

Supporting Information

Gold nanodendrites on graphene oxide nanosheets for oxygen reduction reaction

Xiao-Rong Li, Xiang-Ling Li, Ming-Chen, Xu, Jing-Juan Xu* and Hong-Yuan Chen

State Key Laboratory of Analytical Chemistry for Life Science, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

* To whom correspondence should be addressed. Tel. / Tax: +86-25-83597294. E-mail: xujj@nju.edu.cn

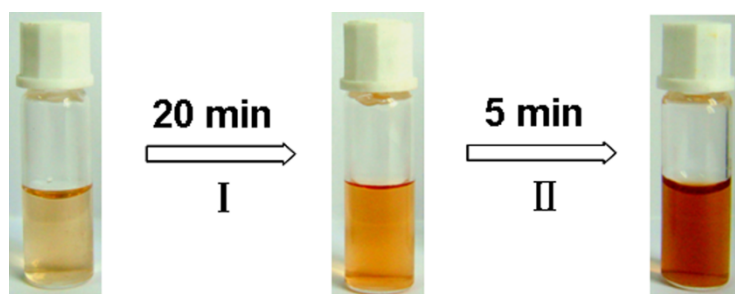


Fig. S1 The photographs of color evolution of AuNDs-GO during different synthesis steps.

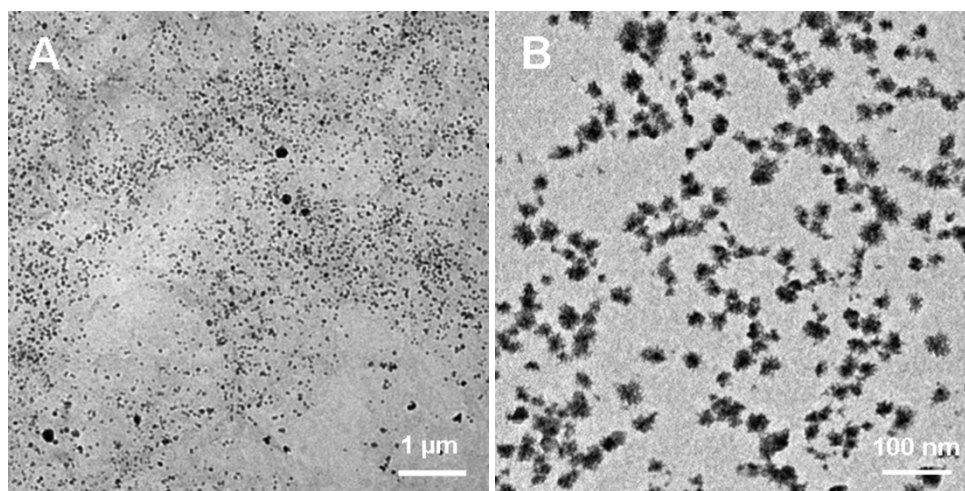


Fig. S2 (A, B) TEM images of the as-synthesized AuNDs-GO, showing AuNDs synthesized on GO nanosheets.

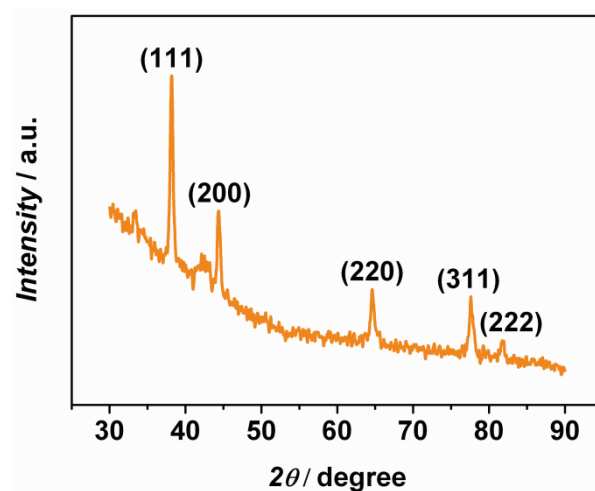


Fig. S3 X-ray diffraction (XRD) patterns of AuNDs on GO nanosheets. The observed diffraction peaks can be indexed to the (111), (200), (220), (311) and (222) reflections of metal with face-centered-cubic (*fcc*) structure.

