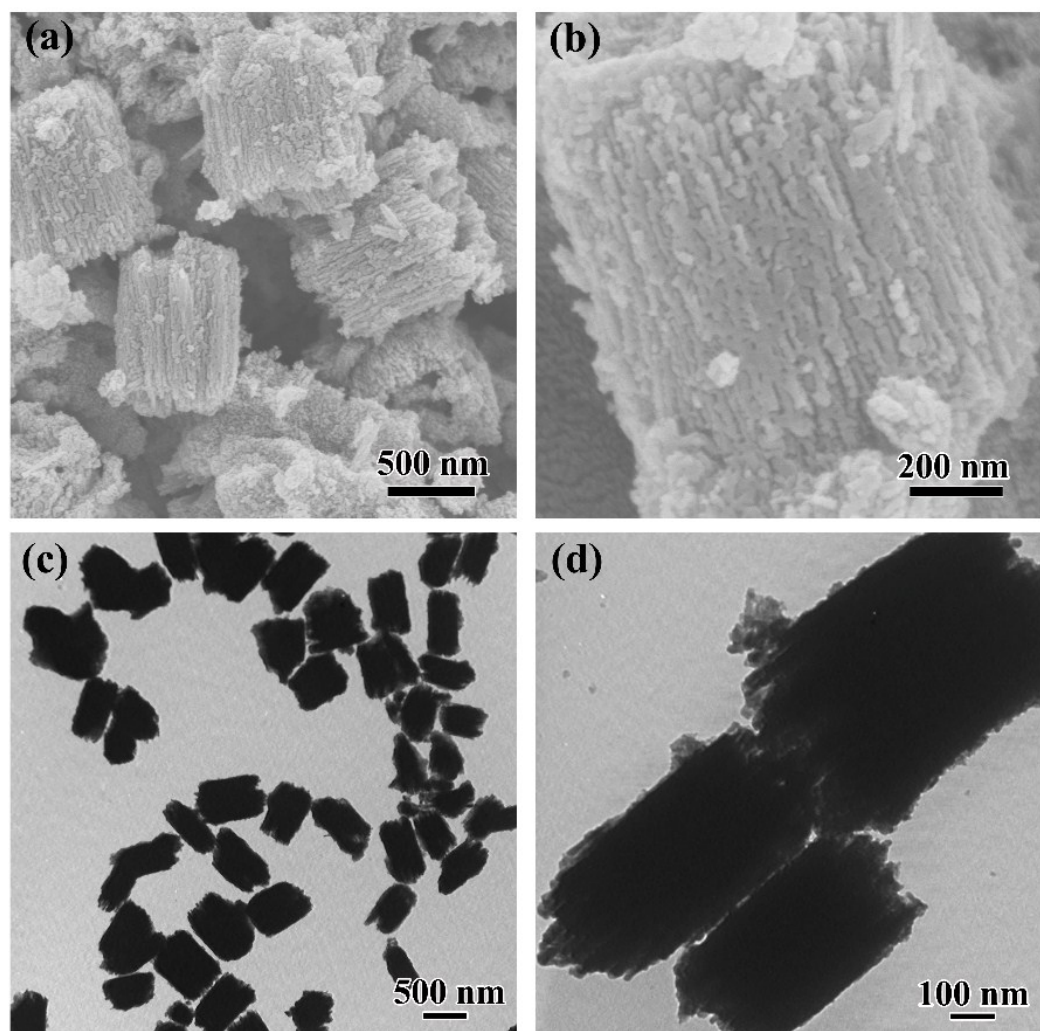


Fig. S2 (a) low- and (b) high- magnification SEM images of MoO₂/TiO₂ precursor. (c) low- and (b) high- magnification TEM images of MoO₂/TiO₂ precursor.

