

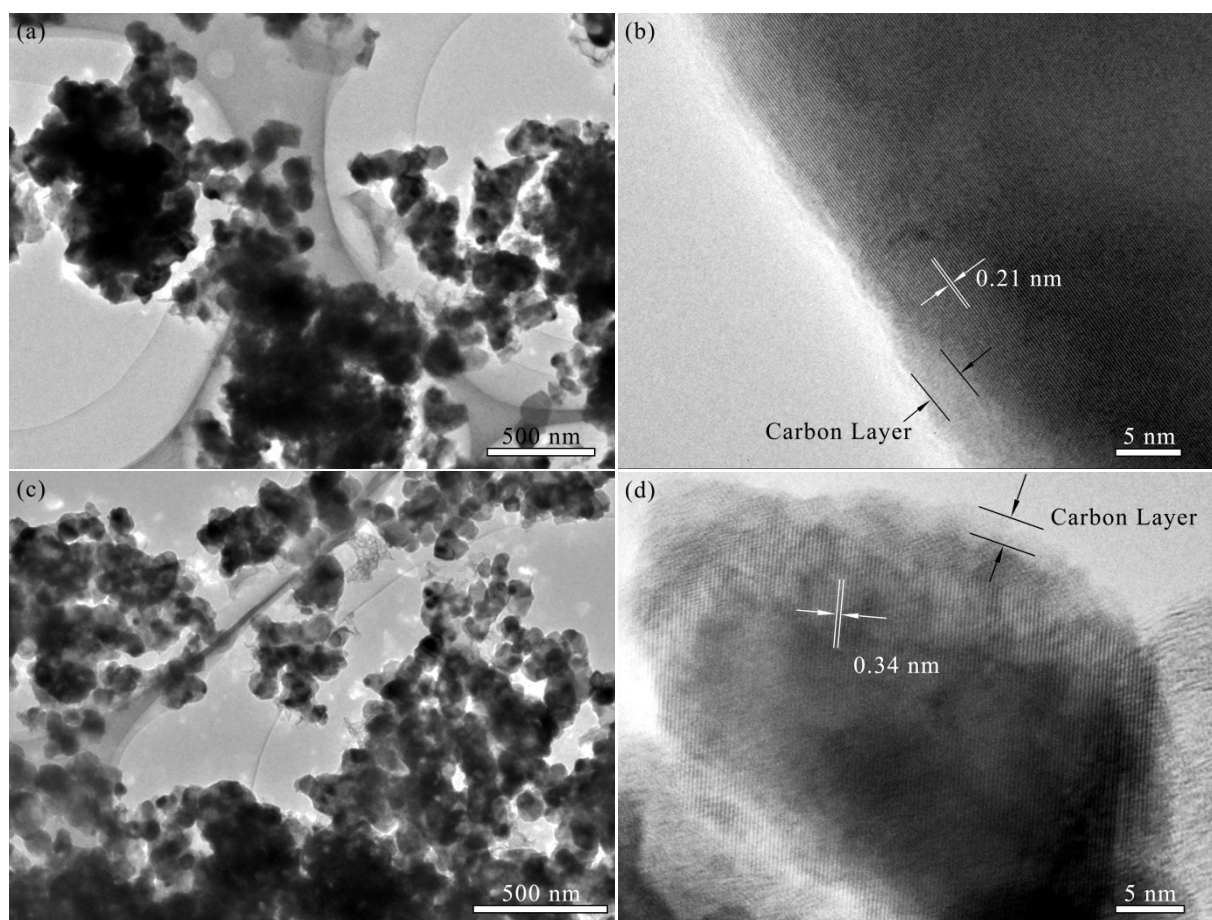
## Supporting Information

### Excellent performance of carbon-coated $\text{TiO}_2/\text{Li}_4\text{Ti}_5\text{O}_{12}$ composite with low Li/Ti ratio for Li-ion storage

