## **Supplementary information**

## Facile fabrication of novel efficient NiCo2O4@NiAl-LDH/NF and high electrochemical

## performance Fe<sub>2</sub>O<sub>3</sub>@rGO electrodes for hybrid supercapacitor

Xiaoxuan Liu<sup>a,c,#</sup>, Wenwen Tan<sup>a,#</sup>, Zao Jiang<sup>b</sup>, Yu Hao<sup>c</sup>, Yong Wang<sup>a</sup>, Jingyi Ye<sup>a</sup>, Qi Feng<sup>a,\*</sup>, Longjun Xu

<sup>a</sup>, Chenglun Liu <sup>a,d, \*</sup>

<sup>a</sup> State Key Laboratory of Coal Mine Disaster Dynamics and Control, Chongqing University, Chongqing,

400044, PR China

<sup>b</sup> School of Emergency Management, Xihua University, Chengdu, 610101, PR China

<sup>c</sup> Science and Technology Department, Chongqing Vocational Institute of Engineering, Chongqing 402260, PR China

<sup>d</sup> College of Chemistry and Chemical Engineering, Chongqing University, Chongqing, 400044, PR China

<sup>#</sup> Xiaoxuan Liu and Wenwen Tan contribute equally to the paper

\*. Corresponding Author

Tel: +86 18223208007. E-mail: qifeng868@cqu.edu.cn

Tel: +86 13883702103. E-mail: xlclj@cqu.edu.cn

To optimize the reaction conditions, were changed, and a series of  $Fe_2O_3$ @rGO composite materials were prepared for the different hydrothermal reaction temperatures. The electrochemical properties of the electrode materials were investigated in a three-electrode system. Fig. S1 (a) shows the CV curve of Fe<sub>2</sub>O<sub>3</sub>@rGO prepared at different hydrothermal temperatures at a sweeping speed of 10 mV s<sup>-1</sup>. It can be observed that the area enclosed by the closed CV curve is 180 °C > 200 °C > 220 °C > 160 °C, indicating that 180 °C is the best reaction temperature, which is consistent with the GCD curve corresponding to Fig. S1(b).

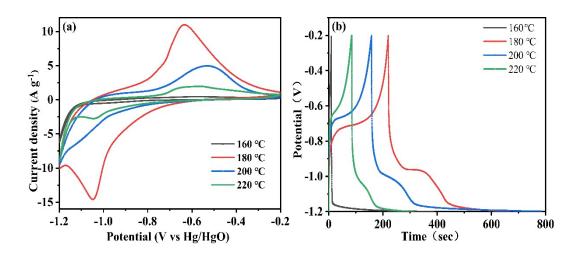


Fig. S1 (a) CV curves of  $Fe_2O_3$ @rGO prepared at different hydrothermal temperatures at 10 mV s<sup>-1</sup> sweep speed; (b) GCD curves of  $Fe_2O_3$ @rGO prepared at different hydrothermal temperatures under 2 A g<sup>-1</sup> current density.