Electronic Supplementary Material (ESI) for RSC Advances.


# An electrochemical facile fabrication of platinum nanoparticles decorated reduced graphene oxide; Application for enhanced electrochemical sensing of $H_2O_2$

Selvakumar Palanisamy, [a] Hsin Fang Lee, [a] Shen-Ming Chen [a*] and Balamurugan Thirumalraj [a]

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

*Corresponding author. Fax: +886 2270 25238; Tel: +886 2270 17147, E-mail: smchen78@ms15.hinet.net (S.M. Chen)

**Supporting information**

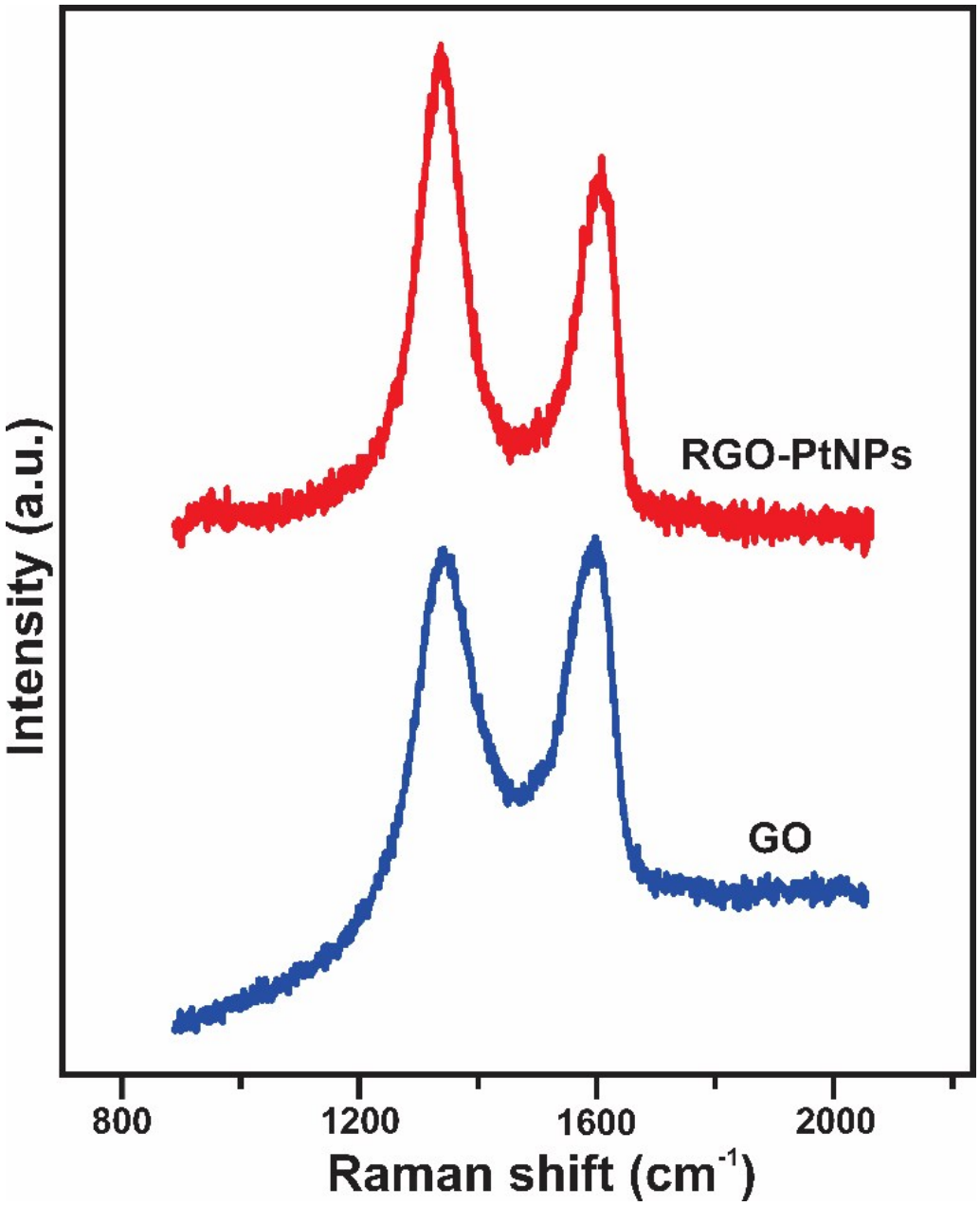


**Fig. S1** Raman spectra of GO and RGO-PtNPs composite.

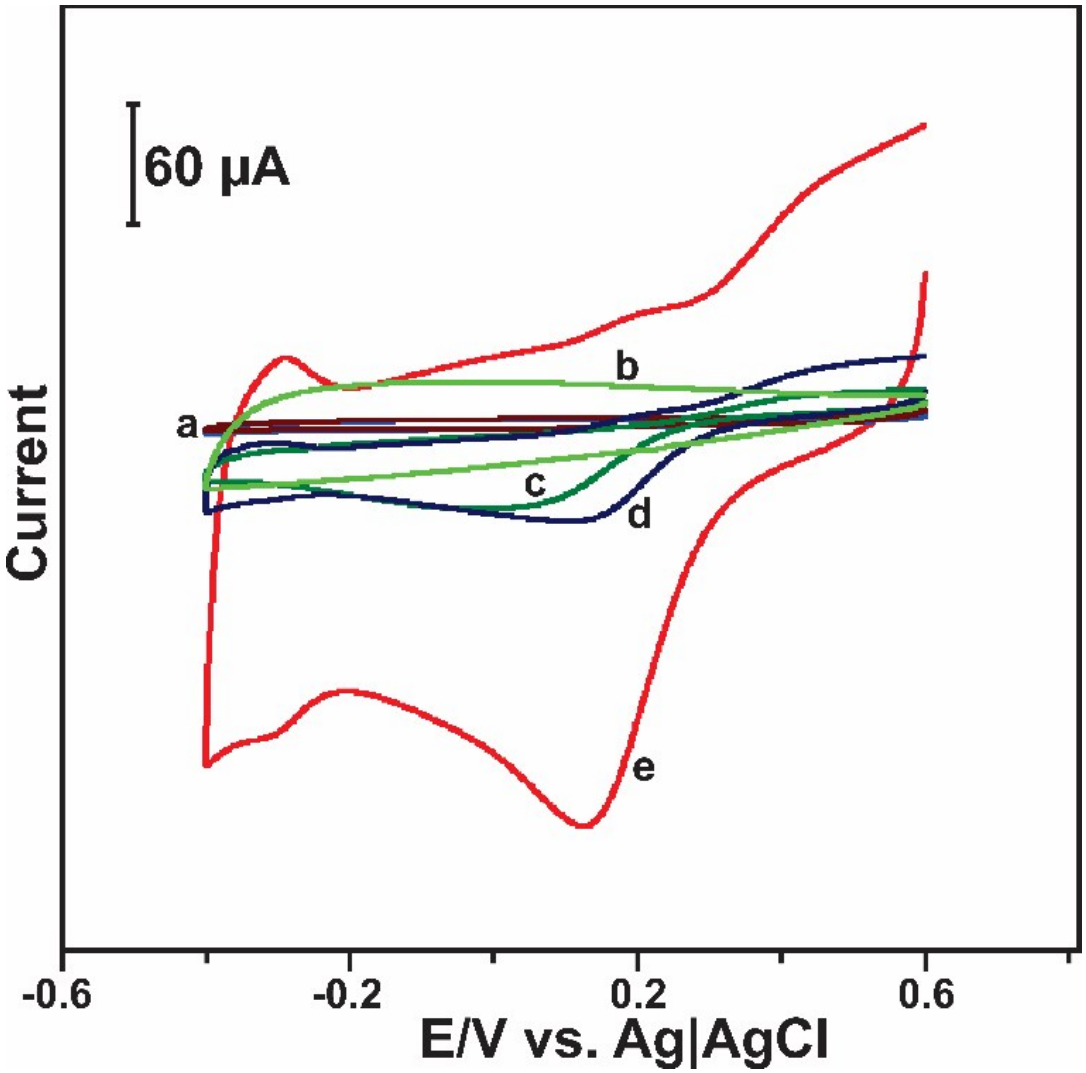


**Fig. S2** A) CV response of bare (a), RGO (b), PtNPs (c), GO-PtNPs (d) and RGO-PtNPs (e) modified electrodes in 1 mM $H_2O_2$ containing $N_2$ saturated PBS at a scan rate of 50 mV $s^{-1}$.

