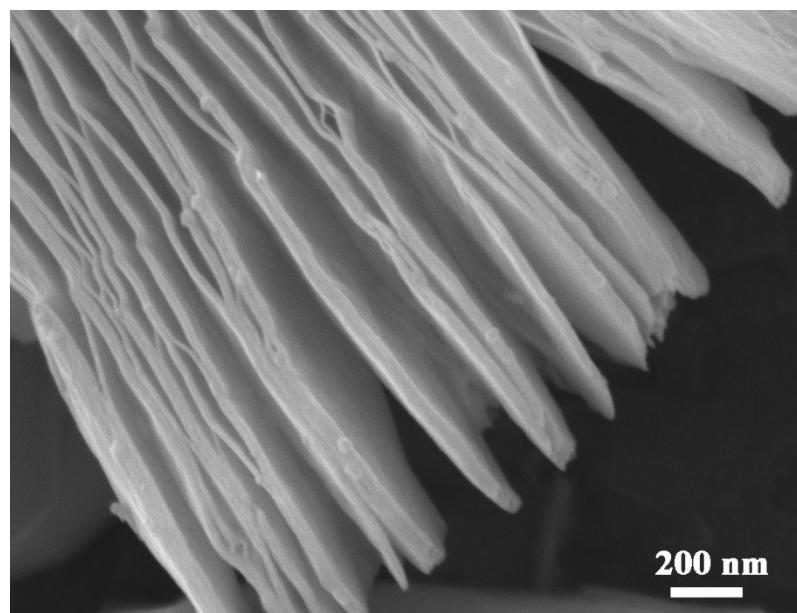


## Supporting Information

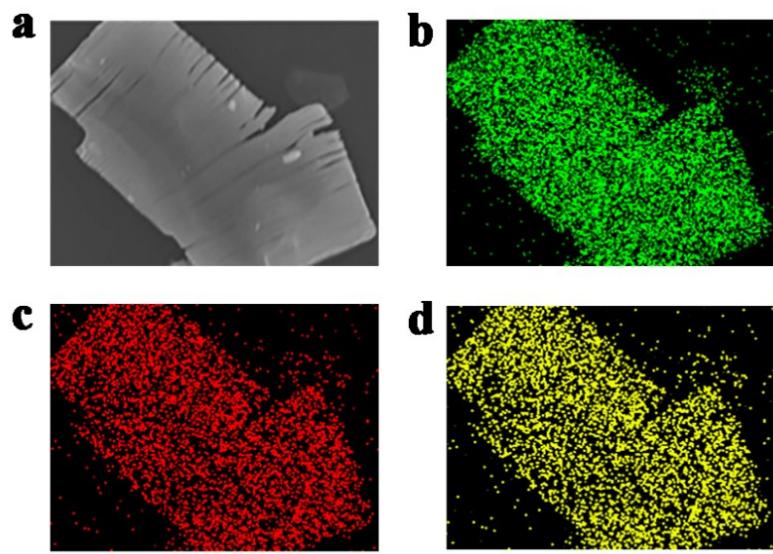
### **Preparation of MoS<sub>2</sub>/Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> Composite as anode material with enhanced sodium/lithium storage performance**

Guangyuan Du<sup>a</sup>, Mengli Tao<sup>a</sup>, Wei Gao<sup>a</sup>, Youquan Zhang<sup>a</sup>, Renming Zhan<sup>a</sup>, Shujuan Bao<sup>a\*</sup> and Maowen Xu <sup>a\*</sup>