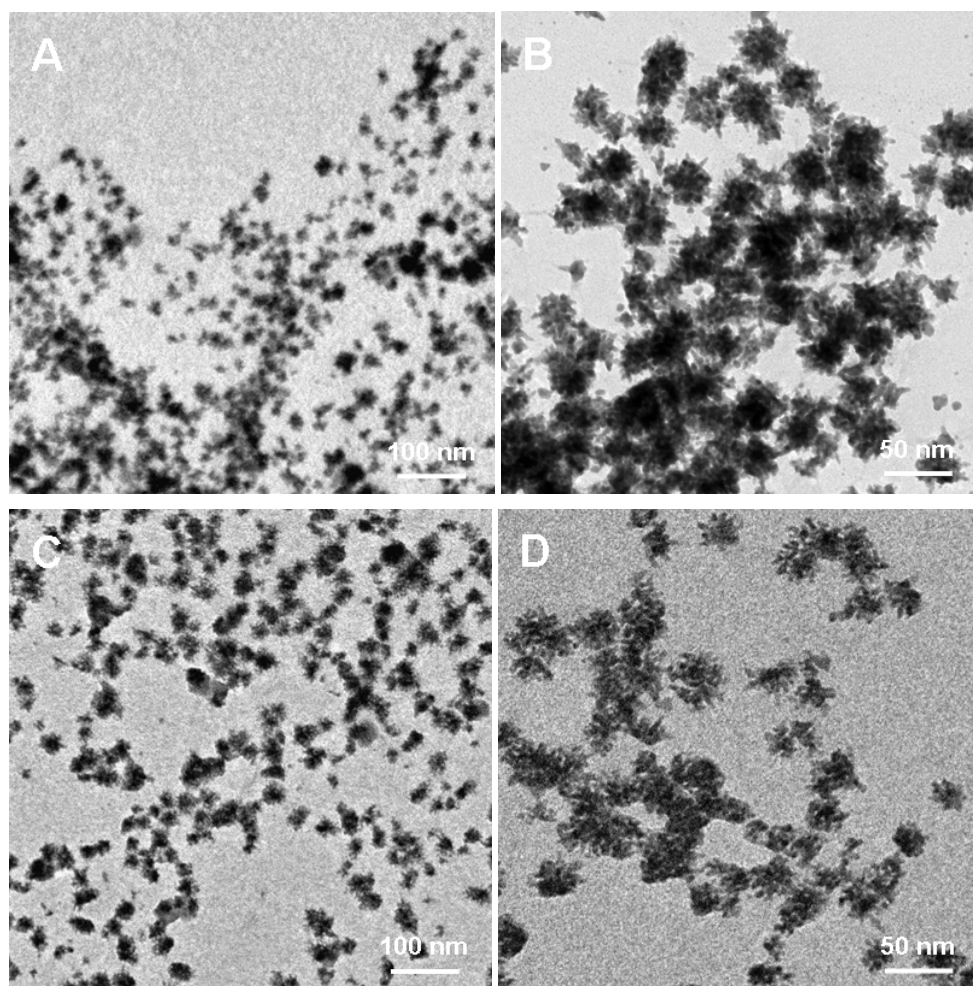


Fig. S4 TEM images of the as-synthesized AuNDs–GO after the heat annealing process at 200 °C for one hour (A, B) and the dispersion in aqueous solution for one month (C, D).

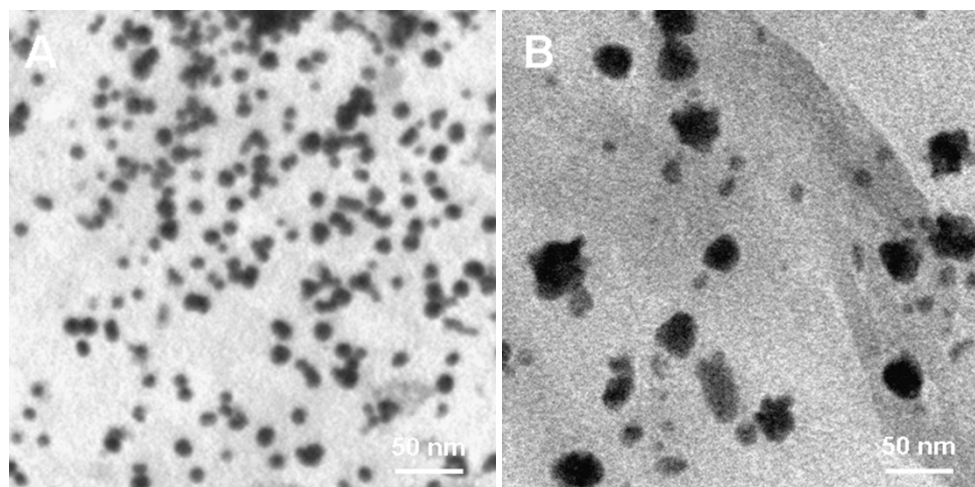


Fig. S5 TEM images of (A) Au nanoparticles on GO nanosheets by using sodium borohydride (NaBH_4) as a strong reducing agent and (B) Au nanostructures on graphene nanosheets by replacing GO with pristine graphene.

