Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Modification of Gold-Platinum Core-Shell Nanoparticles on Glassy Carbon Electrode by Electroless Deposition and Their Electrocatalytic Activity

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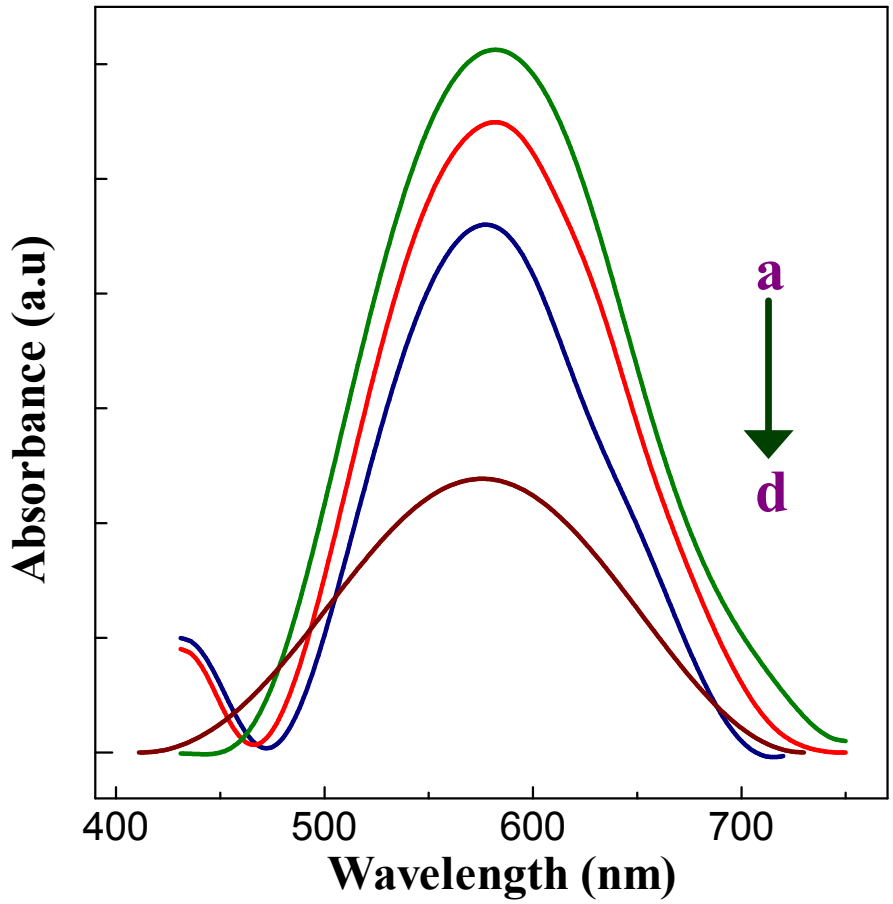

Figure S1. UV-vis absorption spectra obtained for (a) ITO/AuNPs (30 min), (b-d) ITO/Au-PtNPs at the immersion time of 45, 90 and 120 min.