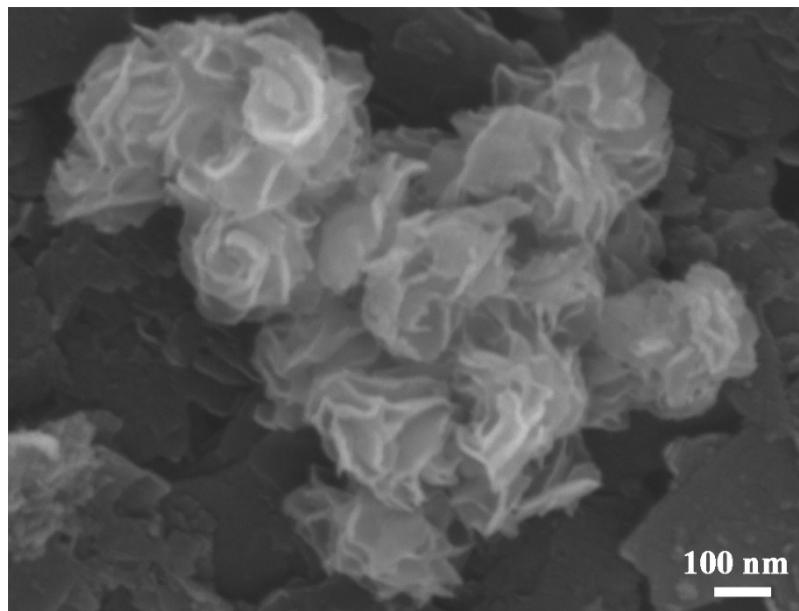
## Supplementary Figures



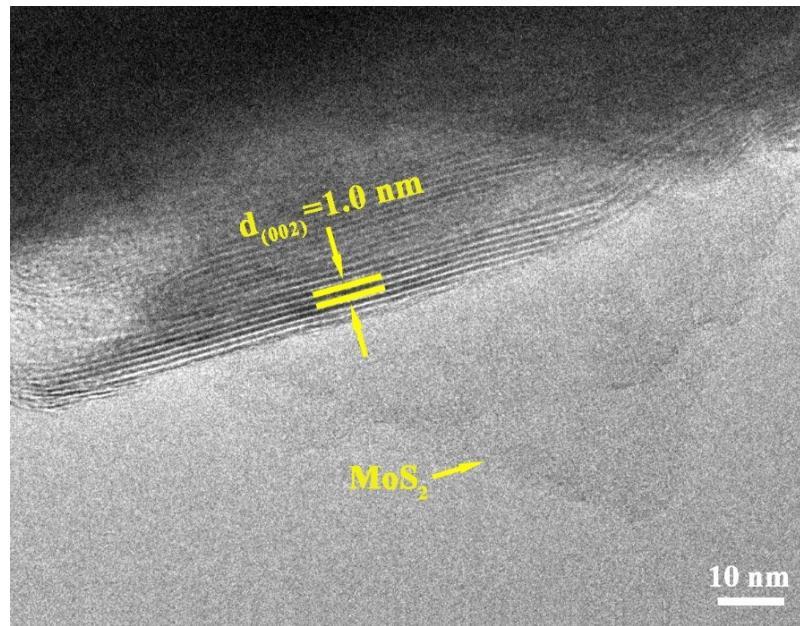
**Fig S1** FESEM image of pure  $\text{Ti}_3\text{C}_2\text{T}_x$



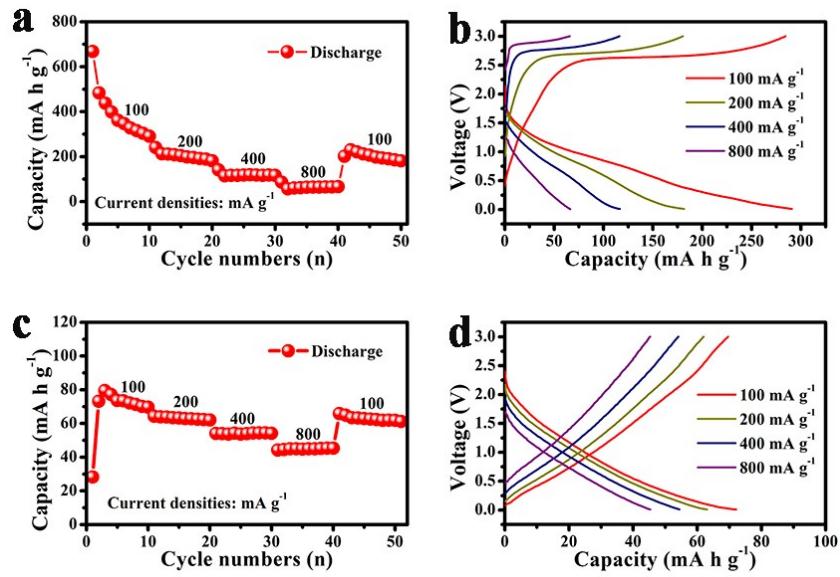
**Fig S2** (a) SEM image of  $\text{MoS}_2/\text{Ti}_3\text{C}_2\text{T}_x$  composite. (b) The distribution of Ti. (c) The distribution of Mo. (d) The distribution of S.



