

Supplementary Data

Structural and electrochemical evaluation of TiO₂- graphene oxide based sandwich structure for lithium- ion battery anodes

Yixing Ye^a, Panpan Wang^{a, b}, Hongmei Sun^{a, b}, Zhenfei Tian^a, Jun Liu^a and
Changhao Liang^{a, b*}

^aKey Laboratory of Materials Physics and Anhui Key Laboratory of Nanomaterials and Nanotechnology, Institute of Solid State Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China

^bUniversity of Science and Technology of China, Hefei 230026, China.

*Corresponding author. Tel.: +86 551 65591129; Fax: +86 551 65591434.

E-mail address: chliang@issp.ac.cn (C. H. Liang).

The color of the composite materials dispersed in solution was displayed to be green in Figure S1. When the products was collected by centrifugation and dried at 50 °C for 24 h under vacuum chamber, they will be assembled into a two-electrode CR2032-type coin cell for further electrochemical measurements. Figure S2 was the TEM images of GO synthesized by the modified Hummers way, which will be used in the design of sandwich structure. Fig. S3 shows the low- and high-magnification SEM images of as-prepared products with different types in the same experiment condition. The discharge capacity of PANI/a-TiO₂-GO/PANI at different current density was shown in figure S4 to further illustrate the advance of results sandwich structure in LIBs application. At 50 mA/g, the first discharge capacity of PANI/a-TiO₂-GO/PANI was achieved to be about 1335.1mAh/g and shown a similar plateau

at $\sim 1.5\text{V}$.



Fig. S1 The two-electrode CR2032-type coin cells assembled by the result green products.

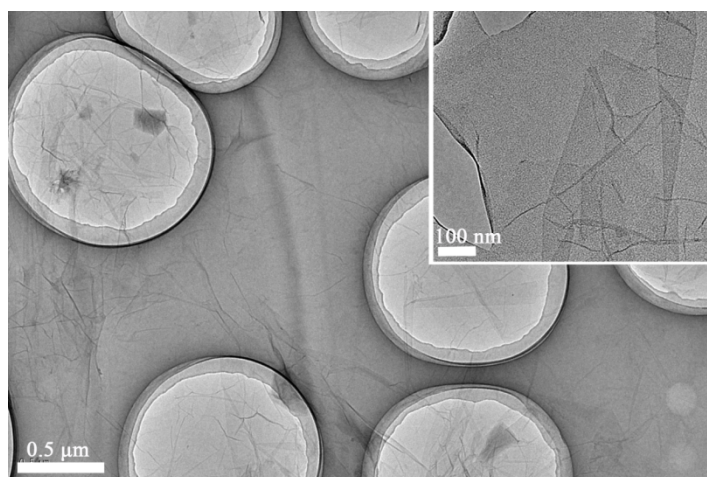


Fig. S2 The TEM images of GO synthesized by the modified Hummers way.

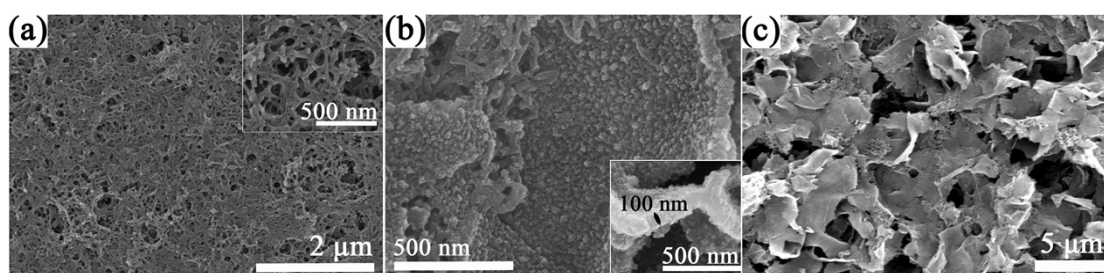


Fig. S3 Low- and high-magnification SEM images of as-prepared products with different types in the same experiment condition: (a) PANI; (b) PANI/GO/PANI; (c) PANI/a-TiO₂-GO/PANI.

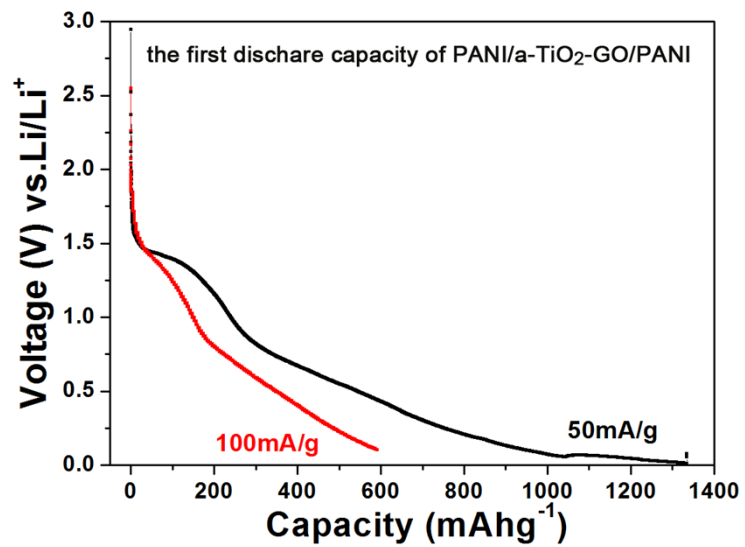


Fig. S4 The contrast of first discharge capacity of PANI/a-TiO₂-GO/PANI at 50 mA/g and 100 mA/g.