Electronic Supplementary Information

# Graphene-supported $TiO_2$ nanospheres as high-capacity and long-cycle life anode material for sodium ion batteries

*Ya Xiong,[a] Jiangfeng Qian,[a] Yuliang Cao,[a] Xinping Ai,[a] Hanxi Yang*[a]*

## 1. Preparation of rGO-$TiO_2$

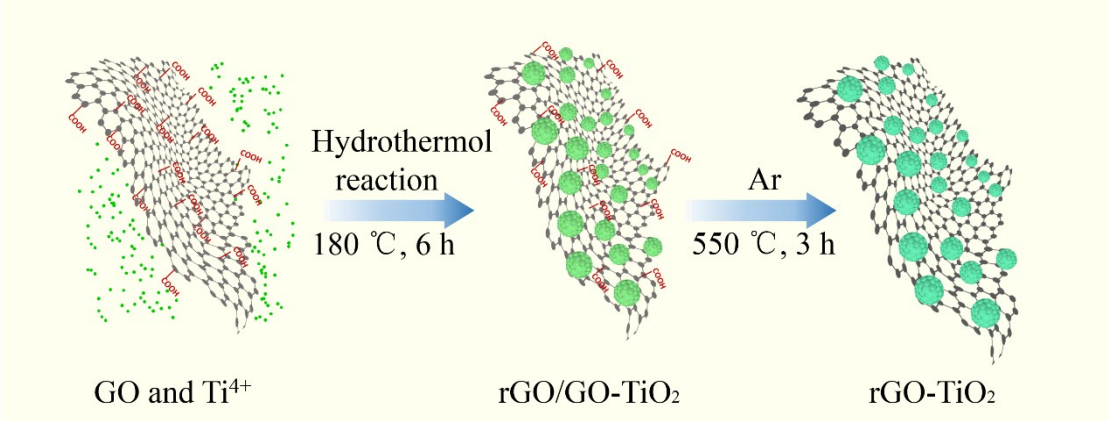


**Figure S1.** Schematic illustration of the formation process of the rGO-$TiO_2$

## 2. Morphological characterization of the b-$TiO_2$ and rGO-$TiO_2$ synthesized at different conditions

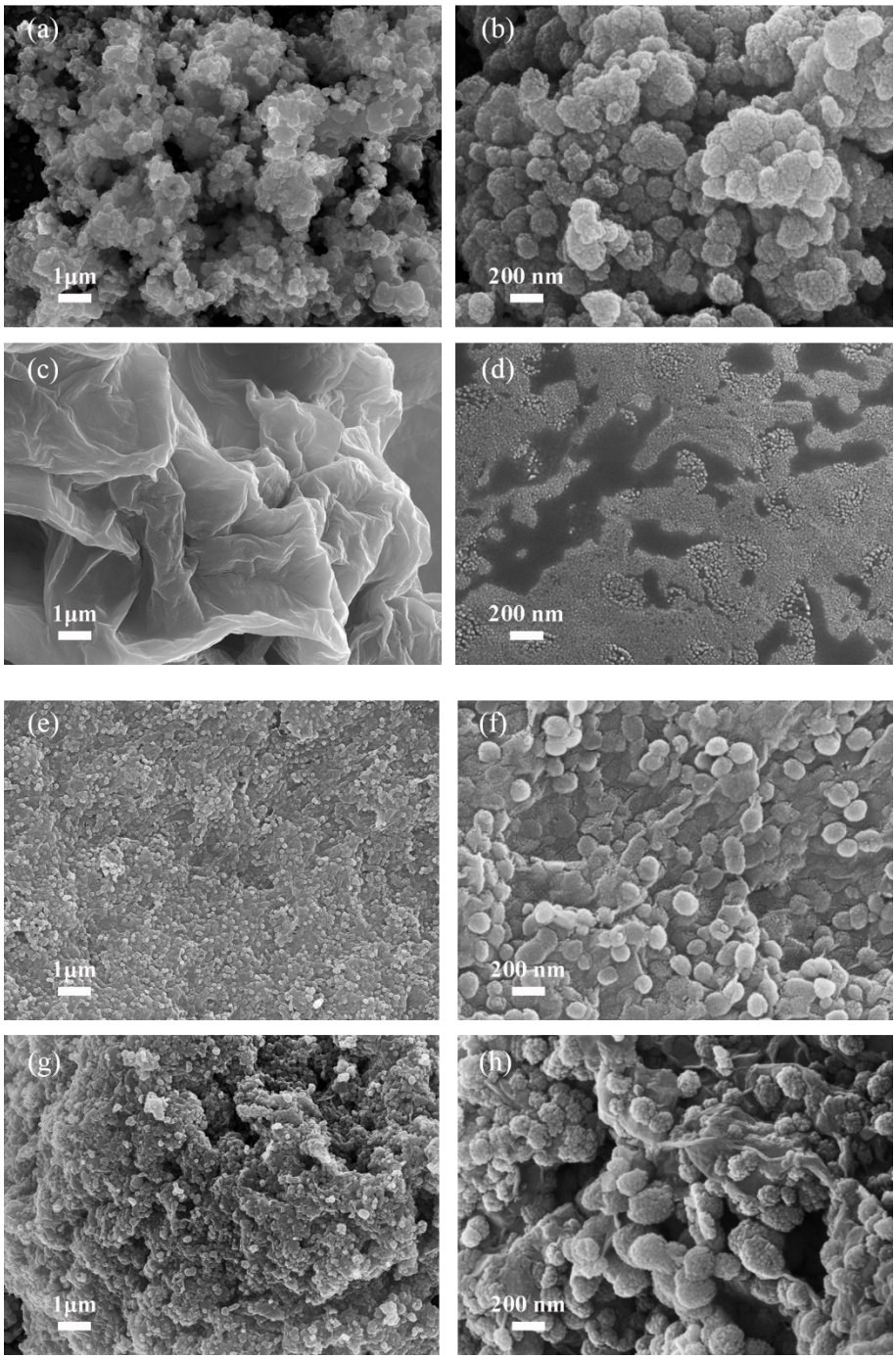


**Figure S2.** SEM images of the reference materials synthesized at different times and temperature: (a) and (b). 180 °C for 6 h without GO; (c) and (d). 100 °C for 6 h; (e) and (f). 180 °C for 3 h; (g) and (h). 180 °C for 12 h

