

Supplementary information

High performance supercapacitor based on polyaniline nanowire arrays grown on three-dimensional graphene with small pore sizes

Teng Zhang¹, Hongyan Yue^{1,*}, Xin Gao¹, Fei Yao², Hongtao Chen¹, Xinxin Lu¹,
Yuanbo Wang¹, Xinrui Guo¹

1 School of Materials Science and Engineering, Harbin University of Science and Technology, Harbin 150040, People's Republic of China

2 Department of Materials Design and Innovation, University at Buffalo, North Campus, Buffalo 14260, USA

* Corresponding authors: Tel: +86-451-86392258; E-mail: hyyue@hrbust.edu.cn (Hongyan Yue).

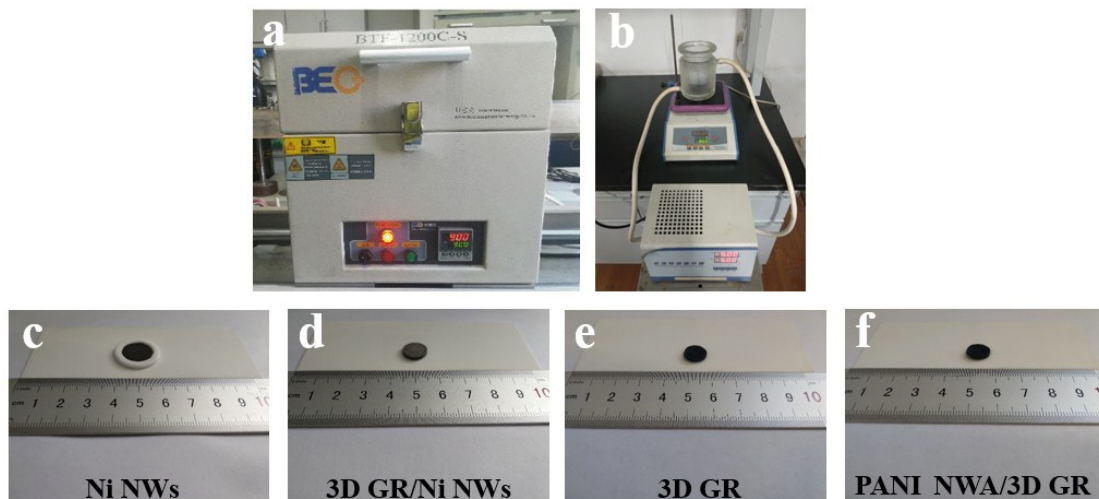


Fig.S1 The photographs of experimental equipment and samples at each stage of the experiment. (a) The equipment of synthesizing the 3D GR, (b) The equipment of synthesizing the PANI NWA/3D GR, (c) Ni NWs, (d) 3D GR/Ni NWs, (e) 3D GR, (f) PANI NWA/3D GR.

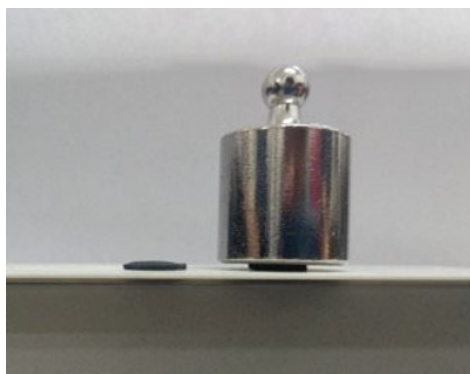


Fig.S2 PANI NWA/3D GR under the pressure of 100 g weight.

