## **Supporting Information**

## Enhancing Electrocatalytic Oxygen Reduction on Nitrogen-Doped Graphene by Active Sites Implantation

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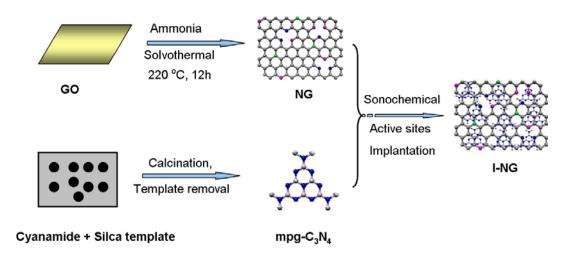


Figure S1. Schematic illustration of implantation process of nitrogen active sites for NG

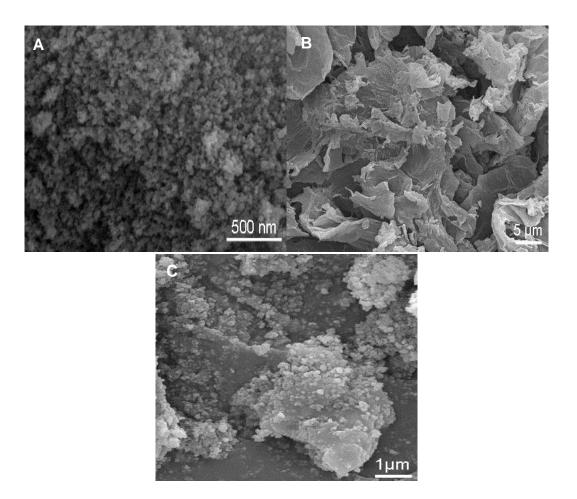


Figure S2. SEM images of (A) mpg-C<sub>3</sub>N<sub>4</sub>, (B) NG and (C) I-NG

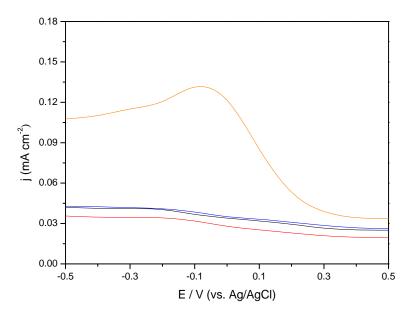


Figure S3. RRDE ring currents of I-NG (red line), Pt/C (black line), NG (blue line) and mpg- $C_3N_4$  (orange line) electrodes at a rotation rate of 1200 rpm.

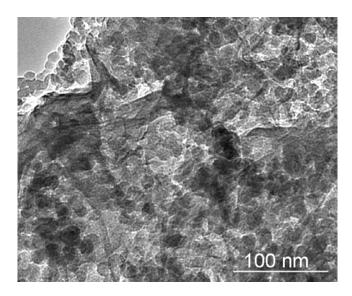


Figure S4. TEM image of I-NG after durability test

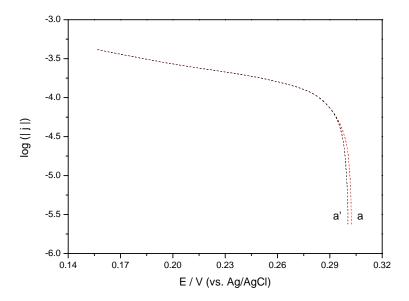


Figure S5. Tafel plots of I-NG electrode in  $O_2$ -saturated neutral phosphate buffer solution. The plots a and a' show the ORR performance of NG electrode before and after addition of 5 mM sodium formate to the electrolyte solution. The galvanodynamic experiments were performed at a scan rate of  $10^{-7}$  A/s.

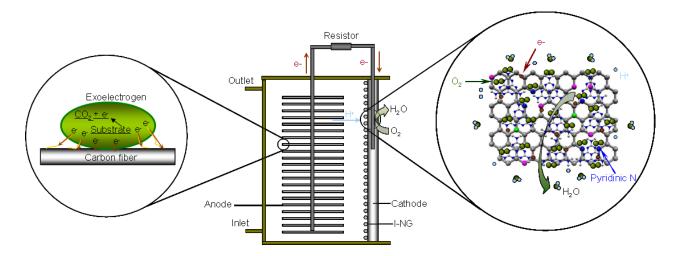


Figure S6. I-NG-MFCs used in this study

## **Figure legends**

Figure S1: Schematic illustration of implantation process of nitrogen active sites for NG

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