Electronic Supplementary Information (ESI)

Minky-Dot-Fabric-Shaped Composite of Porous TiO_2 Microspheres/Reduced Graphene Oxide for Lithium Ion Battery

Chenyang Zha,[‡a] Dafang He,[‡a] Jiwei Zou,[a] Liming Shen,[a*] Xiaoyan Zhang,[a] Yifeng Wang,[a] Harold H. Kung,[b] Ningzhong Bao [a*]

[a] State Key Laboratory of Material-Oriented Chemical Engineering, College of Chemistry and Chemical Engineering, Nanjing Tech University, Nanjing, Jiangsu 210009, P. R. China

[b] Department of Chemical and Biological Engineering, Northwestern University, Evanston, Illinois 60208, USA

‡ These authors contributed equally to this work

* Corresponding author:
Tel. & Fax: +86 25 83172244
E-mail: lshen@njtech.edu.cn; (L. Shen) & nzhbao@njtech.edu.cn (N. Bao)

Content

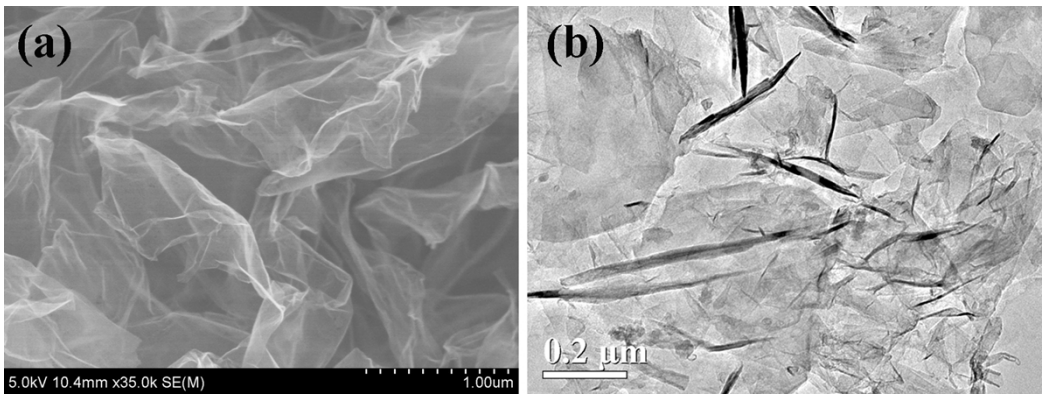

Figure S1. (a) FE-SEM and (b) TEM images of the as-synthesized GO sheets.

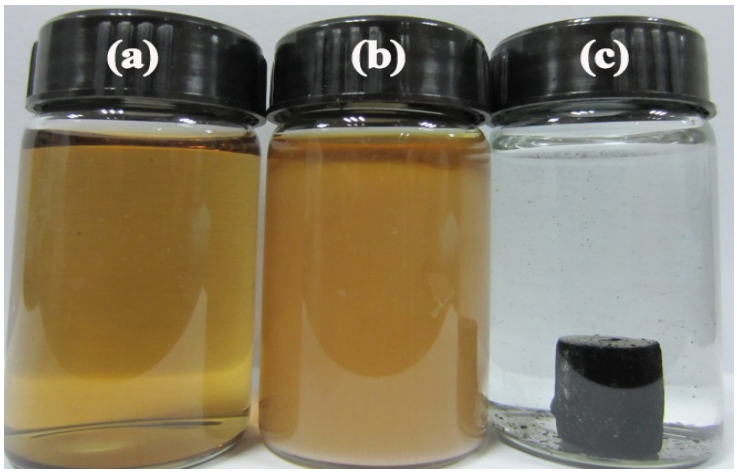

Figure S2. Optical image of (a) GO suspension, (b) suspension of TiO_2 and GO before hydrothermal treatment, and (c) the TiO_2-rGO composite after hydrothermal treatment at 180^{o}C for 12 h.