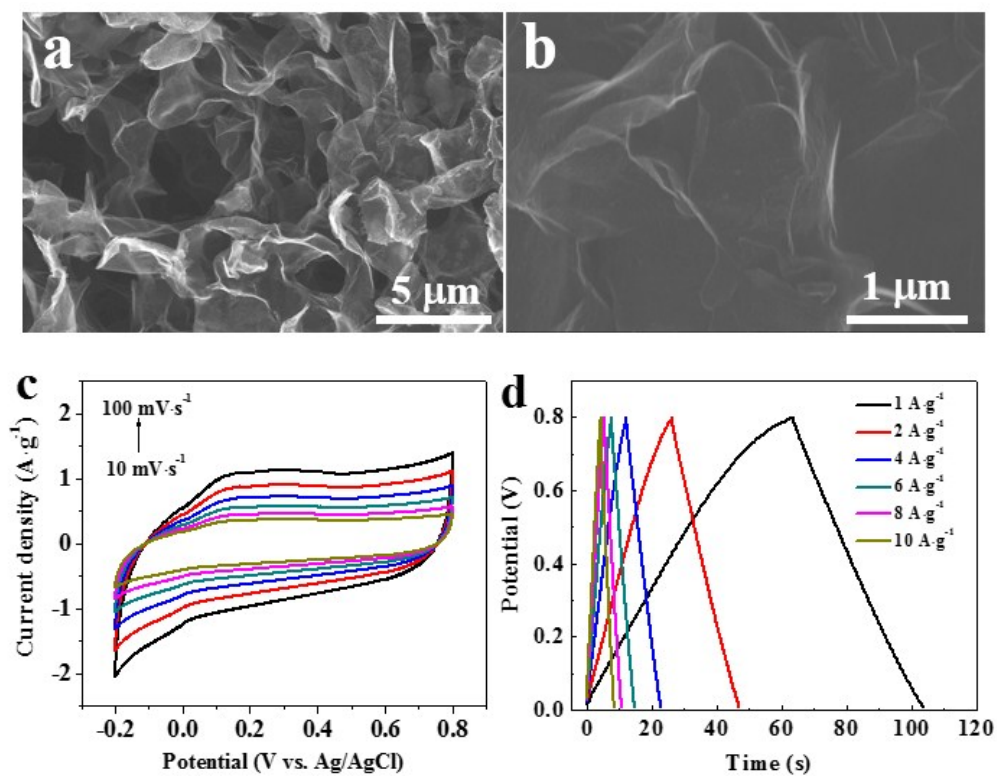


Fig.S3 SEM images and electrochemical properties of PANI NWA/3D GR without the HNO_3 treatment. (a) SEM images, (b) magnified image of (a), (c) CV curves at various scan rates, (d) GCD curves at various current densities.

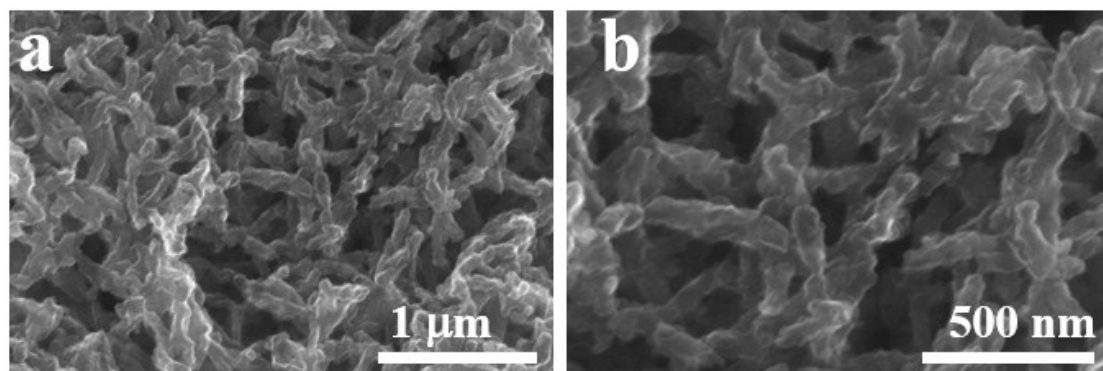


Fig.S4 SEM images of the PANI with different magnifications. (a) low magnification, (b) high magnification.

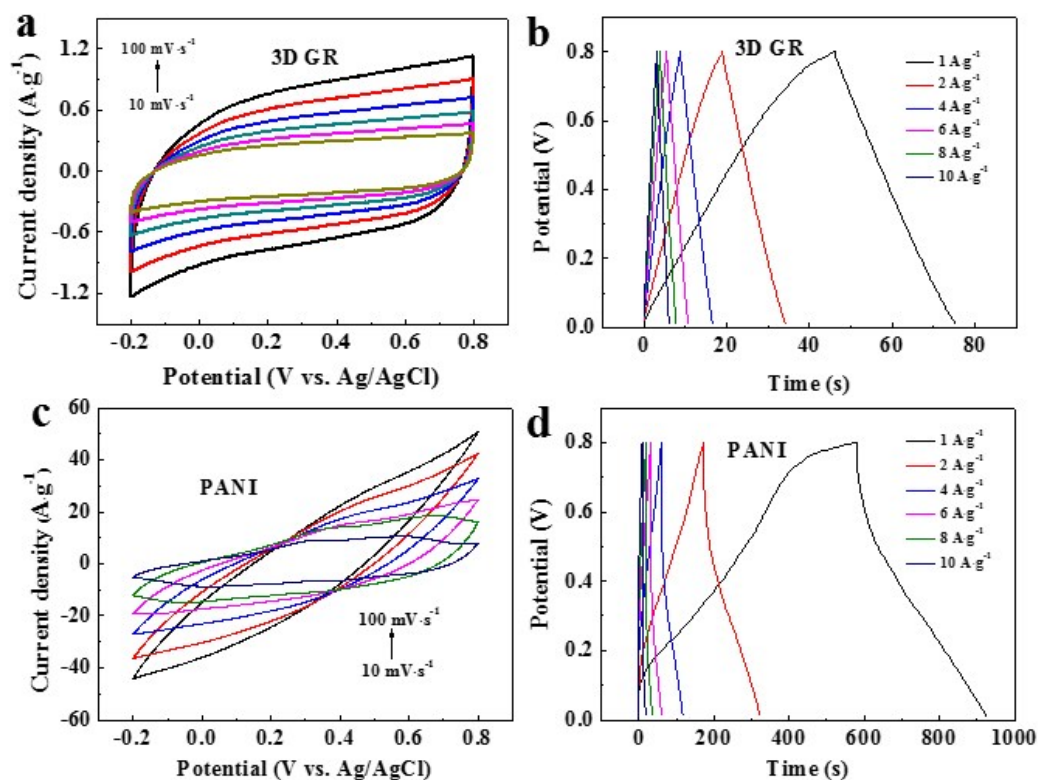


Fig.S5 Electrochemical performance of the 3D GR and PANI. (a) CV curves of 3D GR at various scan rates, (b) GCD curves of 3D GR at various current densities, (c) CV curves of PANI at various scan rates, (d) GCD curves of PANI at various current densities.