

## Electronic Supplementary Information (ESI) for Improving the anode performances of TiO<sub>2</sub>-carbon-rGO composites in lithium ion batteries by UV irradiation

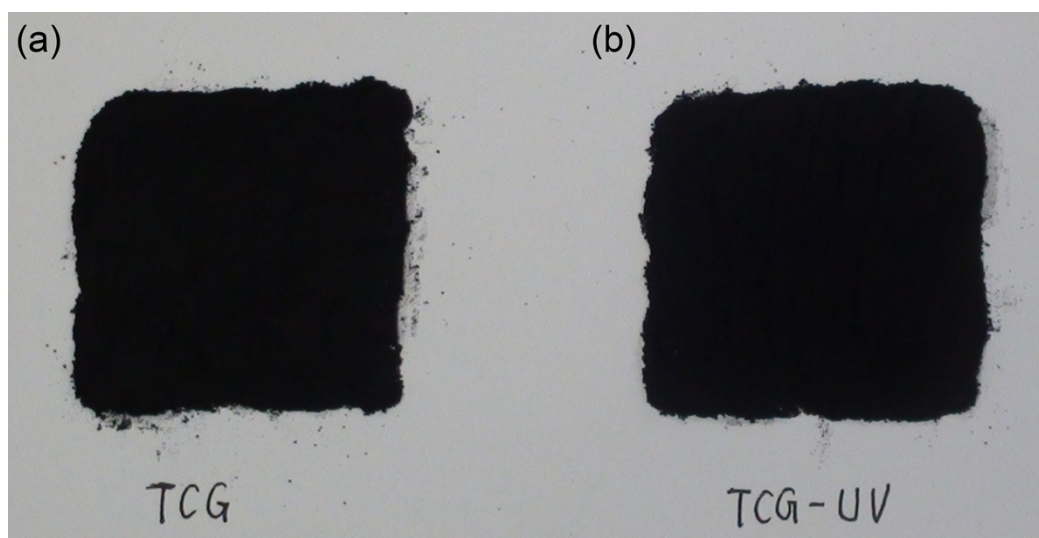
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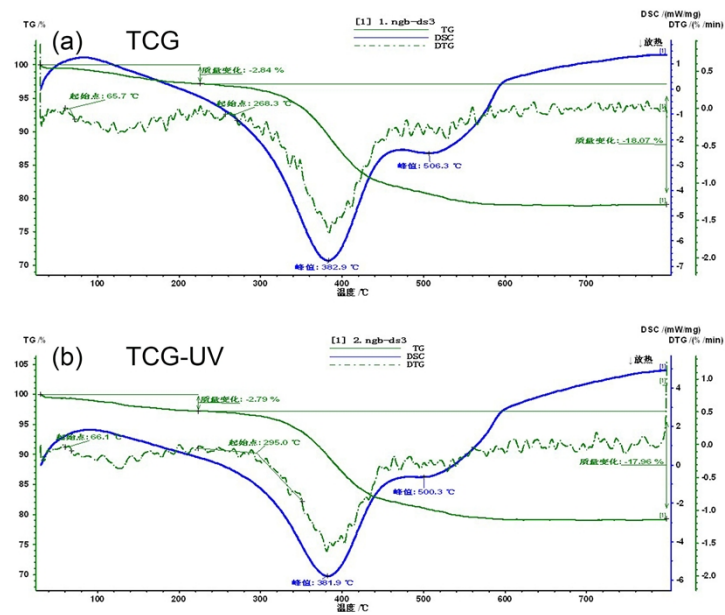
\* Corresponding Author. E-mail: lbjfc1@zzu.edu.cn (B.J. Li).

