Electronic Supplementary Information

Hollow Flower-like AuPd Alloy Nanoparticles: One Step Synthesis, Self-Assembly on Ionic Liquid-functionalized Graphene and Electrooxidation of Formic Acid

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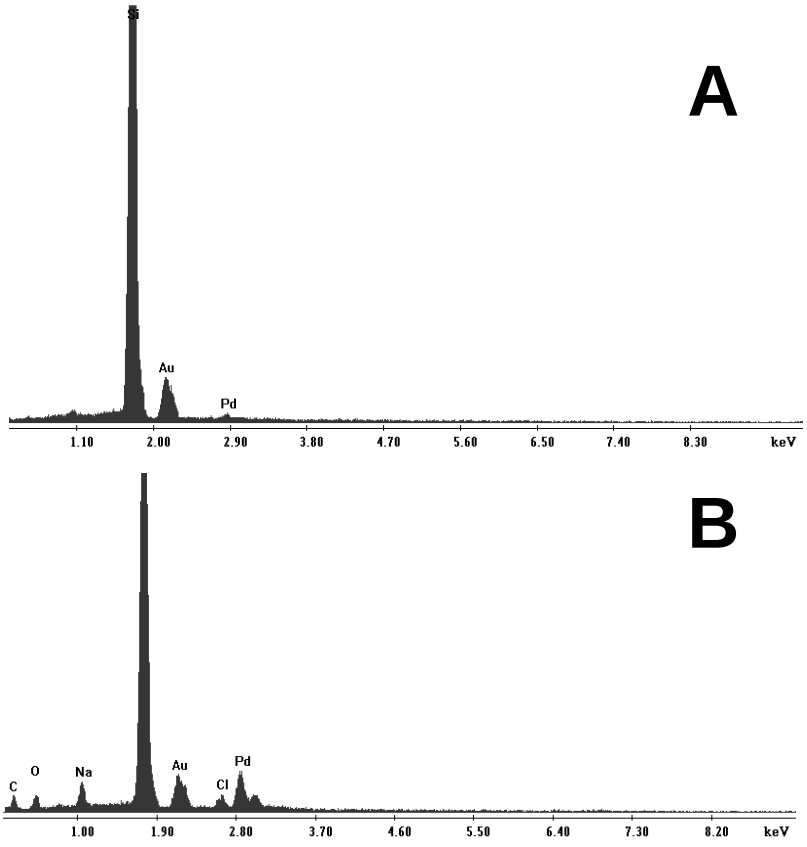

Figure S1 EDS spectra of hollow nanoparticles, and the ratios of precursor $HAuCl_4$ and Na_2PdCl_4 are 1:3 (A) and 3:1 (B).

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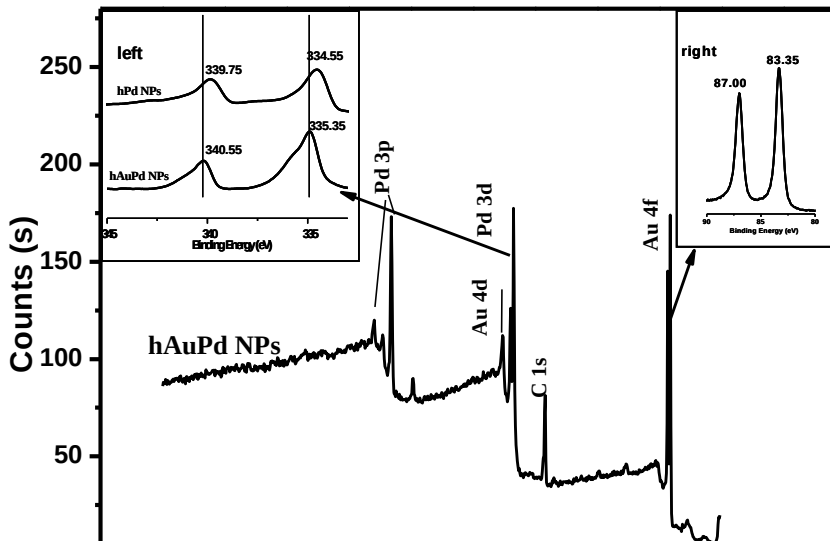

Figure S2 XPS spectra of hAuPd NPs. Insert: left are the corresponding XPS spectra of single hPd nanoparticles and Pd atom in hAuPd alloy nanoparticles, and right is the XPS spectrum of Au atom in the hAuPd alloy nanoparticles.