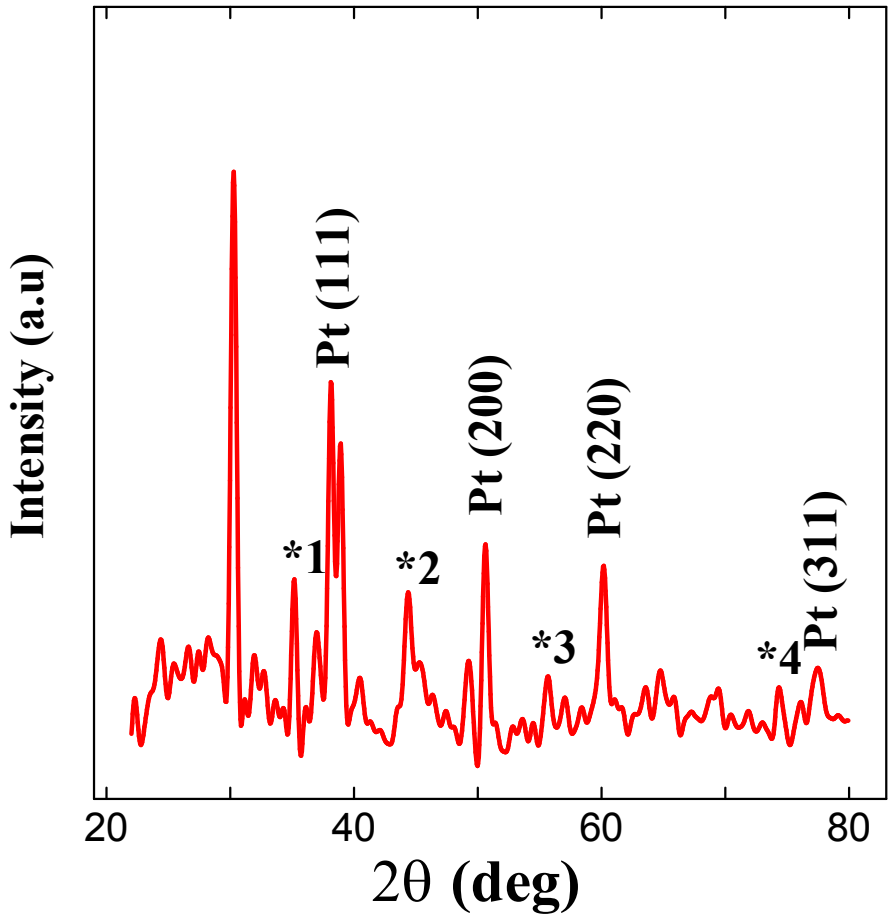

Figure S2. XRD pattern of Au@Pt NPs assemblies. *1, *2, *3 and *4 are the corresponding to Au planes.