### Experimental section

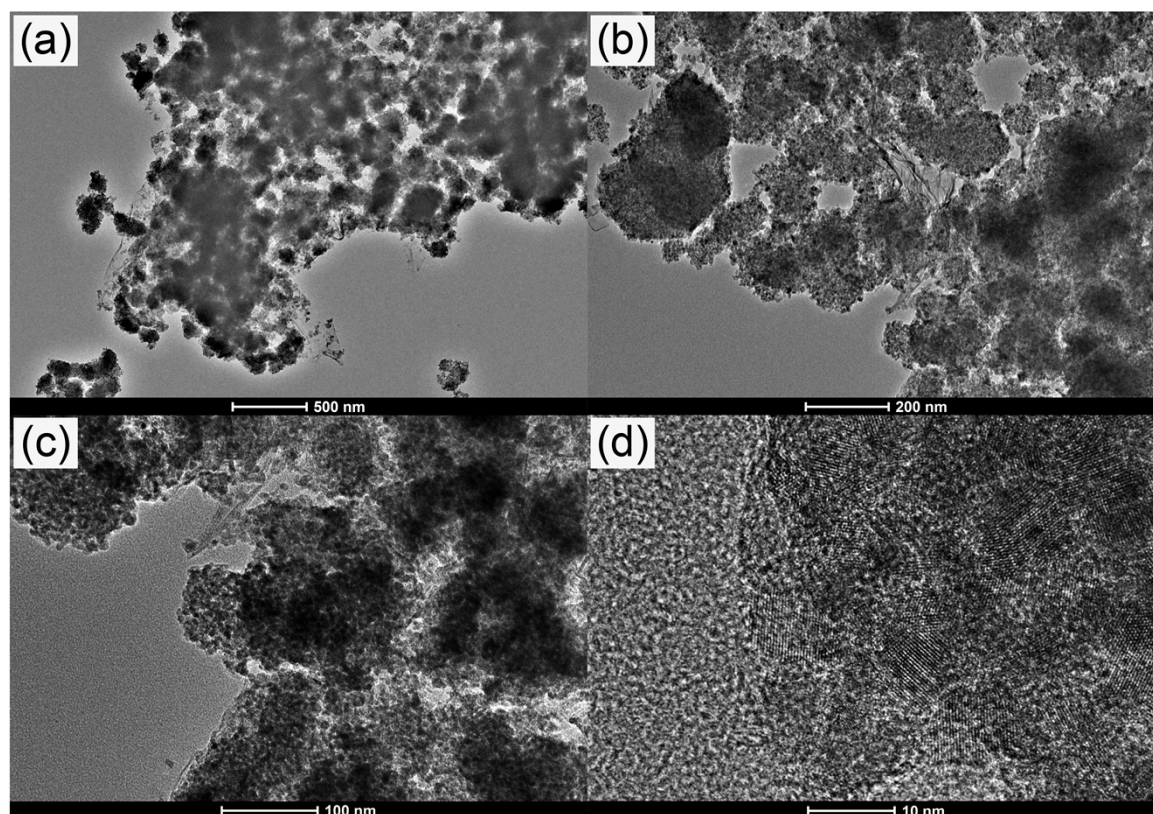
Cyclic voltammetry (CV) measurements were conducted on an electrochemistry workstation (CHI660E). The electrochemical impedance spectroscopy (EIS) measurements also were performed over a frequency range from 10<sup>5</sup> to 10<sup>-2</sup> Hz at the amplitude of the sinusoidal voltage of 5 mV and RT on the same electrochemistry workstation.



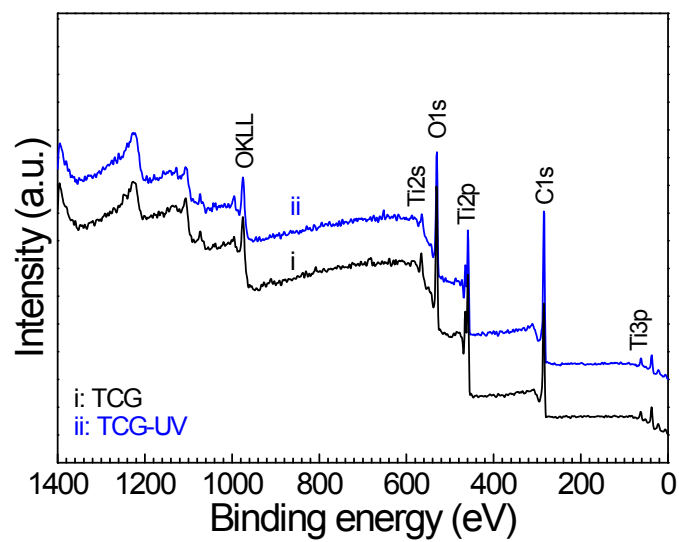
**Figure S1.** Photo images of (a) TCG and (b) TCG-UV.



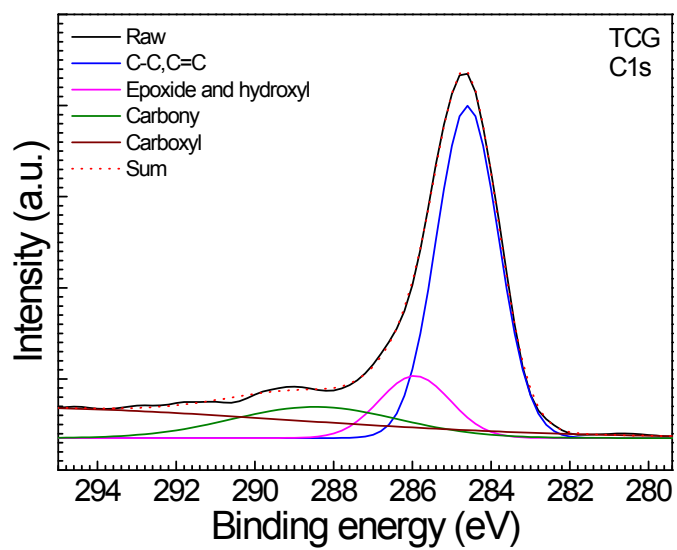
**Figure S2.** TG and DSC curves of (a) TCG and (b) TCG-UV measured in air atmosphere.