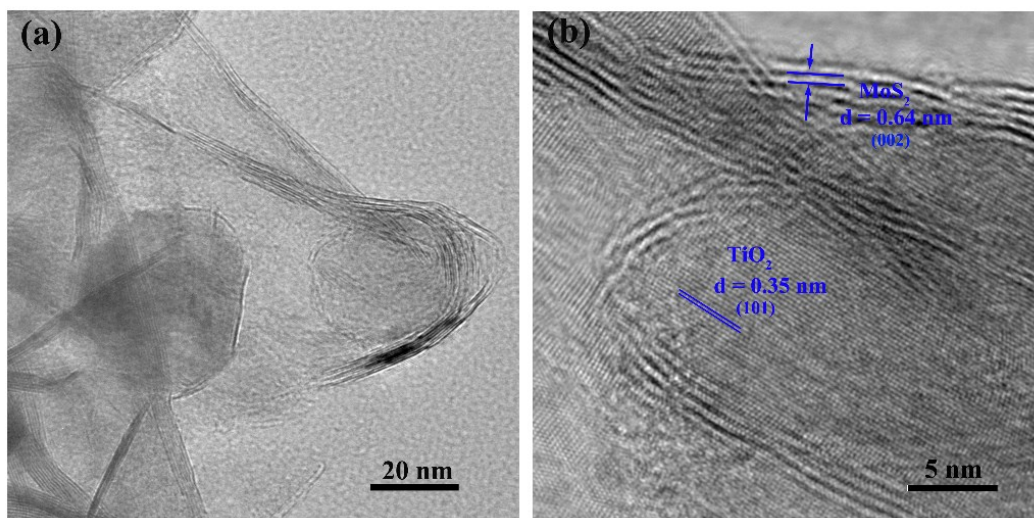


Fig. S3 High-resolution TEM images of MoS₂/TiO₂ hybrid.

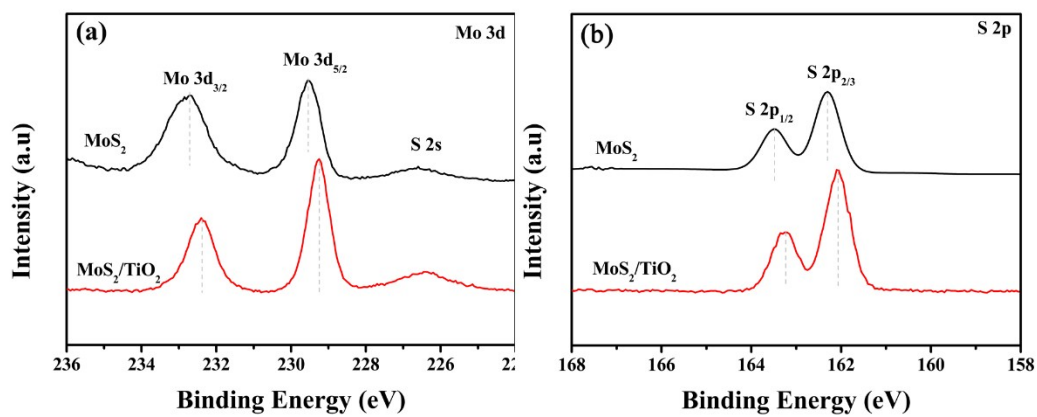


Fig. S4 XPS spectra of bare MoS₂ and MoS₂/TiO₂ hybrid: (a) S 2p peaks of bare MoS₂ and MoS₂/TiO₂ hybrid, (b) Mo 3d peaks of bare MoS₂ and MoS₂/TiO₂ hybrid.

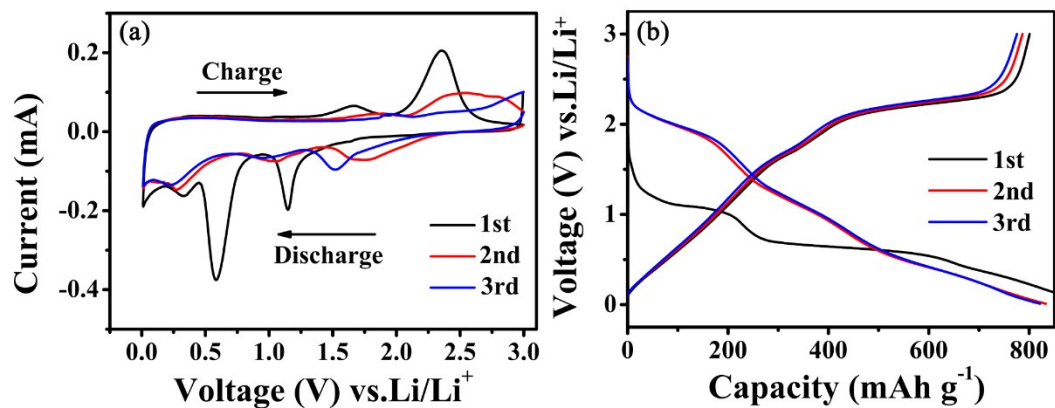


Fig. S5 (a) Representative CV curves for the 1st, 2nd, 3rd of the annealed bare MoS₂ at a scan rate of 0.1 mV s⁻¹, (b) galvanostatic charge–discharge voltage profiles of the annealed bare MoS₂ at a current density of 100 mA g⁻¹.

