

Supporting information

Highly stable biomolecule supported gold nanoparticles/graphene nanocomposite as a sensing platform for H₂O₂ biosensor application

Balamurugan Thirumalraj,^a Chellakannu Rajkumar,^a Shen-Ming Chen,^{a*} and Palani Barathi,^b

^aDepartment of Chemical Engineering and Biotechnology, National Taipei University of Technology, No.1, Section 3, Chung-Hsiao East Road, Taipei 106, Taiwan (ROC).

^bElectrochemical Energy Research Lab, Centre for Nanoscience and Technology, Pondicherry University, Puducherry, 605014, India.

* Corresponding author. Fax: +886 2270 25238; Tel: +886 2270 17147

E-mail: smchen78@ms15.hinet.net

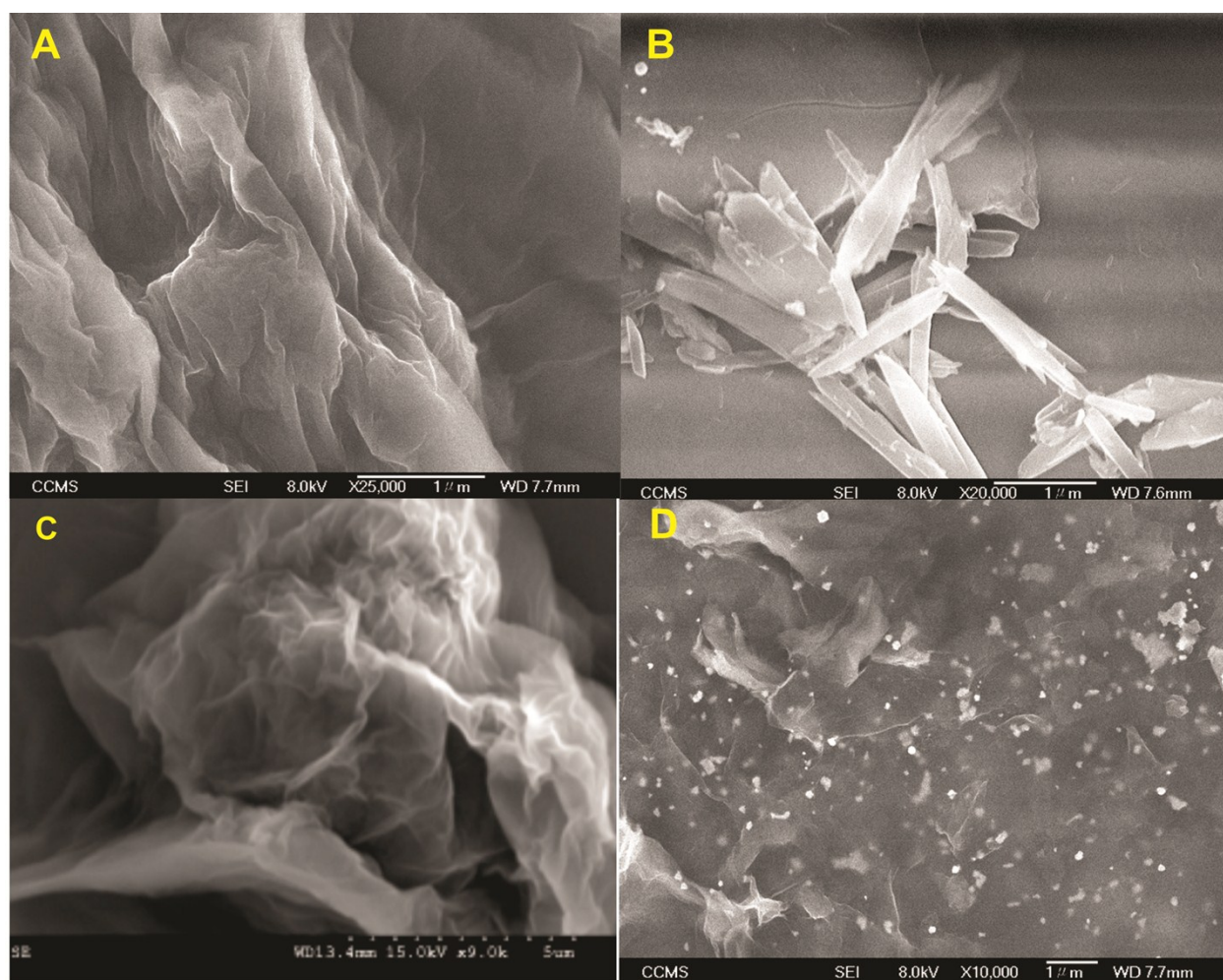


Figure S1. FE-SEM images of GO (A), HN (B), HN-RGO (C) and HN-RGO/AuNPs (D) composites.