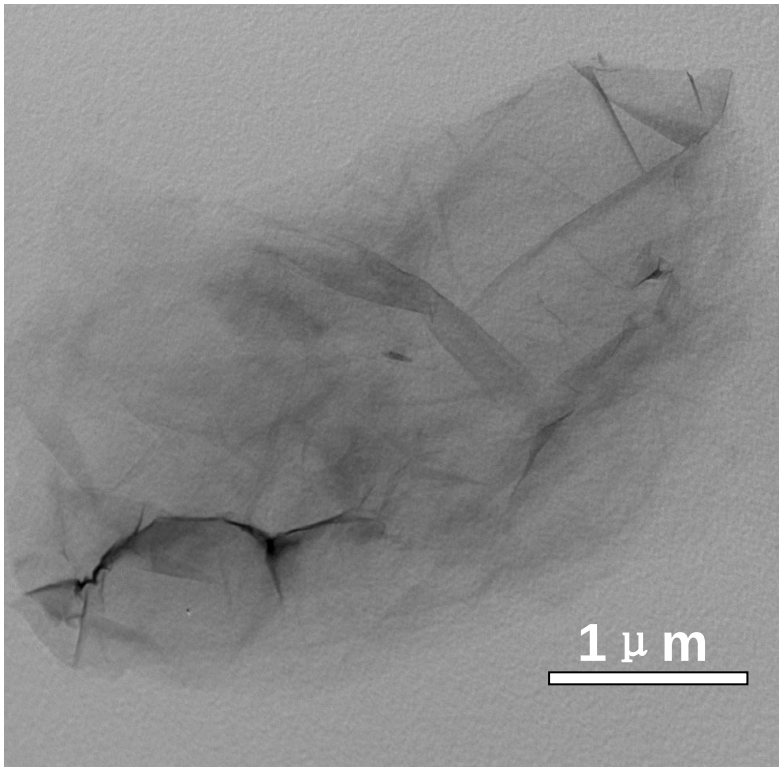

Figure S3 TEM image of graphene oxide synthesized by chemical reduction.

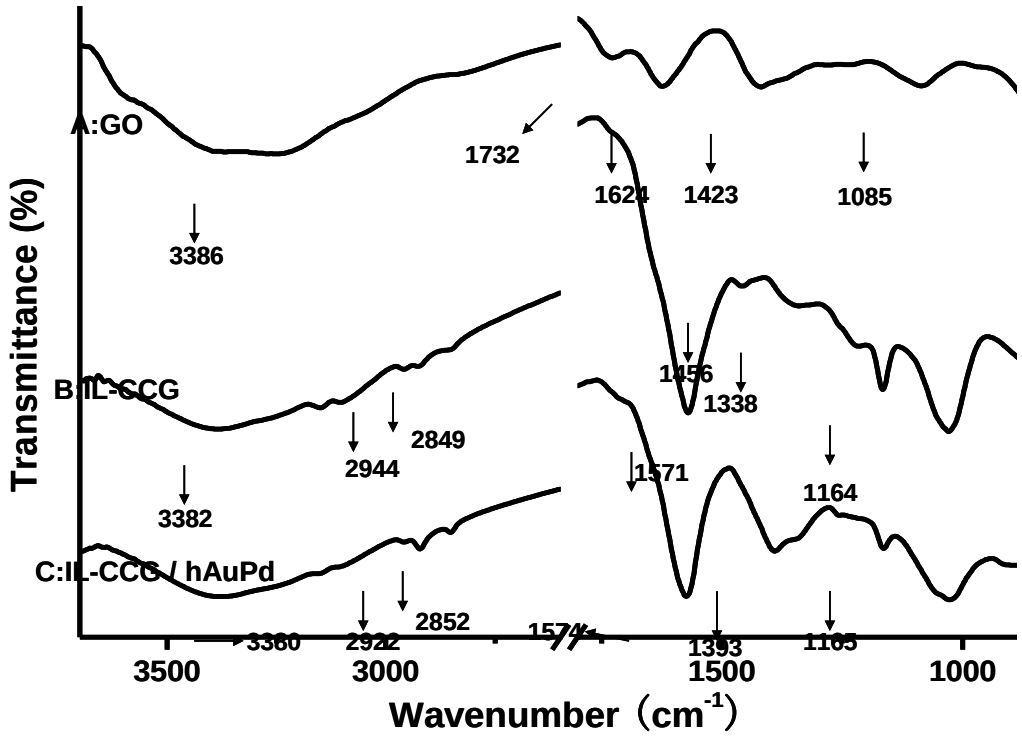

Figure S4 FTIR spectra of GO (A), IL-CCG (B) and IL-CCG/hAuPd NPs.