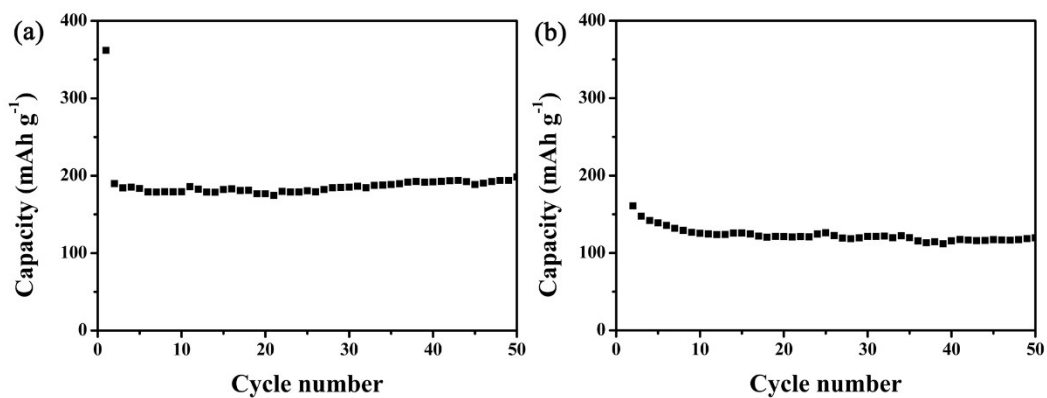


Fig. S6 Cycling performance of bare (a) acetylene black (b) TiO₂ electrodes at a current density of 100 mA g⁻¹.

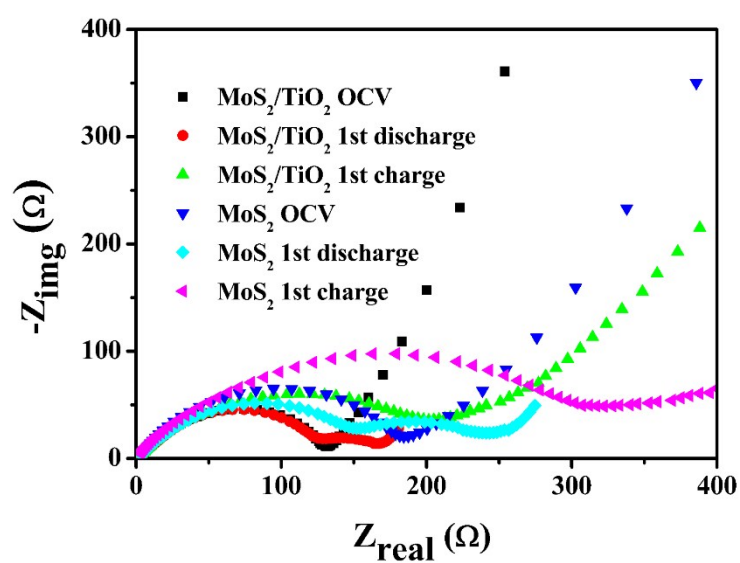


Fig. S7 Nyquist plots of the MoS₂/TiO₂ hybrid and bare MoS₂ electrodes with different states of charge.

Table S1. Summarized results of EIS parameters derived using the equivalent circuit model for MoS₂/TiO₂ hybrid and bare MoS₂ electrode with different states of charge.

Samples	Rsf/Ω	Rct/Ω
MoS ₂ /TiO ₂ OCV	–	120.9
MoS ₂ /TiO ₂ 1st discharge	37.6	114.9
MoS ₂ /TiO ₂ 1st charge	85.9	195.4
MoS ₂ OCV	–	148.8
MoS ₂ 1st discharge	108.2	138.5
MoS ₂ 1st charge	290.3	259.7