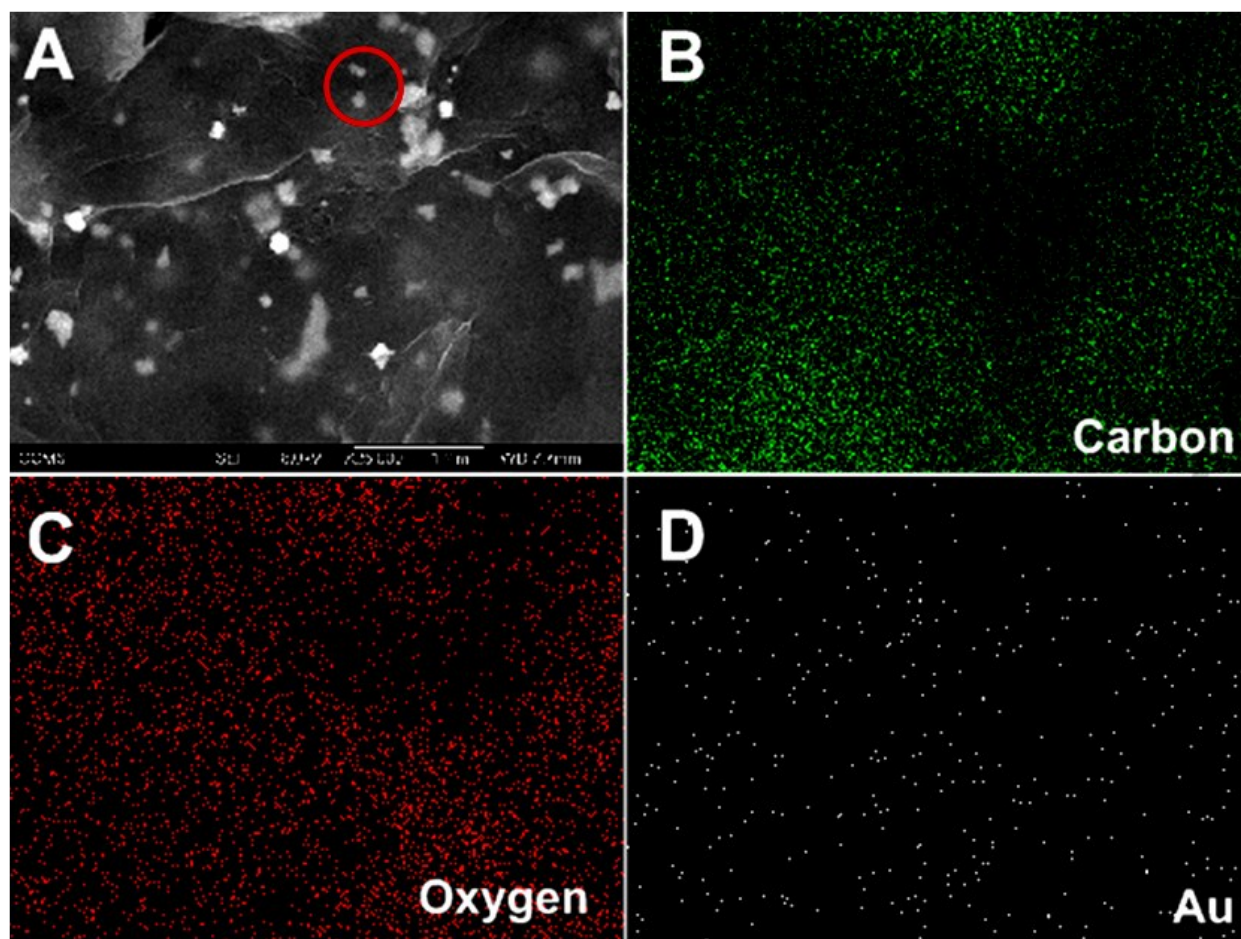


Figure S2. FE-SEM image of HN-RGO/AuNPs composite (A) and the corresponding EDX elemental mapping of carbon (B), oxygen (C) and gold (D) nanoparticles.