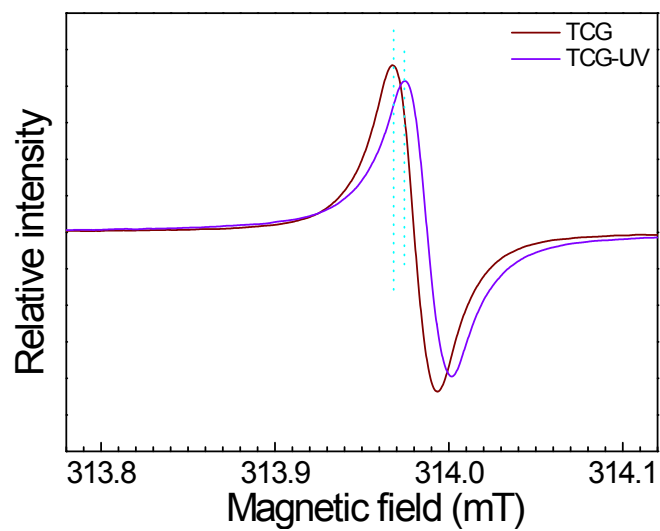
**Figure S3.** TEM images of TCG.



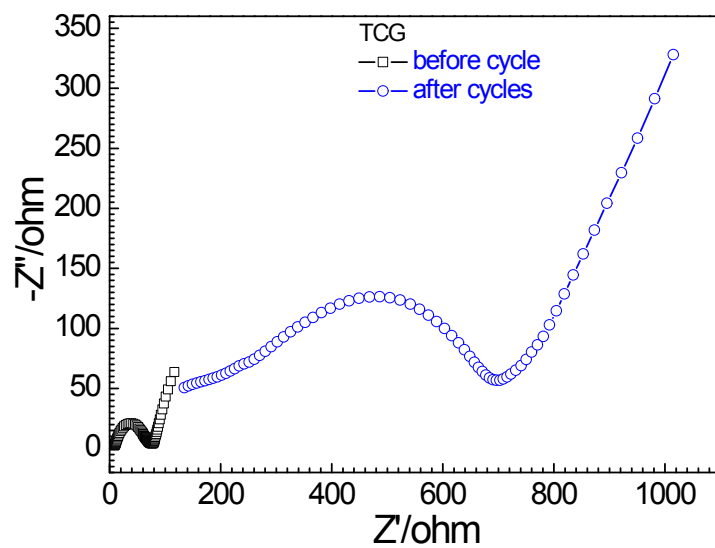
**Figure S4.** XPS spectrum of TCG and TCG-UV.



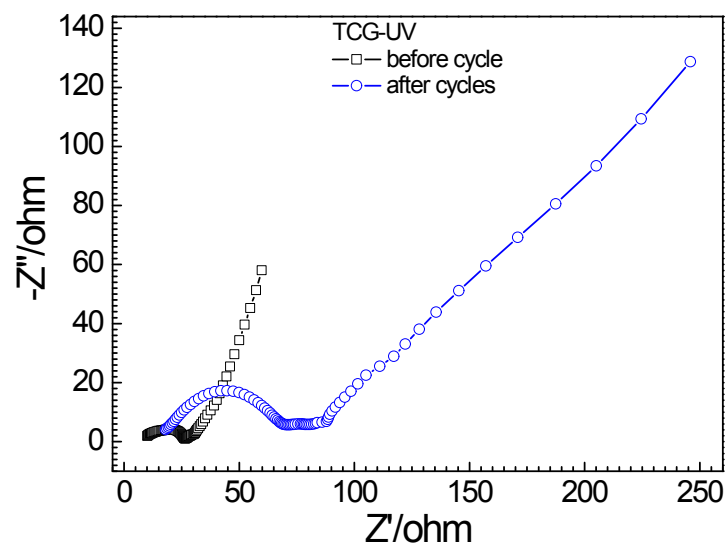
**Figure S5.** Fine XPS C1s spectrum of TCG.



**Figure S6.** ESR of TCG and TCG-UV.



**Figure S7.** EIS of TCG composite before cycle and after cycles.



**Figure S8.** EIS of TCG-UV composite before cycle and after cycles.