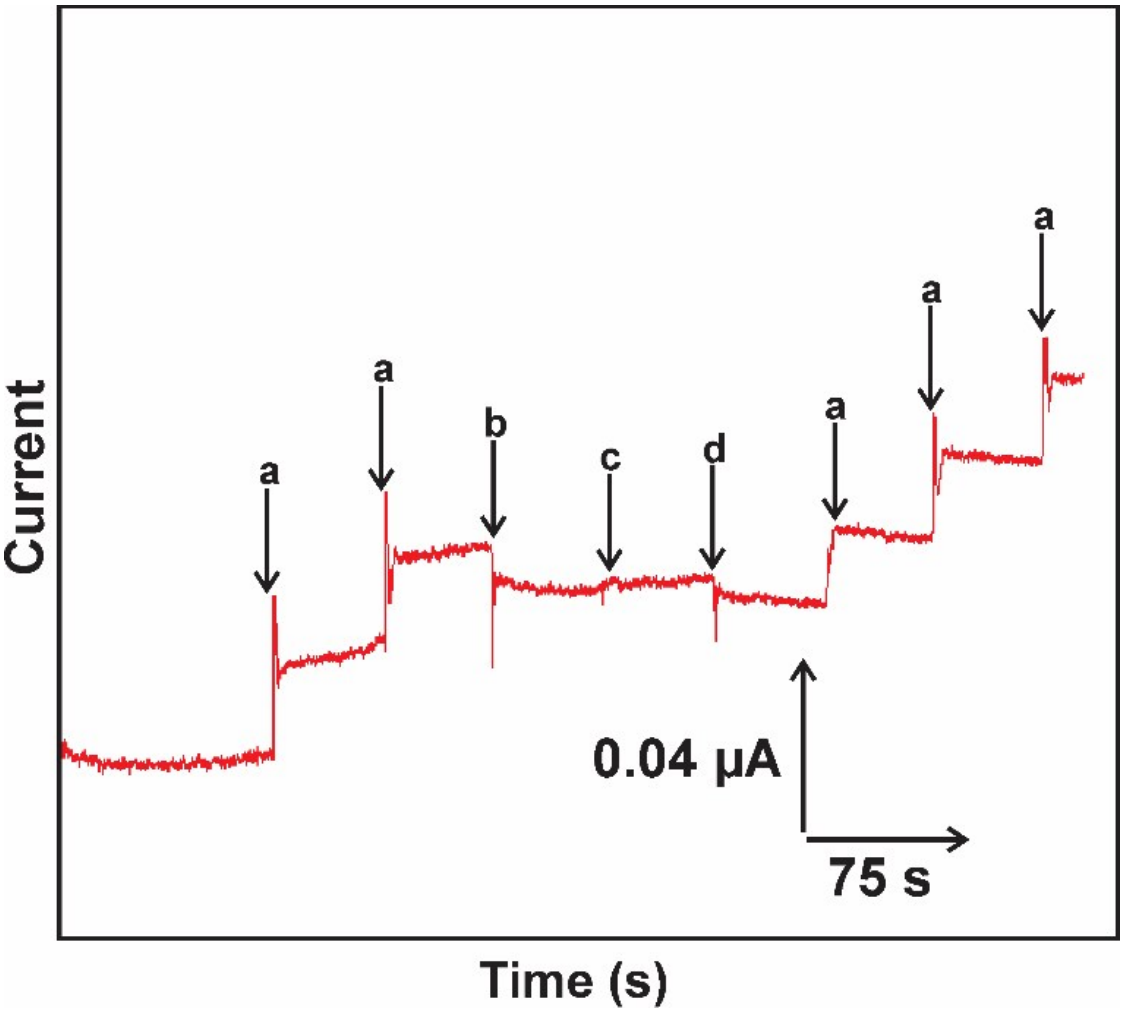


**Fig. S3** Amperometric i–t response obtained at RGO-PtNPs composite modified RDE for the successive addition of 1 μM $H_2O_2$ (a), and 500 μM addition of dopamine (b), ascorbic acid (c) and uric acid (d) solutions into constantly