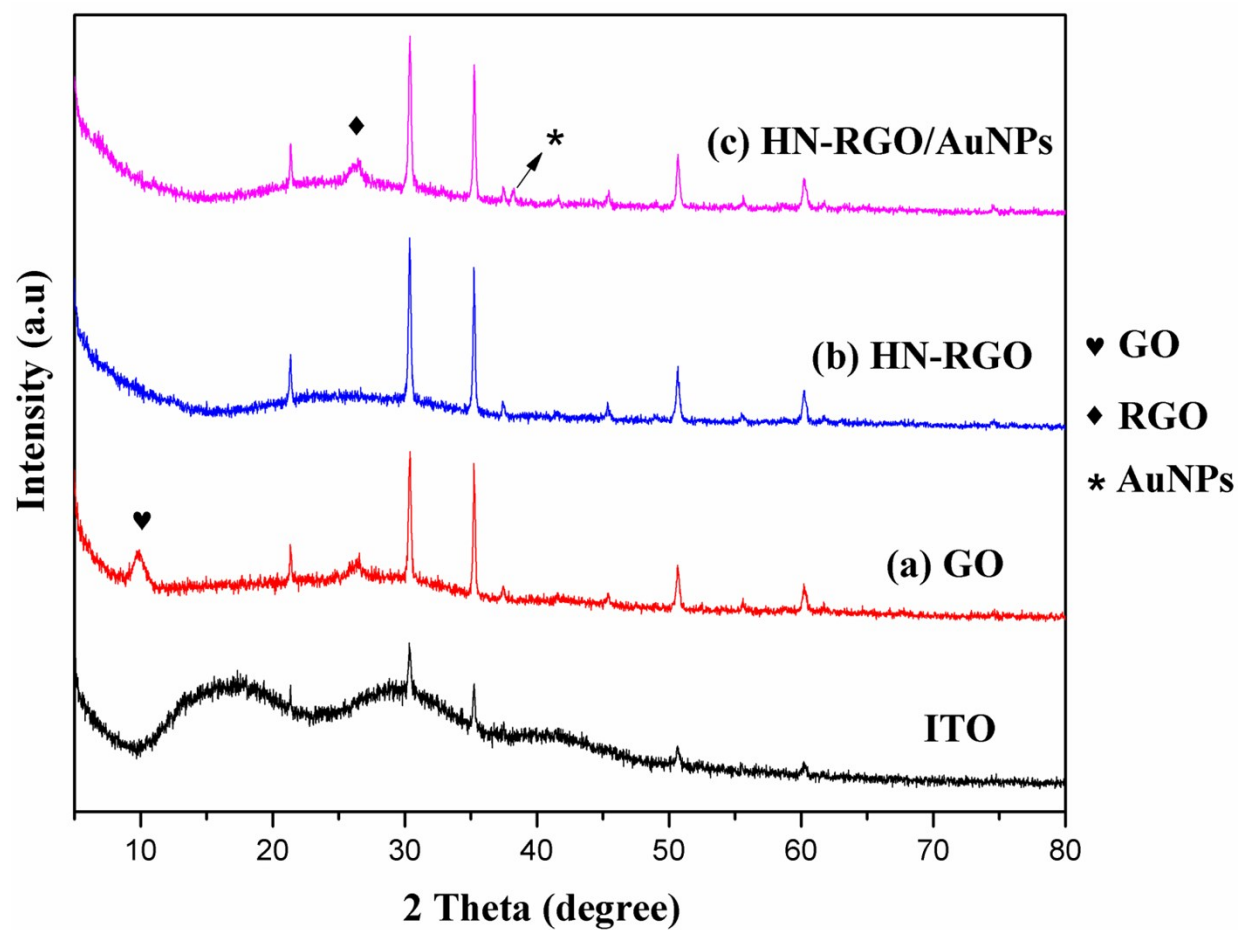


Figure S3. XRD patterns for GO (a), HN-RGO (b), HN-RGO/AuNPs (c) composite.

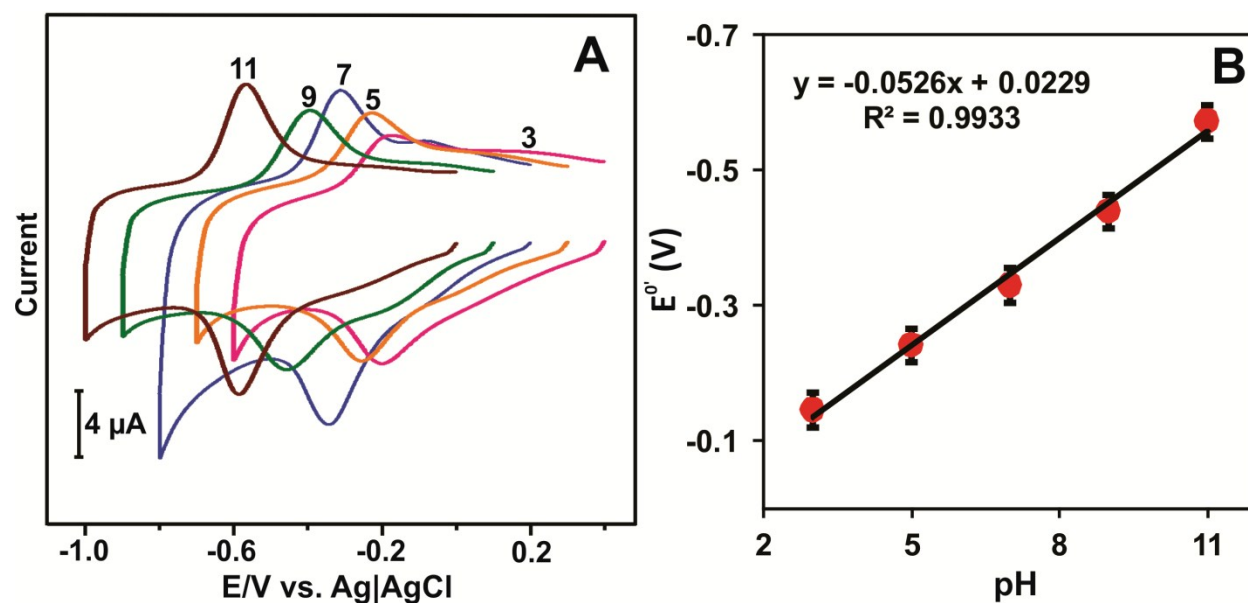


Figure S4. (A) CV response obtained at HN-RGO/AuNPs modified electrode in N_2 saturated different pH solutions (3–11) at a scan rate of 100 mVs^{-1} . (B) The calibration plot for pH vs. E^0 .