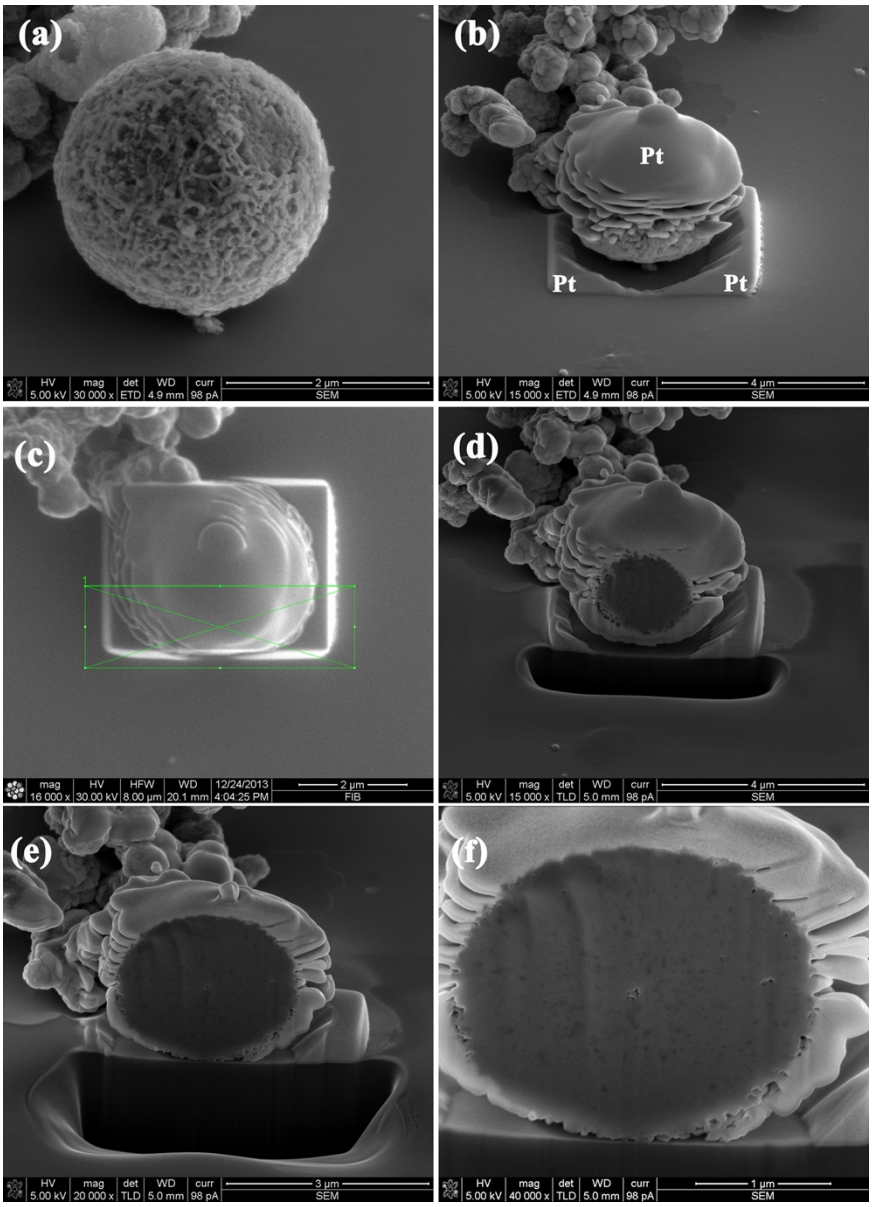

Figure S3. (a-f) FIB-SEM images of the cutting process. Note that the TiO_2 particle is covered with a thin Pt protection layer for focused ion beam cutting and the green line indicates the cutting position.

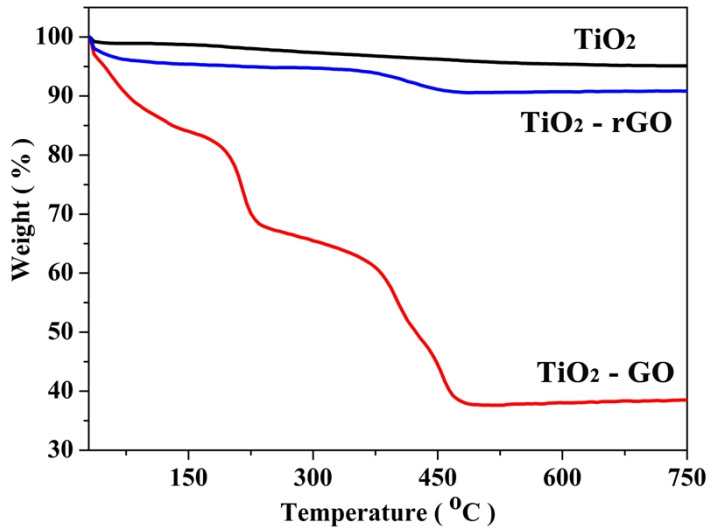

Figure S4. TGA curves of (a) TiO_2 microspheres, (b) TiO_2-rGO composite, and (c) TiO_2-GO composite. The weight loss of ~1% below 100 °C was probably due to evaporation of absorbed moisture, which is common for materials with large surface areas. The large weight loss observed up to about 750 °C among the sample TiO_2, TiO_2-rGO, and TiO_2-GO, measured to be around 3, 8, and 67 wt% up to 750 °C, were attributed to the presence of GO or rGO.

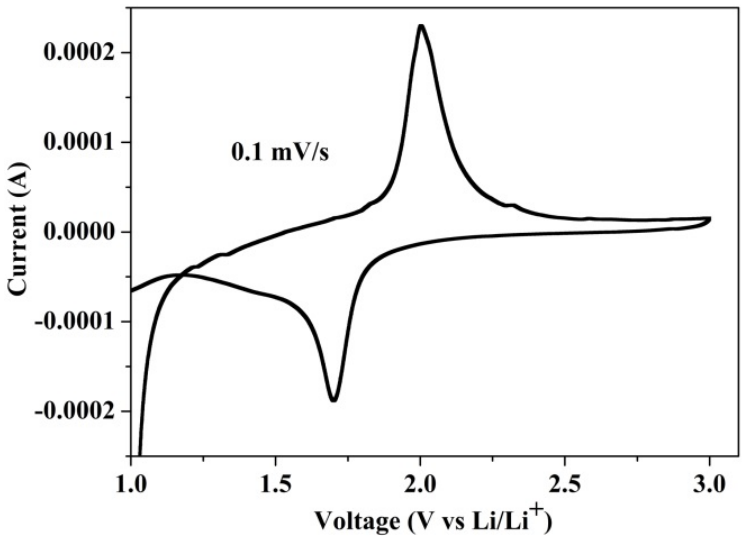

Figure S5. Cyclic voltammograms of the TiO_2-rGO composite at a scan rate of 0.1 mVs^{-1}.