stirred $N_2$-saturated PBS. Applied potential = 0.1 V.

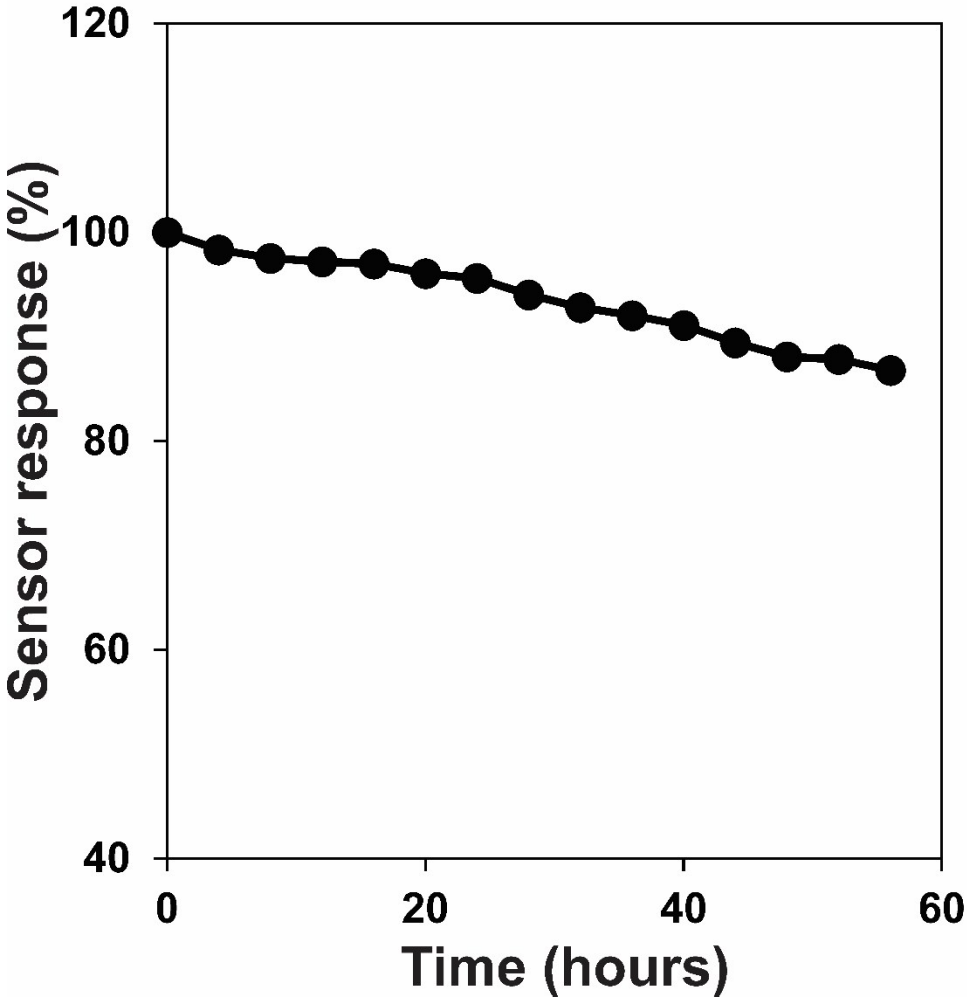


**Fig. S4** The storage stability of the fabricated RGO-PtNPs composite modified electrode on the response to the detection of 1 mM $H_2O_2$ at different periods of time.