

**Hierarchical porous Nitrogen doped reduced graphene oxide  
prepared by surface decoration-thermal treatment method as high-  
activity oxygen reduction reaction catalyst and high-performance  
supercapacitor electrodes**

Zhijun Jia<sup>a</sup>, Baoguo Wang<sup>b</sup>, Yi Wang<sup>a\*</sup>, Tao Qi<sup>a</sup>, Yahui Liu<sup>a</sup>, Qian Wang<sup>c</sup>

*<sup>a</sup>National Engineering Laboratory for Hydrometallurgical Cleaner Production  
Technology, Institute of Process Engineering, Chinese Academy of Sciences, Beijing  
100190, China*

*<sup>b</sup>Department of Chemical Engineering, Tsinghua University, Beijing 100084, China*

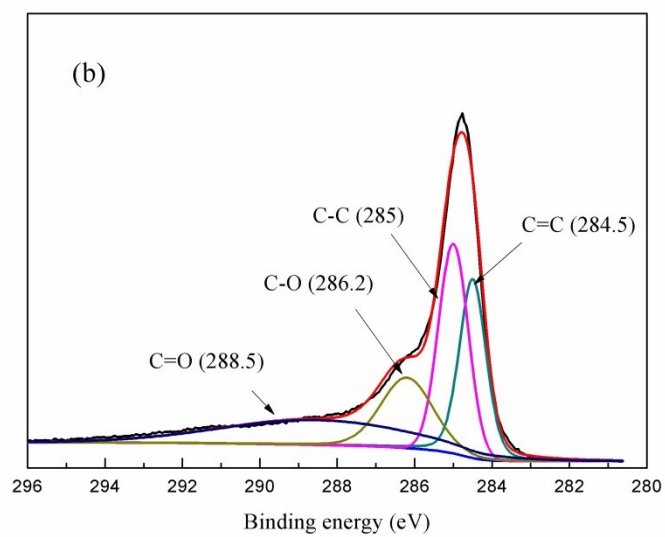
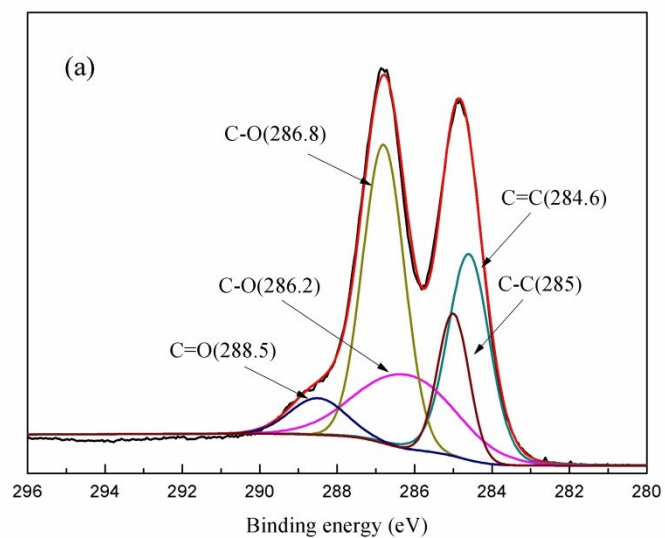


Fig. S1 (a) XPS analysis of the C 1s peak of GO; (b) XPS analysis of the C 1s peak of