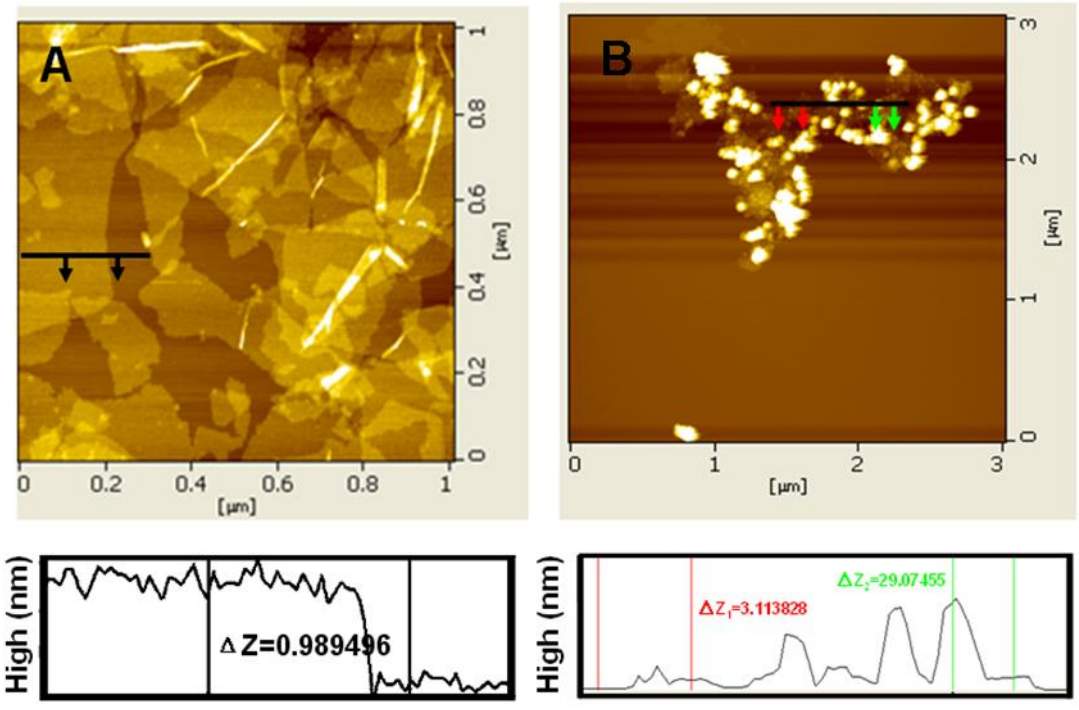

Figure S5 AFM images (upper) and height profiles (lower) of (A) the graphene oxide and (B) IL-CCG/hAuPd nanocomposites.