**Fig S3** FESEM image of pristine MoS<sub>2</sub>



**Fig S4** HRTEM image of MoS<sub>2</sub>/Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> composite



**Fig S5** Rate performance and corresponding charge/discharge curves in sodium-ion batteries. (a)-(b) Pristine MoS<sub>2</sub> (c)-(d) Pure Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>

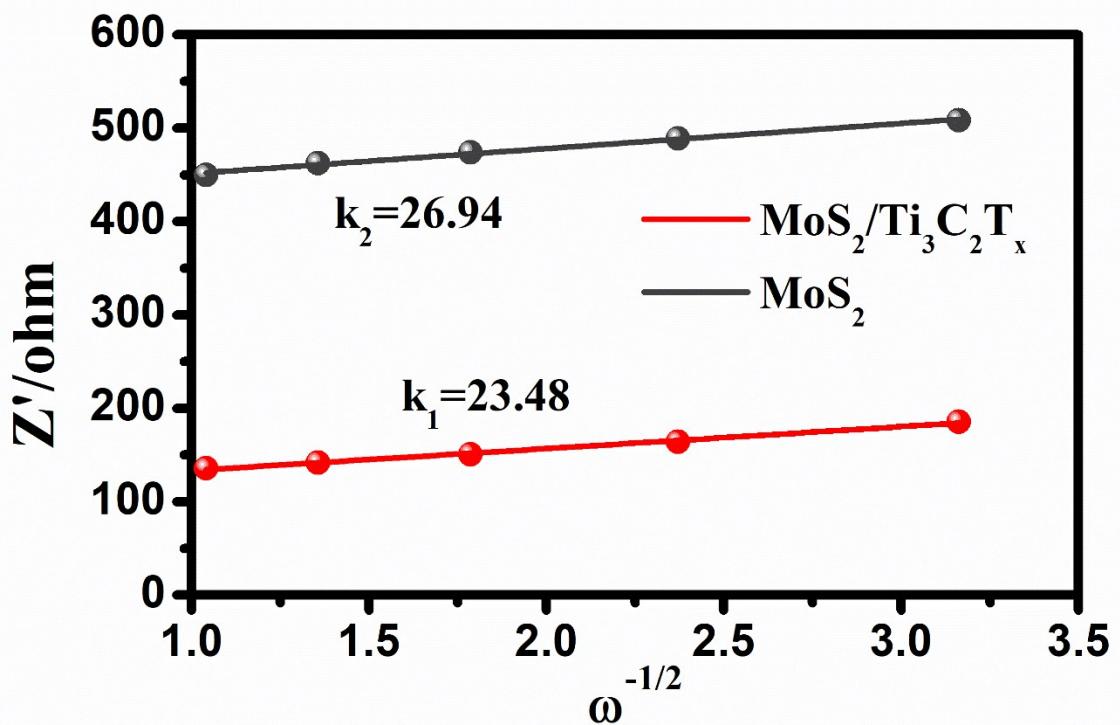
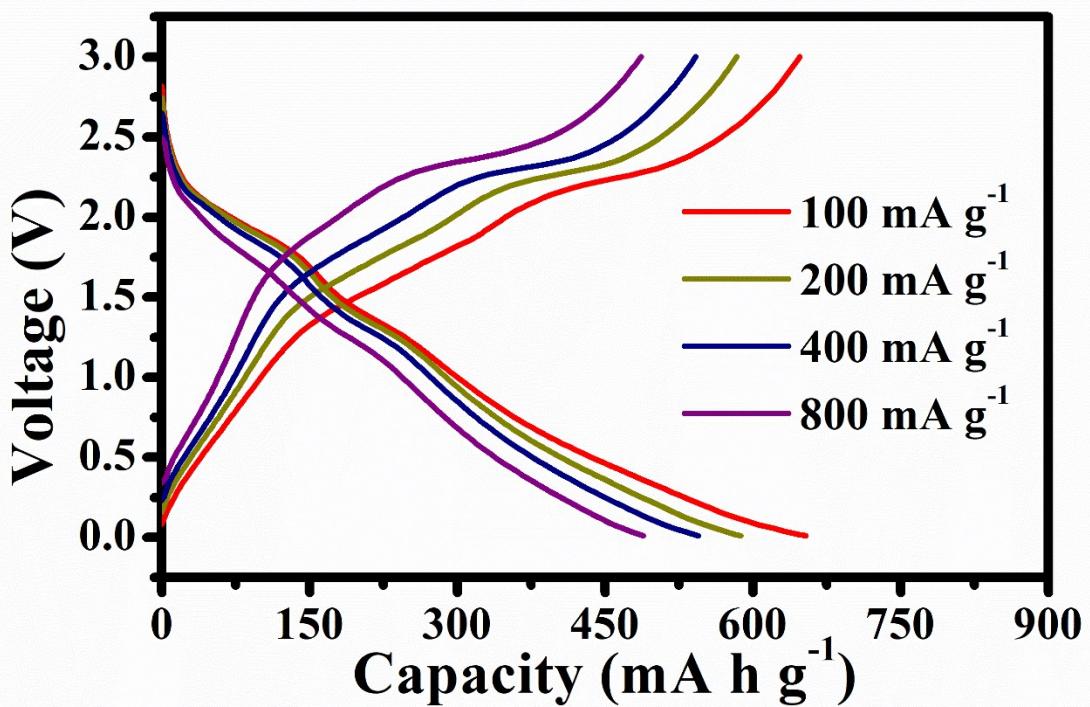
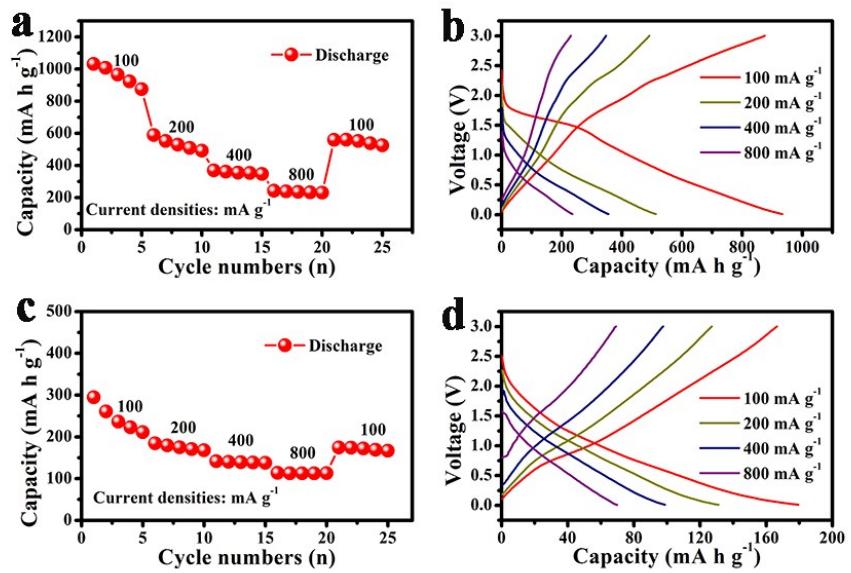


Fig S6 The reciprocal square root of angular frequency rely on the real impedance in low frequency of  $\text{MoS}_2/\text{Ti}_3\text{C}_2\text{T}_x$  and

pristine  $\text{MoS}_2$ .



**Fig S7** The charge/discharge curves of rate performance when the MoS<sub>2</sub>/Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> tested as anode material for lithium-ion batteries.



**Fig S8** Rate performance and corresponding charge/discharge curves in lithium-ion batteries. (a)-(b) Pristine MoS<sub>2</sub> (c)-(d) Pure Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>