

## Electronic Supplementary Information

### **A simple L-cysteine-assisted method for the growth of MoS<sub>2</sub> nanosheets on carbon nanotubes for high-performance lithium ion batteries**

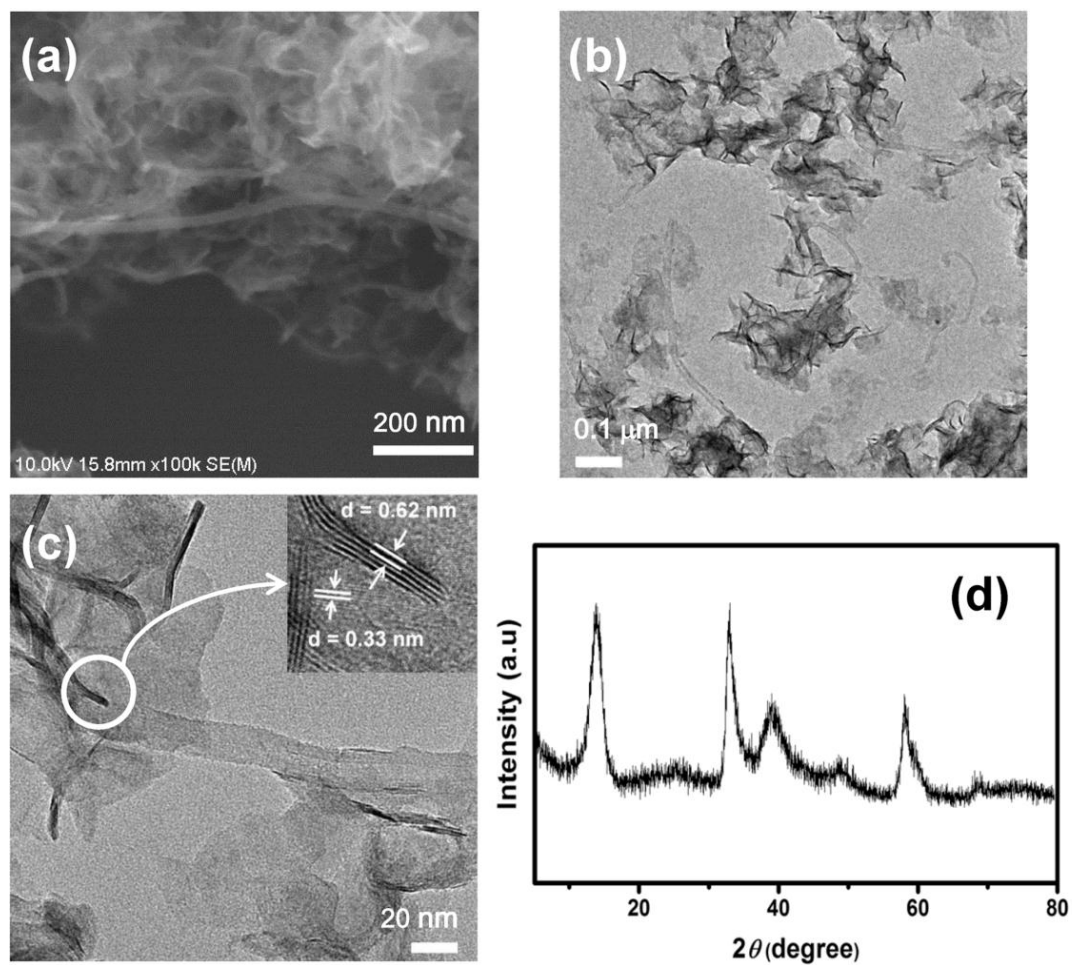
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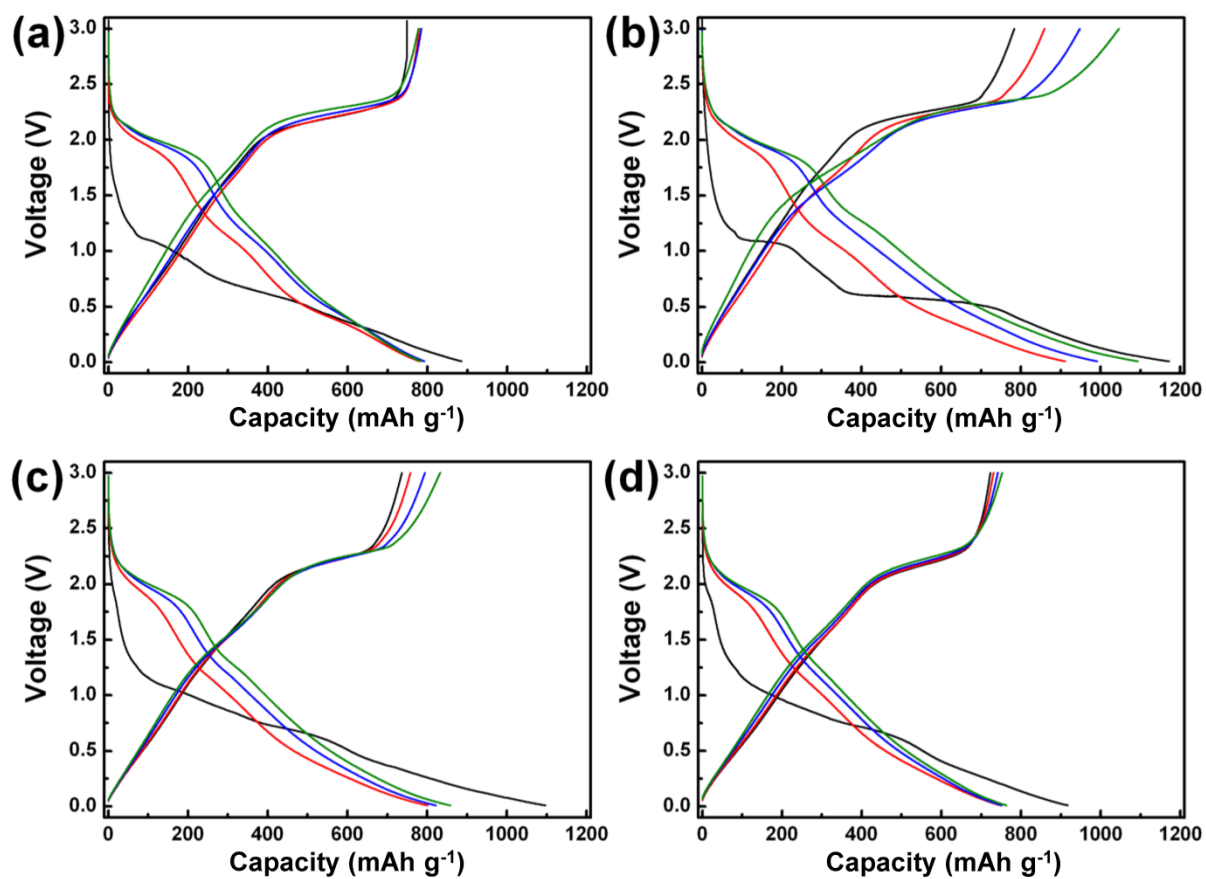