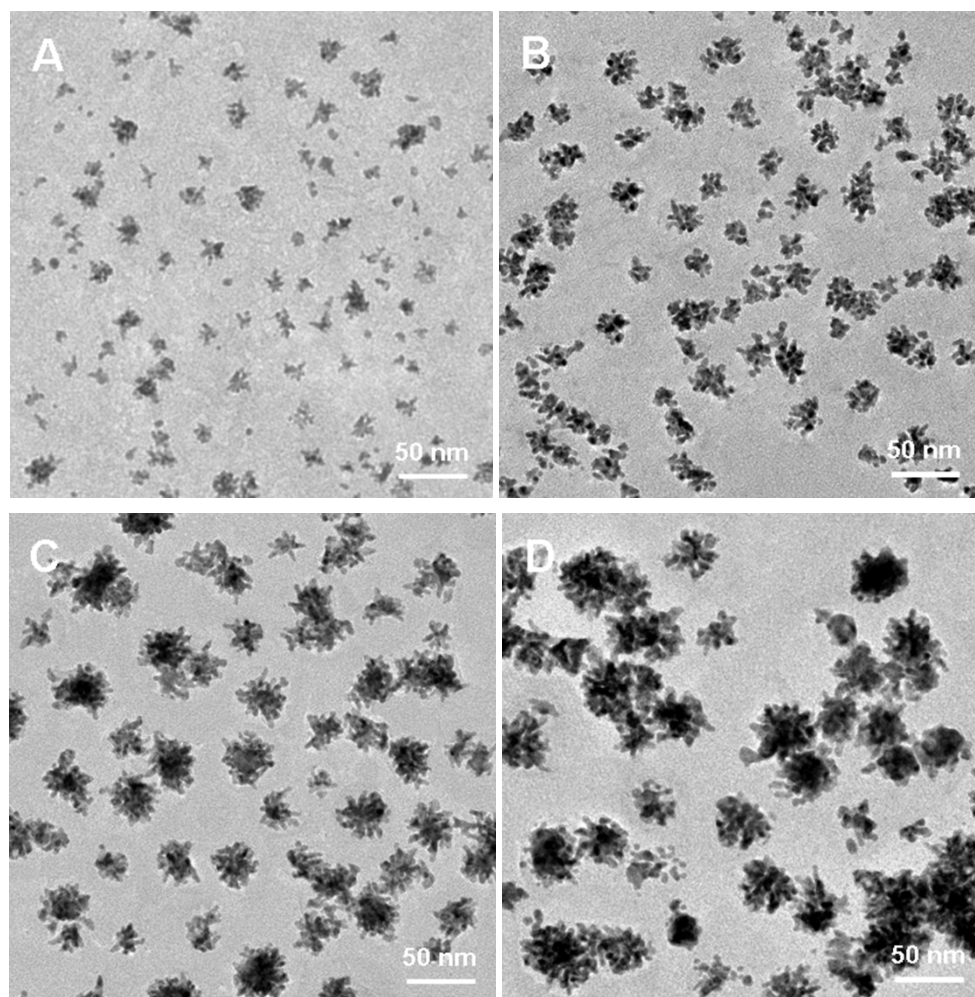


Fig. S6 TEM images of the as-synthesized AuNDs-GO at different initial Au precursor concentrations: 1×10^{-4} M (A), 2×10^{-4} M (B), 5×10^{-4} M (C), and 1×10^{-3} M (D), respectively.