rGO<sub>A</sub>

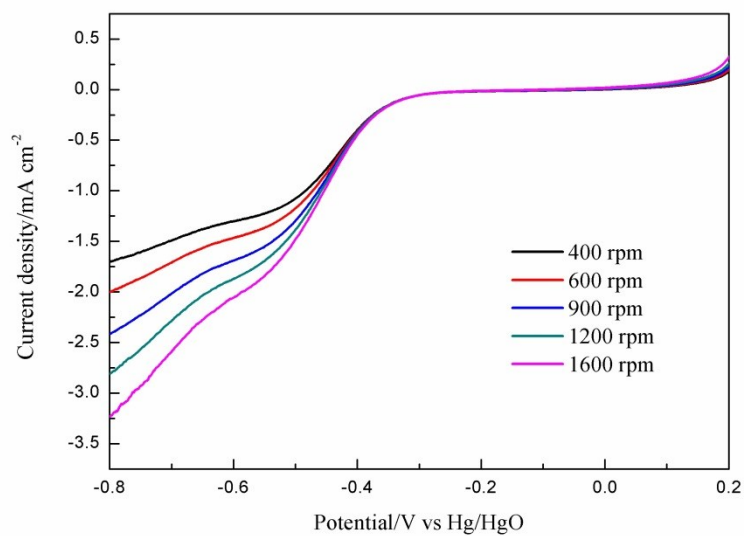
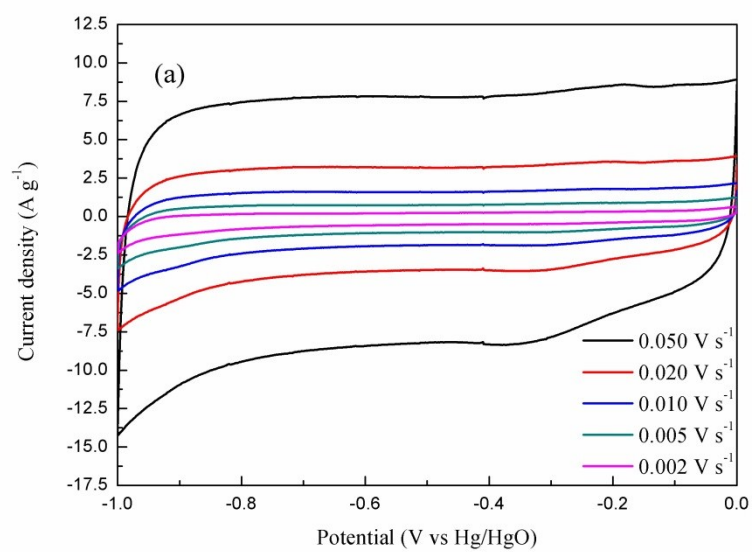
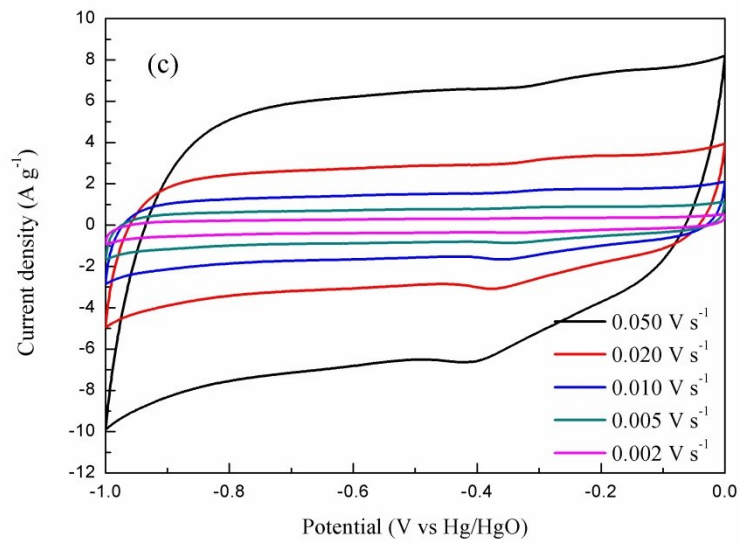
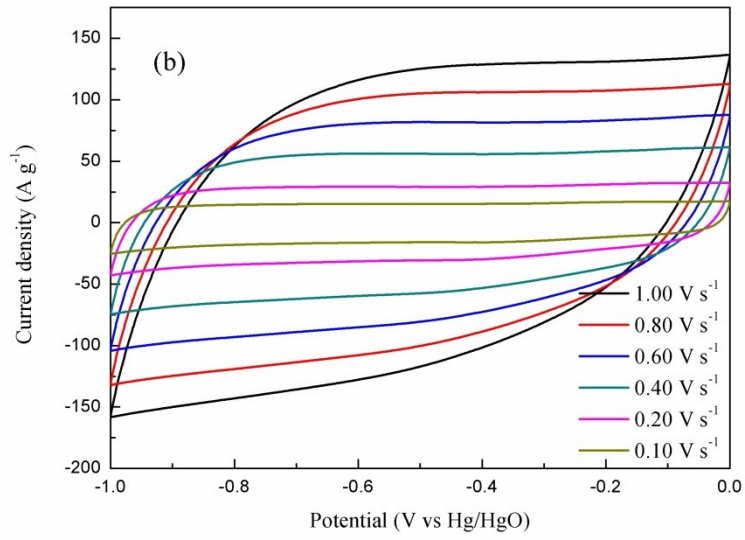