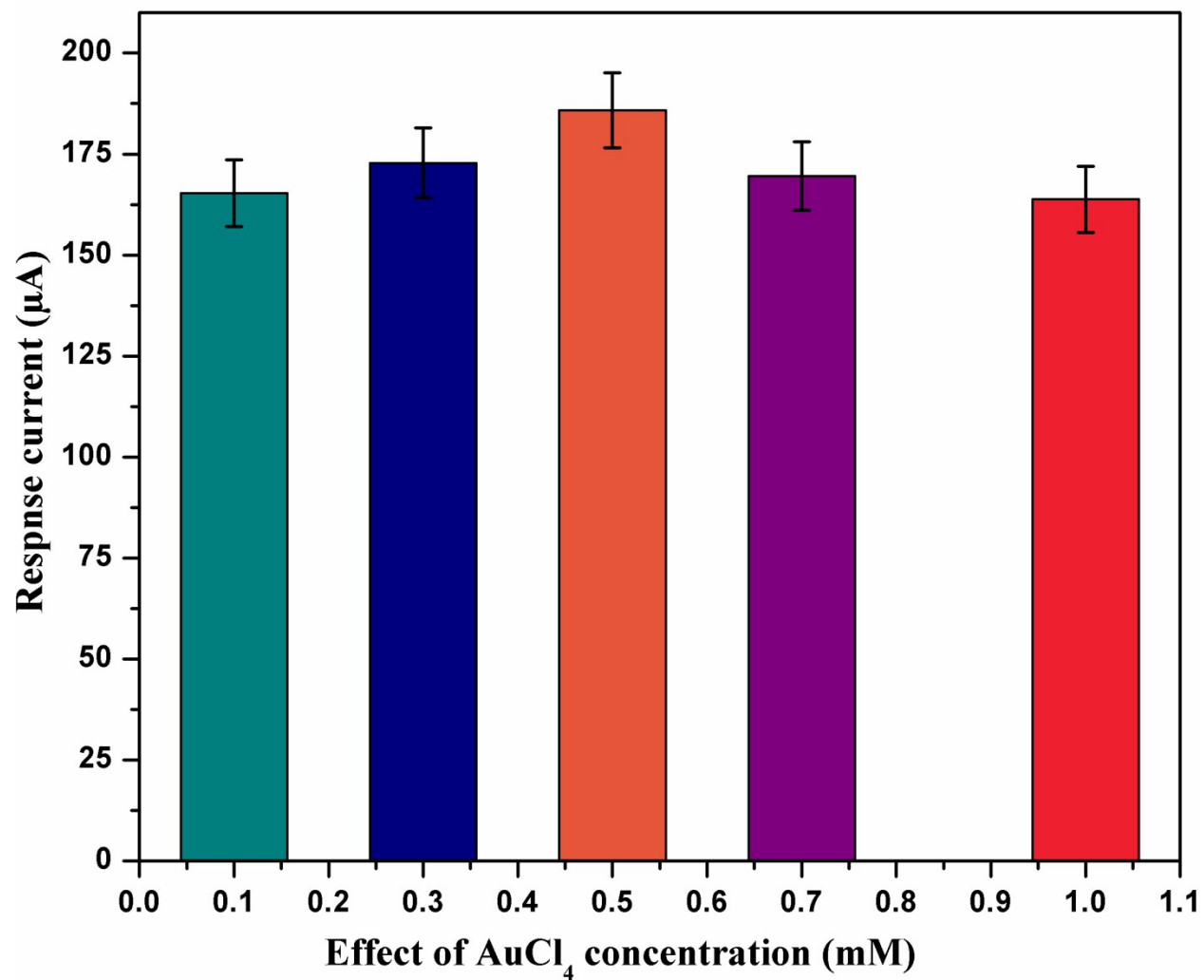


Figure S5. Effect of AuNPs using different AuCl_4 concentrations on HN-RGO/AuNPs composite towards H_2O_2 detection.