## 3. Na-storage capacities of the reference b-$TiO_2$

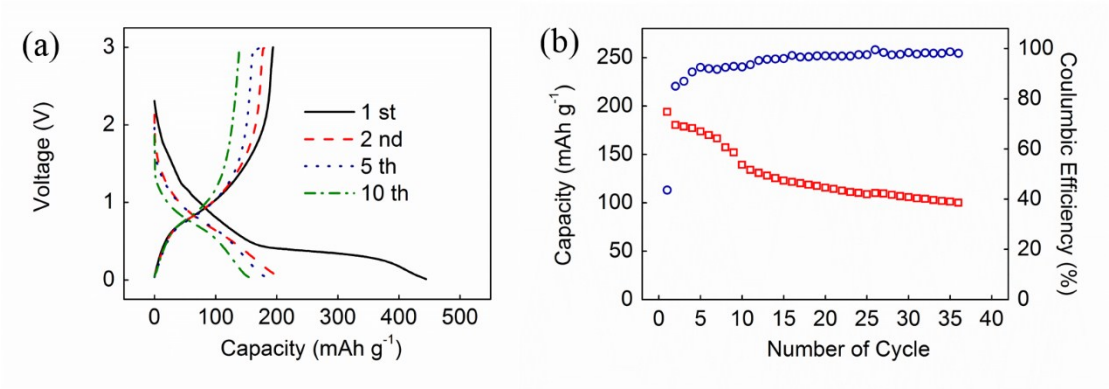


**Figure S3. (a)** Charge/discharge profiles of the b-$TiO_2$; (b) Cyclability performance of b-$TiO_2$

## 4. Cycling performance of rGO-$TiO_2$

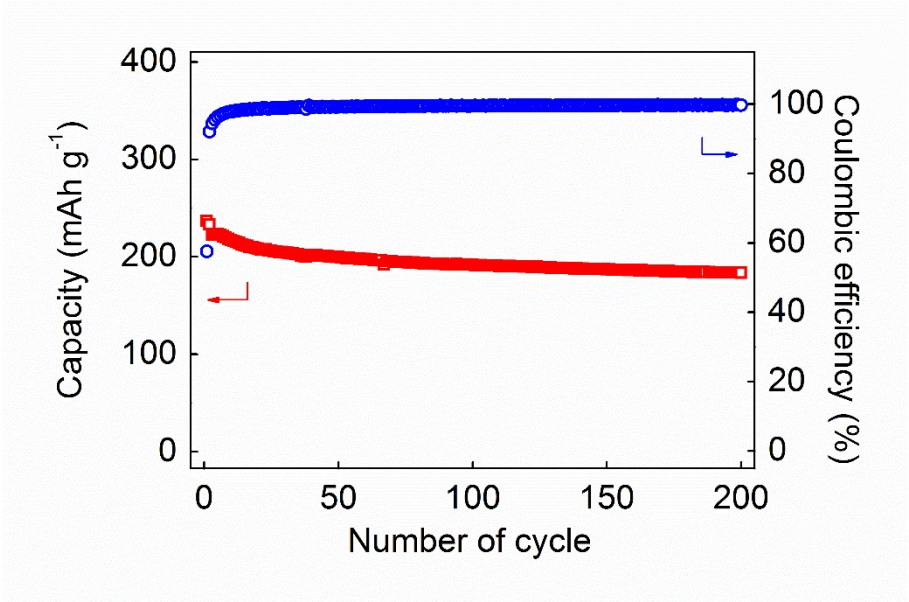


**Figure S4.** Cycling performance of rGO-$TiO_2$ anode at a constant current of 200 mA $g^{-1}$

## 5. Morphological characterization of the rGO-$TiO_2$ after cycling.

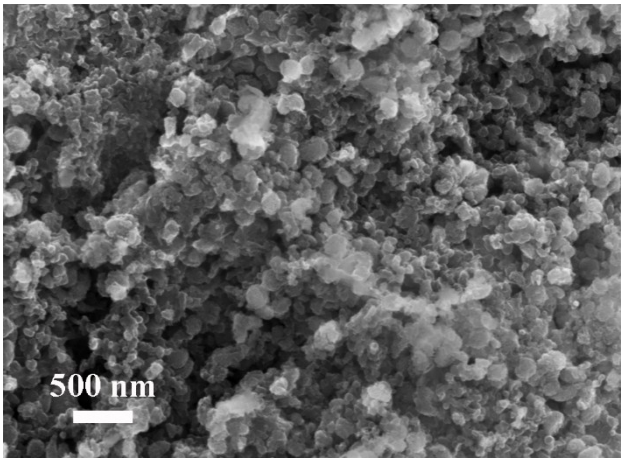


**Figure S5.** SEM image of the rGO-$TiO_2$ electrode taken from the cells after cycling for 300 cycles.