Fig. S2 ORR polarization curves (at different rotation speeds) of rGO<sub>A</sub>





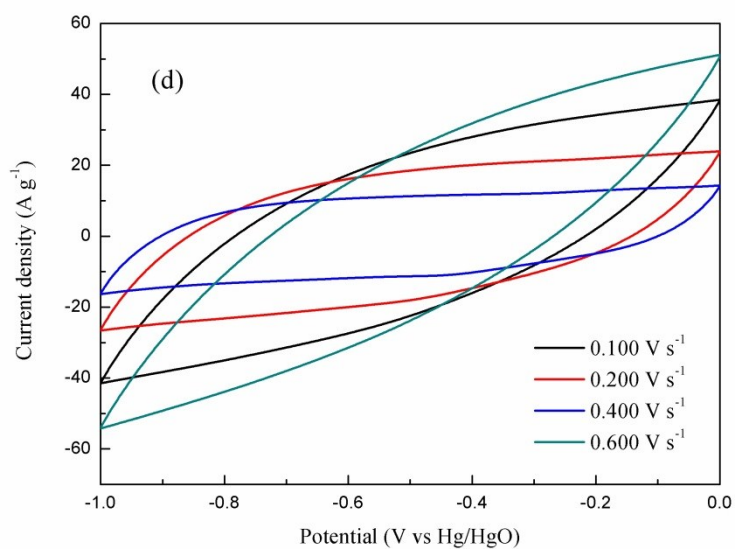
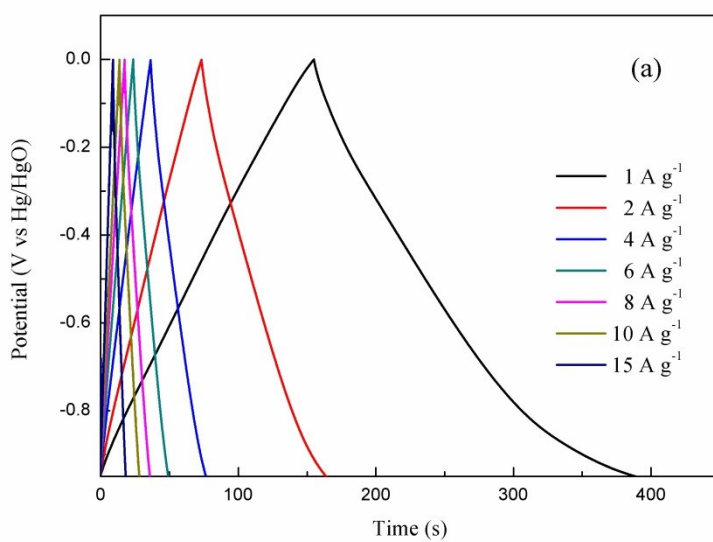
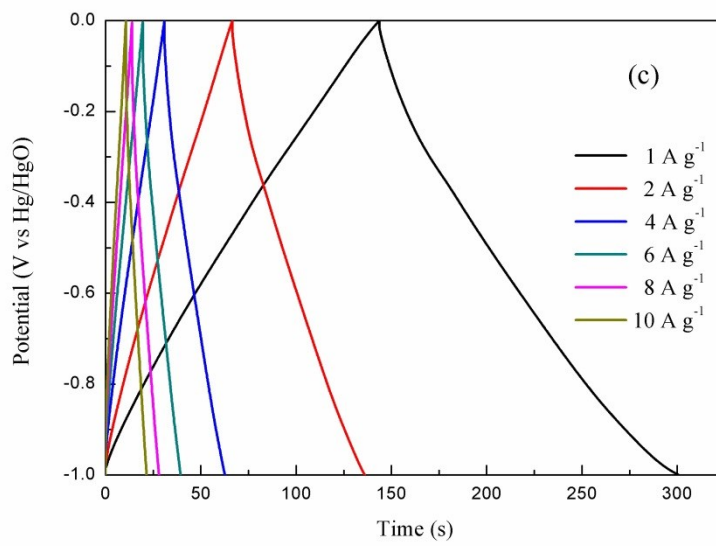
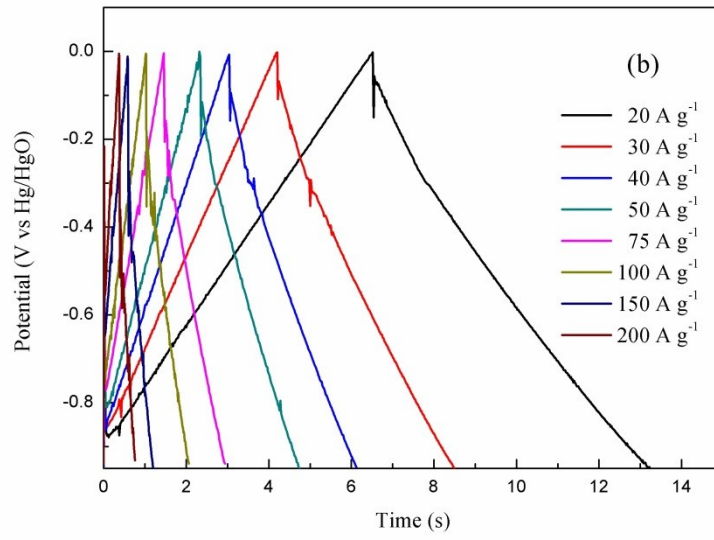