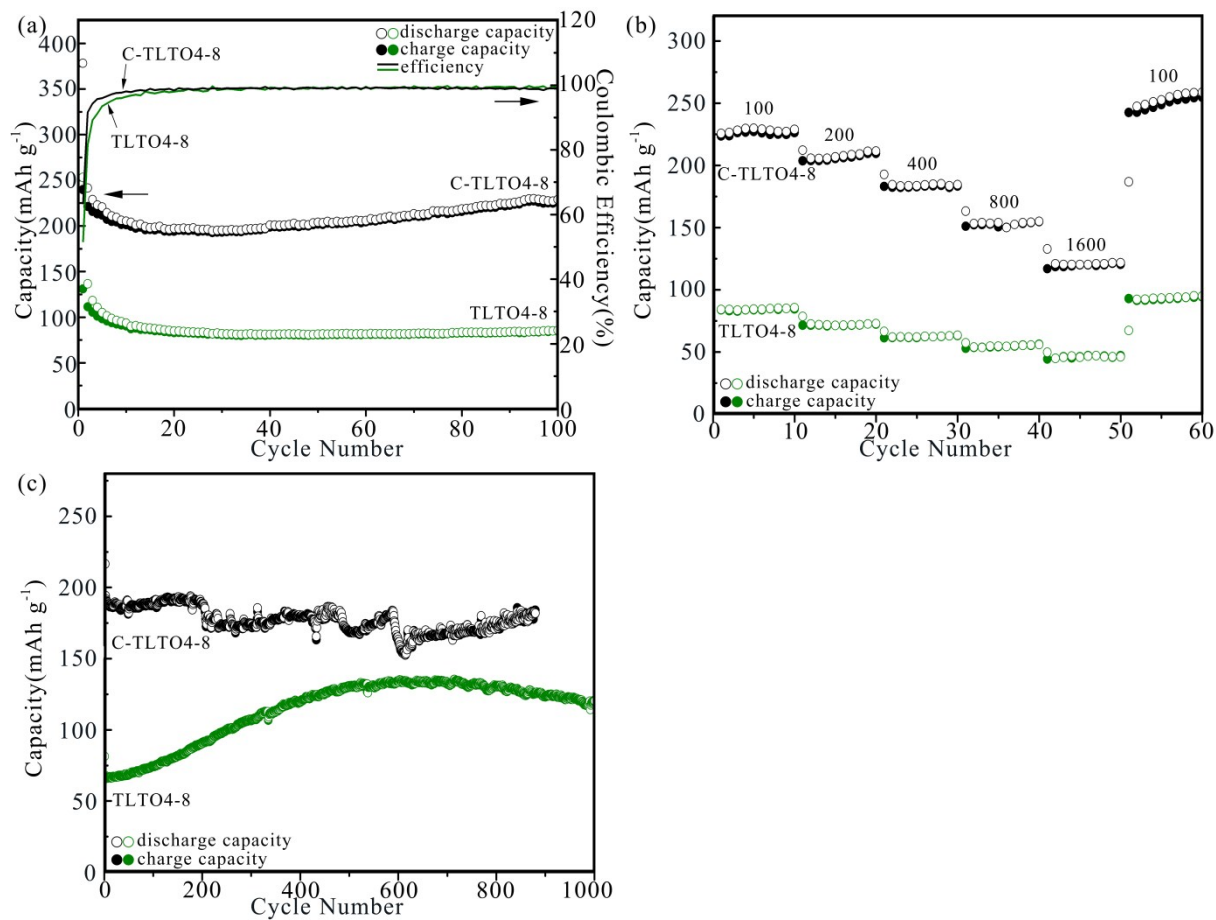
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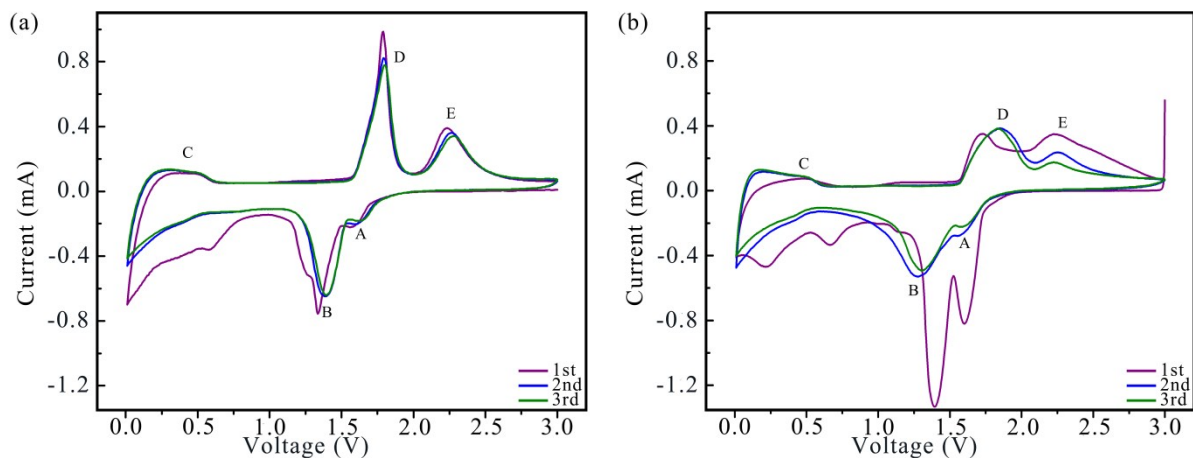
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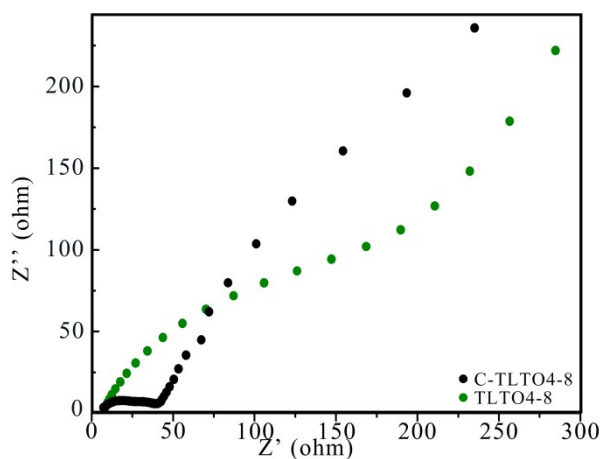
**Fig. S1** TEM images of C-LTO (a, b) and C-TiO<sub>2</sub> (c, d).