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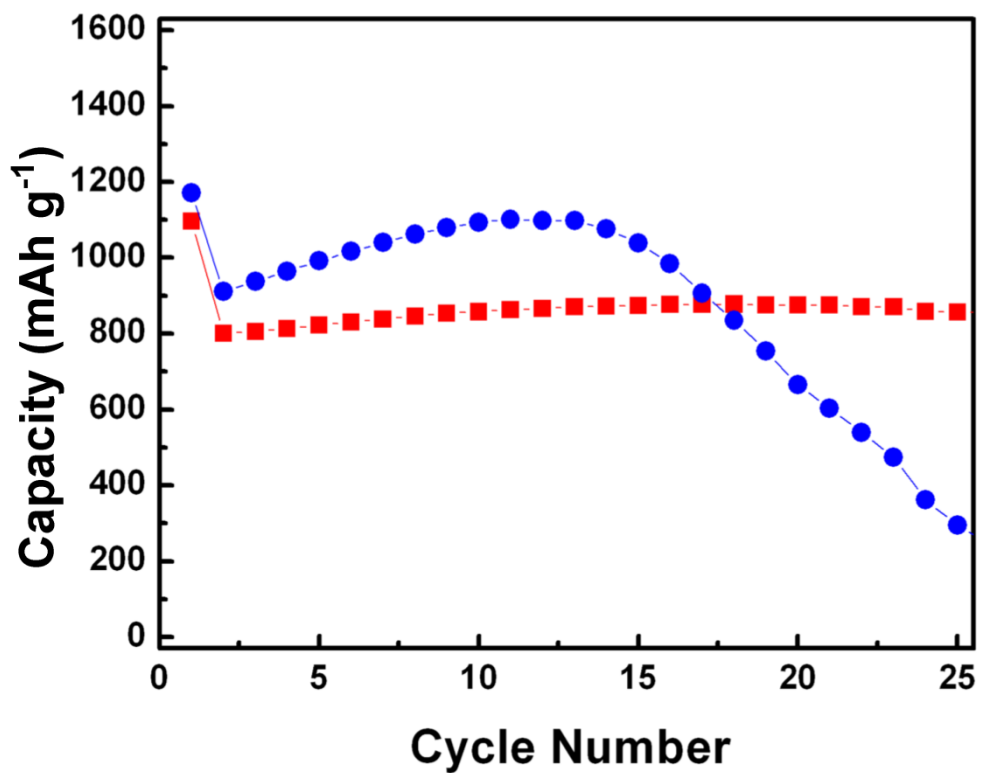
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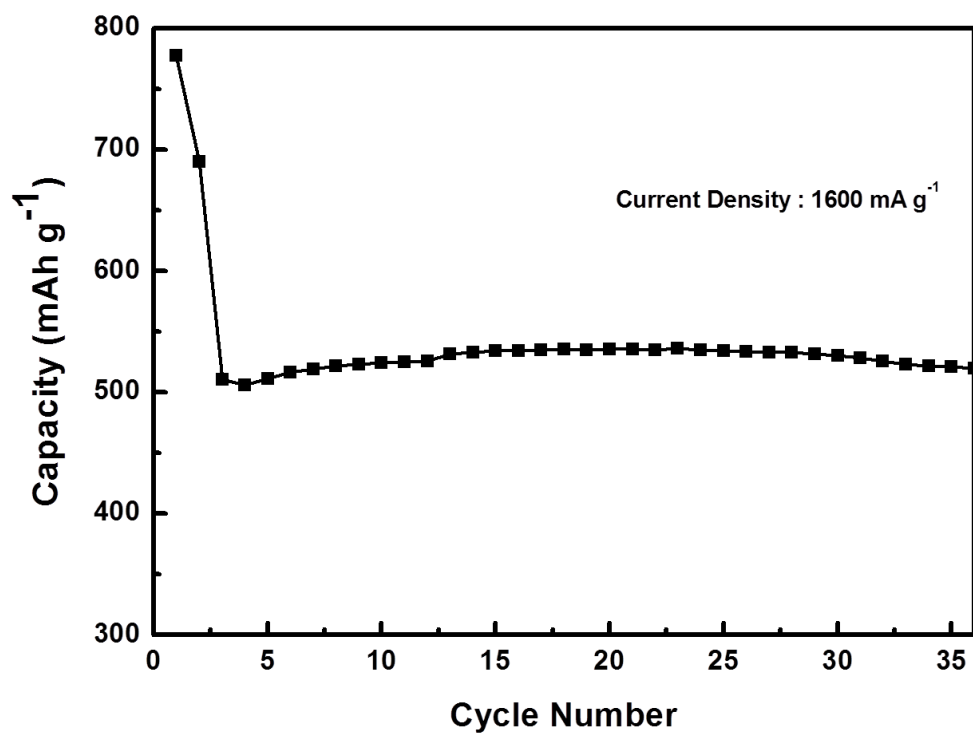
**Fig. S1.** (a) SEM, (b) TEM and (c) HRTEM images of TCM (1:4) and (d) XRD pattern of TCM (1:4).



**Fig. S2.** Charge-discharge profiles of (a) MoS<sub>2</sub>, (b) TCM (1:4), (c) LCM (1:4) and (d) LCM (1:2). Black, red, blue and green colors indicate 1<sup>st</sup>, 2<sup>nd</sup>, 5<sup>th</sup> and 10<sup>th</sup> cycle, respectively.



**Fig. S3.** Cycling performance of TCM (1 : 4) (circles, blue) and LCM (1 : 4) (squares, red).



**Fig. S4.** Cycle performance of the LCM (1:4) at current density of 1600 mA g<sup>-1</sup>.