Electronic Supplementary Information for

## Pinecone-like hierarchical anatase TiO<sub>2</sub> bonded with carbon enabling ultrahigh cycling rates for sodium storage

Jun Chen, Guoqiang Zou, Hongshuai Hou, Yan Zhang, Zhaodong Huang and Xiaobo $\mathrm{Ji}^*$ 

College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China

Corresponding author: Xiaobo Ji E-mail: <u>xji@csu.edu.cn</u>. Fax: +86-731-88879616



Fig. S1 The SEM image of CTO compared with photograph of pinecone.



Fig. S2 TEM image of the obtained CQDs.



Fig. S3 The SEM images of the carbon coupled hierarchical  $TiO_2$  obtained by changing the CQDs addition amounts of (a) 0 mg, (b) 50 mg, (c) 100 mg, (d) 150 mg.



Fig. S4 The XPS survey scan of CQDs.



Fig. S5 The XRD pattern of CQDs.



**Fig. S6** The TGA curve of pristine TO obained in air atmosphere from room temperature to 800 °C.