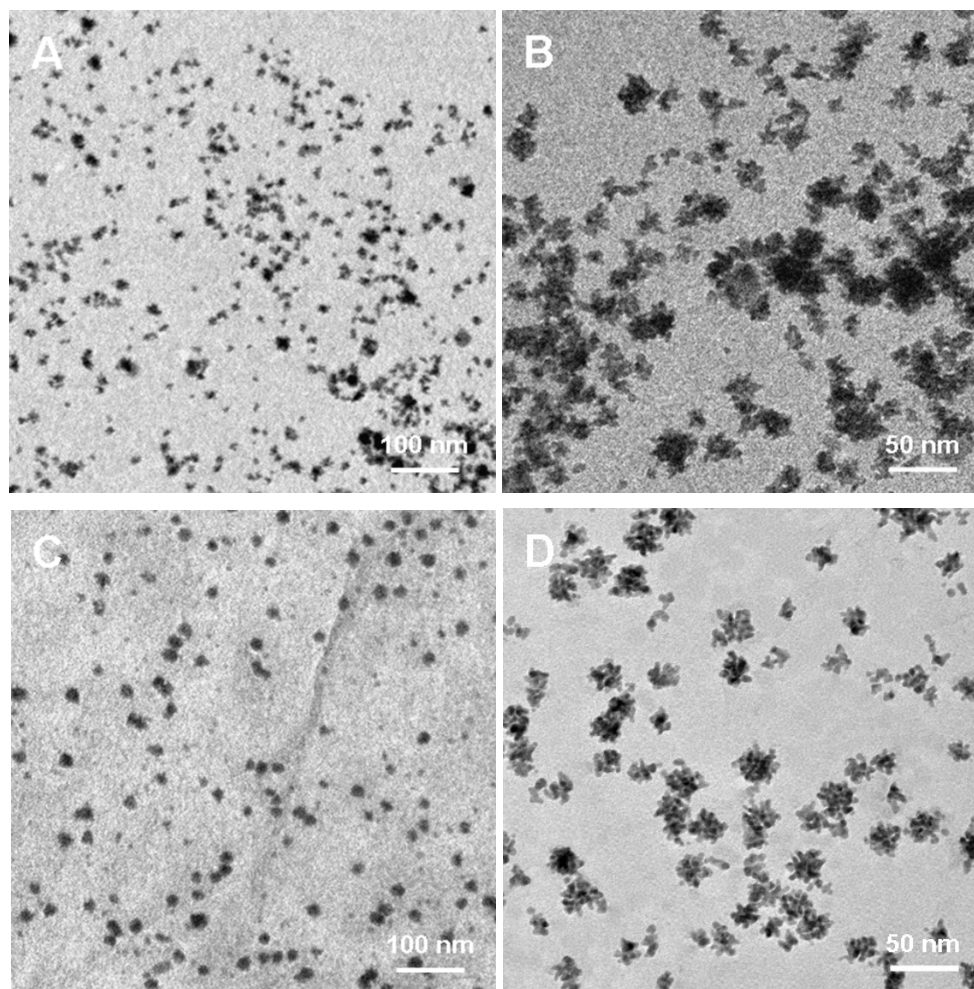


Fig. S7 TEM images of the as-synthesized AuNDs-GO at different initial GO concentrations: 0.5 mg mL⁻¹ (A, B) and 0.05 mg mL⁻¹ (C, D), respectively.

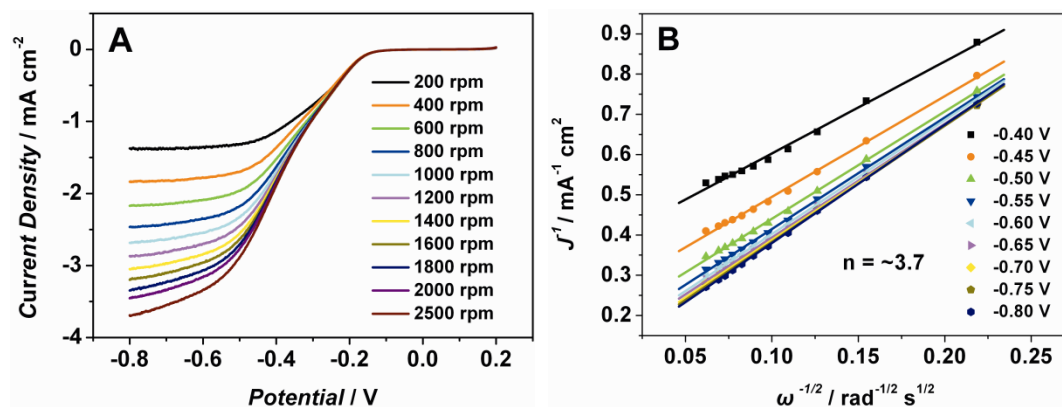


Fig. S8 (A) Rotating disk electrode (RDE) voltammograms of AuNDs-GO in oxygen-saturated 0.1 M KOH with various rotation rates. Scan rate: 10 mV s⁻¹. (B) The corresponding Koutecky-Levich plots (j^{-1} versus $\omega^{-1/2}$) of AuNDs-GO derived from RDE voltammograms at different potentials.