Supporting Information for

Three-dimensional porous graphene/polyaniline composites for high-rate electrochemical capacitors

Qinqin Zhou, Yingru Li, Liang Huang, Chun Li, Gaoquan Shi*

Department of Chemistry, Tsinghua University, Beijing 100084, People’s Republic of China, E-mail: gshi@tsinghua.edu.cn
Fig. S1 (a-h) Top view and cross-section SEM images of GP₁ (a, b), GP₃ (c, d), GP₆ (e, f) and GP₁₀ (g, h).
Fig. S2 (a) Top view and (b) cross-section SEM images of pristine PANI$_{100}$.

Fig. S3 TEM images of rGO.

Fig. S4 C 1s XPS spectrum of GO.
Fig. S5 (a) CV curves of GP$_1$, GP$_3$ and GP$_6$ electrodes at a scan rate of 1 V s$^{-1}$; (b-f) CV curves of (b) GP$_1$, (c) GP$_3$, (d) GP$_6$, (e) GP10 and (f) GP20 at different scan rates (V s$^{-1}$).

Fig. S6 (a) CV curves of pure PANI$_{20}$ electrode at different scan rates; inset is a magnified CV curve recorded at 100 mV s$^{-1}$.

Fig. S7 Galvanostatic charge–discharge curves of GP$_1$, GP$_3$, GP$_6$, GP$_{10}$ and GP$_{20}$ electrodes at an $i_d$ of 50 mA cm$^{-2}$. 
**Fig. S8** Areal specific capacitances of rGO, GP and PANI electrodes with different deposition cycles at a discharge current of 50 μA cm$^{-2}$.

**Fig. S9** (a) CV curves of rGO$_{100}$, GP$_{20}$ and PANI$_{100}$ electrodes at a scan rate of 100 mV s$^{-1}$; (b) Galvanostatic charge–discharge curves of rGO$_{100}$, GP$_{20}$ and PANI$_{100}$ electrodes at an $i_d$ of 10 mA cm$^{-2}$; (c) The magnified Nyquist plots of rGO$_{100}$ and GP$_{20}$ electrodes; (d) Bode plots of the imaginary areal specific capacitances versus frequencies of rGO$_{100}$, GP$_{20}$ and PANI$_{100}$ electrodes.
**Fig. S10** (a) CV curves of rGO<sub>21</sub>, GP<sub>20</sub> and PANI<sub>5</sub> electrodes at a scan rate of 1 V s<sup>−1</sup> (inset is the magnified CV of PANI<sub>5</sub>); (b) Areal specific capacitances calculated from the charge-discharge curves of rGO<sub>21</sub>, GP<sub>20</sub> and PANI<sub>5</sub> electrodes at different i<sub>d</sub>s; (c) Bode plots of the imaginary area specific capacitances versus frequencies of rGO<sub>21</sub>, GP<sub>20</sub> and PANI<sub>5</sub> electrodes (inset is the magnified curve of PANI<sub>5</sub>).