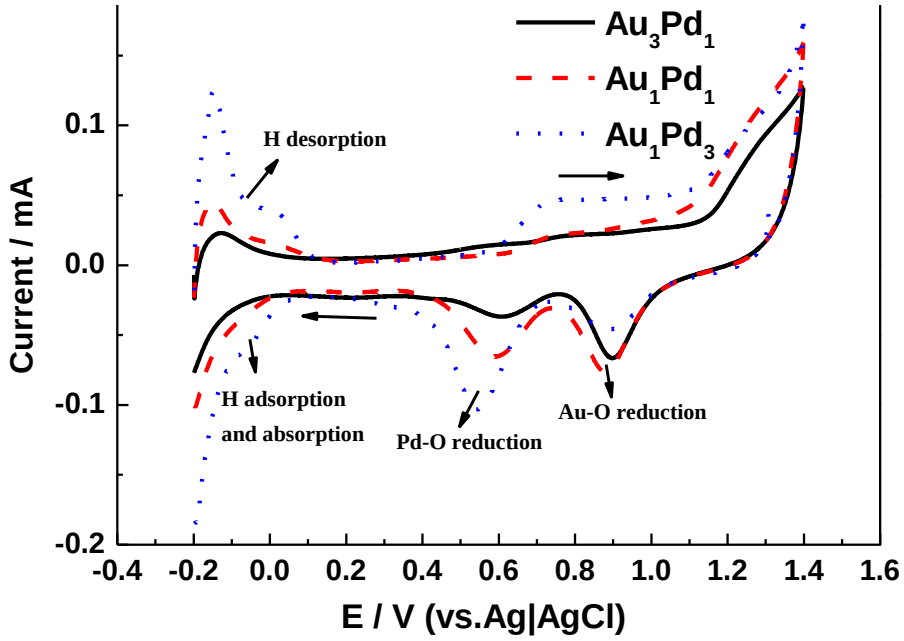

Figure S6 Cyclic voltammograms of hAuPd NPs with different atom ratios at 3:1 (solid), 1:1 (dashed) and 1:3 (dotted) modified GC electrodes in 0.1 M H_2SO_4 solution at a scan rate of 50 mV/s.

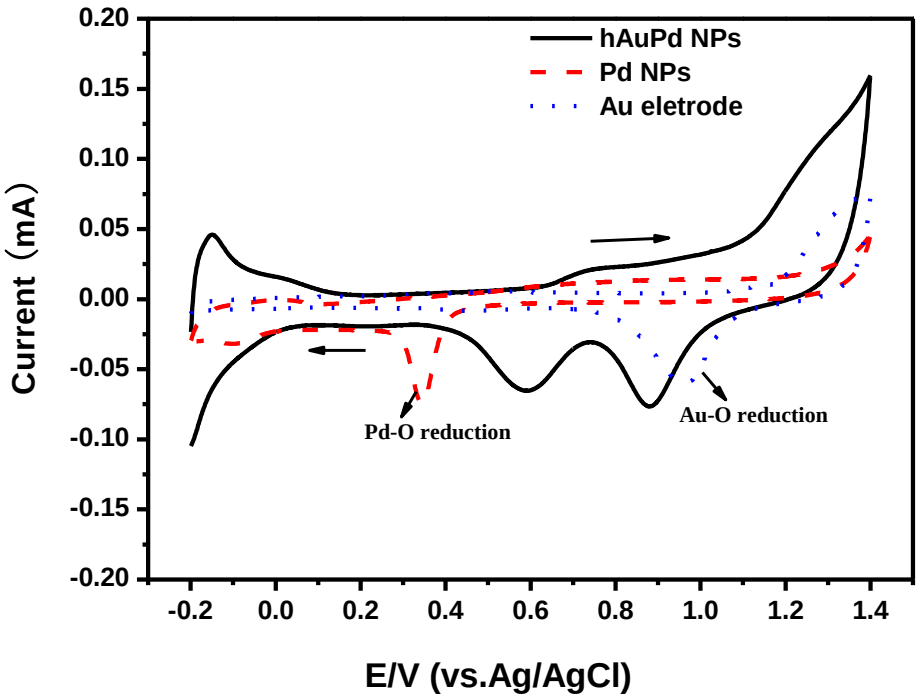

Figure S7 Cyclic voltammograms of hAuPd NPs with atom ratios at 1:1 (solid), Pd NPs (dashed) and Au electrode (dotted) modified GC electrodes in 0.1 M H_2SO_4 solution at a scan rate of 50 mV/s.

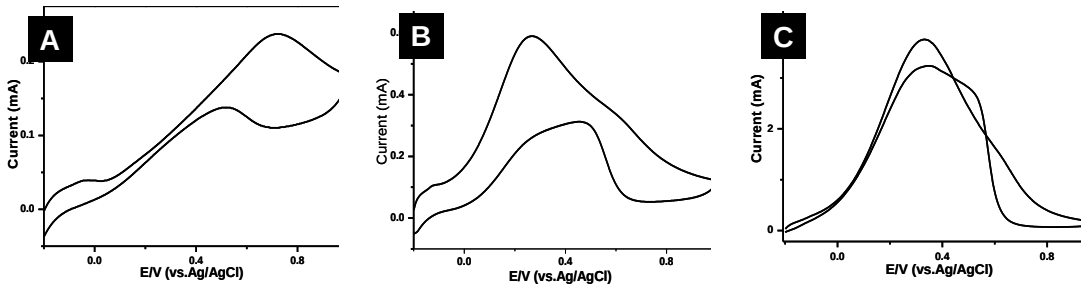

Figure S8 The cyclic voltammograms for hAuPd NPs with different atom ratios of Au and Pd at 3:1(A), 1:1 (B) and 1:3 (C) modified GC electrodes in 0.5 M HCOOH + 0.1 M H_2SO_4 solution at a scan rate of 50 mV/s.