Fig. S3 (a) and (b) CVs of as-prepared  $\text{MrGO}_{\text{th}}$  at different scan rates; (c) and (d) CVs of as-prepared  $\text{rGO}_{\text{A}}$  at different scan rates





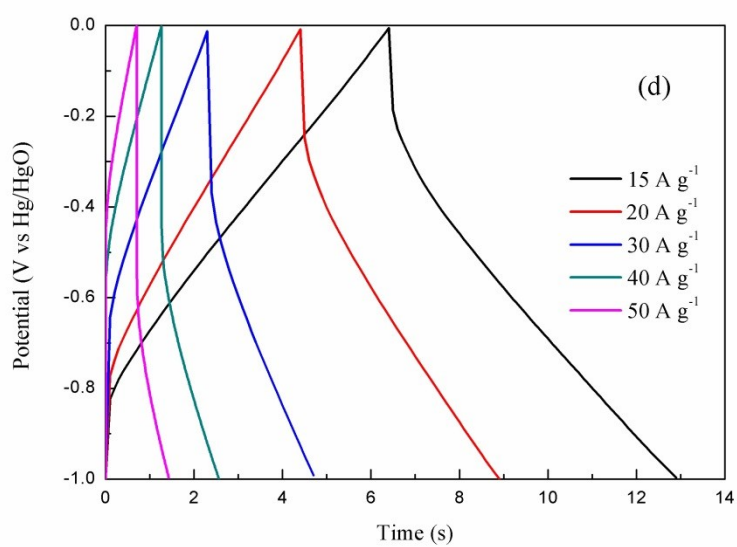


Fig. S4 (a) and (b) Galvanostatic charge-discharge curves of as-prepared MrGO<sub>th</sub> at different charge current density; (c) and (d) Galvanostatic charge-discharge curves of as-prepared rGO<sub>A</sub> at different charge current density