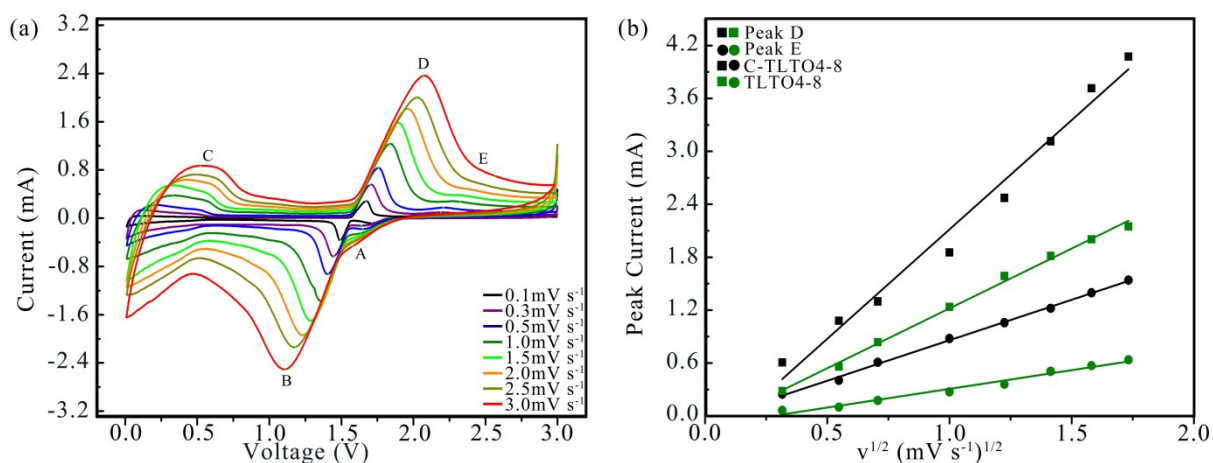
**Fig. S2** Comparison between C-TLTO4-8 and TLTO4-8, including cycling performance at 100 mA g<sup>-1</sup> (a), rate performance (b), and long-term cycling performance of C-TLTO4-8 at 500 mA g<sup>-1</sup> after the rate performance test (c).



**Fig. S3** CV plots of C-TLTO4-8 (a) and TLTO4-8 (b) at the scan rate of 0.3 mV s<sup>-1</sup> between 0.01 and 3.0 V for the initial three cycles in the same scale.



**Fig. S4** Impedance spectra of C-TLTO4-8 and TLTO4-8 after cycling 60 times at  $100 \text{ mA g}^{-1}$ .



**Fig. S5** CV plots of TLTO4-8 at different scan rates between 0.01 and 3.0 V after the initial three cycles **(a)**, and the relationship between the peak current of D, E and scan rate in C-TLTO4-8 and TLTO4-8 **(b)**.