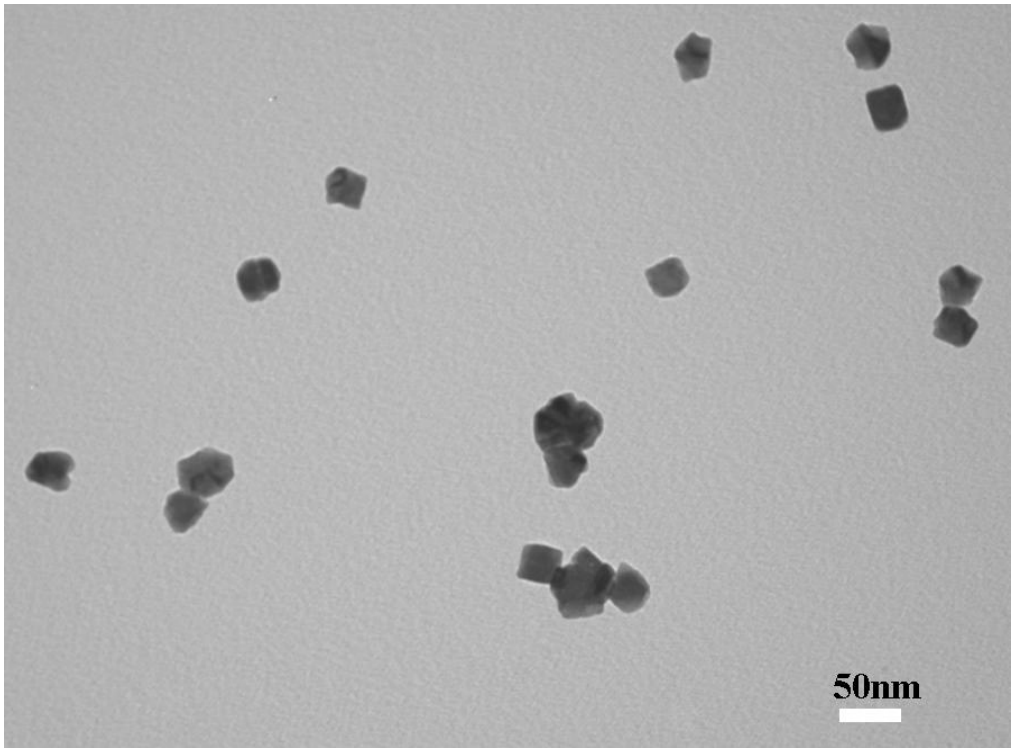

Figure S9 TEM image of solid Pd NPs.

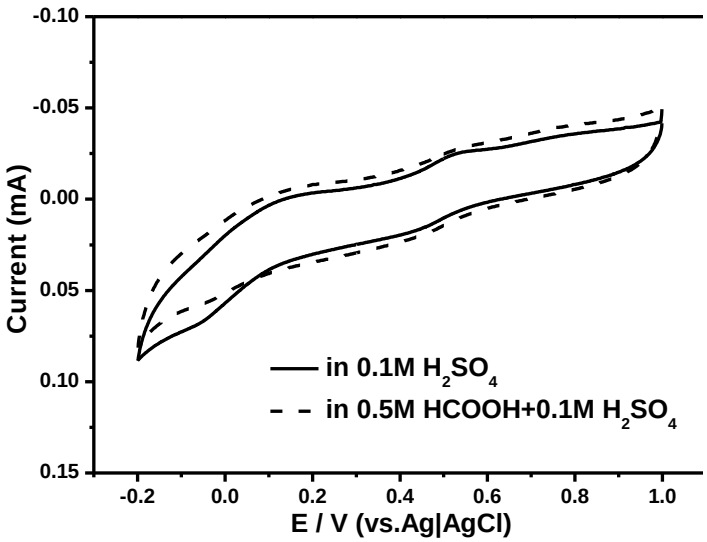

Figure S10 Cyclic voltammograms of IL-CCG in 0.1 M H_2SO_4 solution (black) and in 0.5 M HCOOH + 0.1 M H_2SO_4 solution at a scan rate of 50 mV/s.