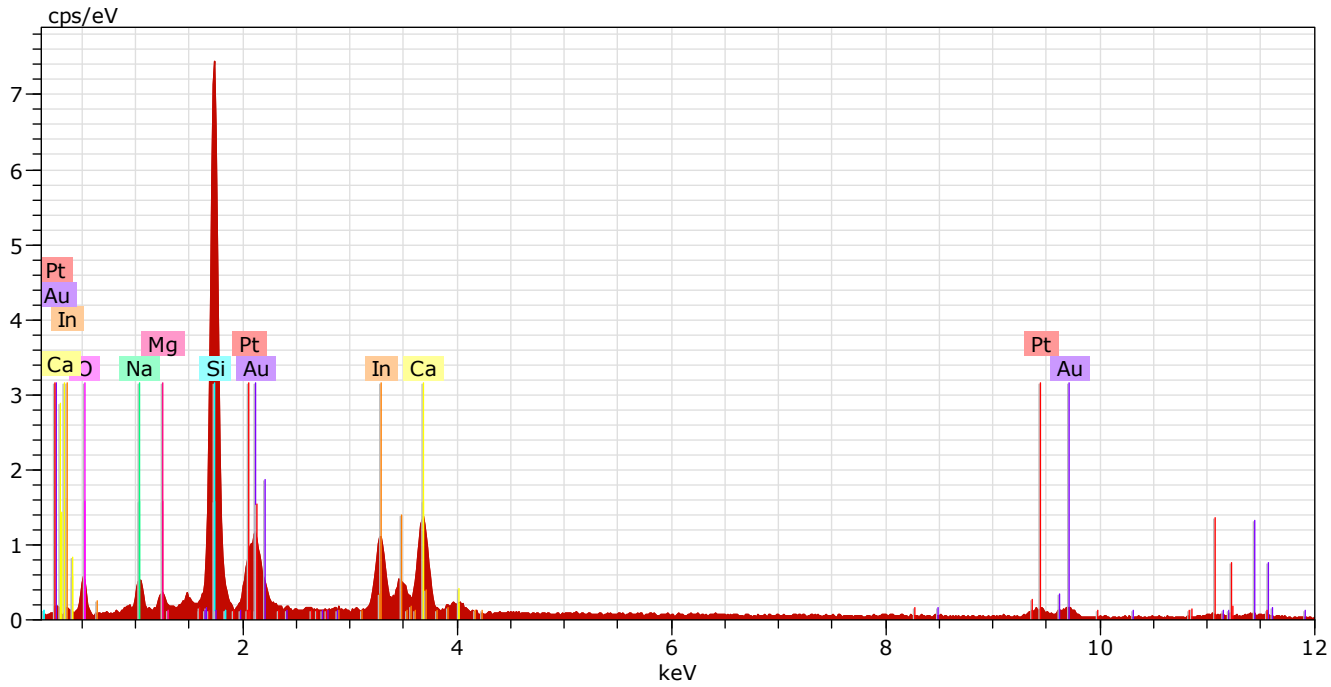

Figure S3. EDAX spectrum obtained for Au-PtNPs modified ITO substrate.

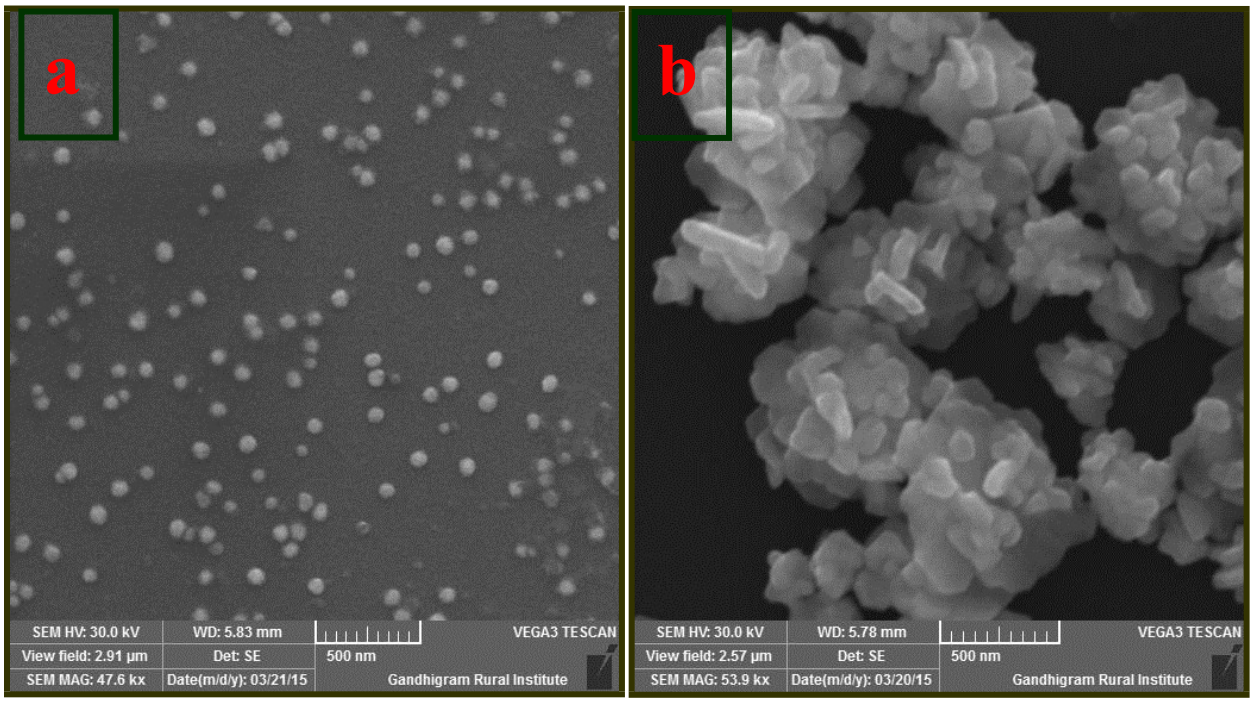

Figure S4. SEM images obtained for (a) GCE/AuNPs and GCE/AuNPs immersed into the solution containing H_2PtCl_6 and NH_2OH for (b) 90 min.

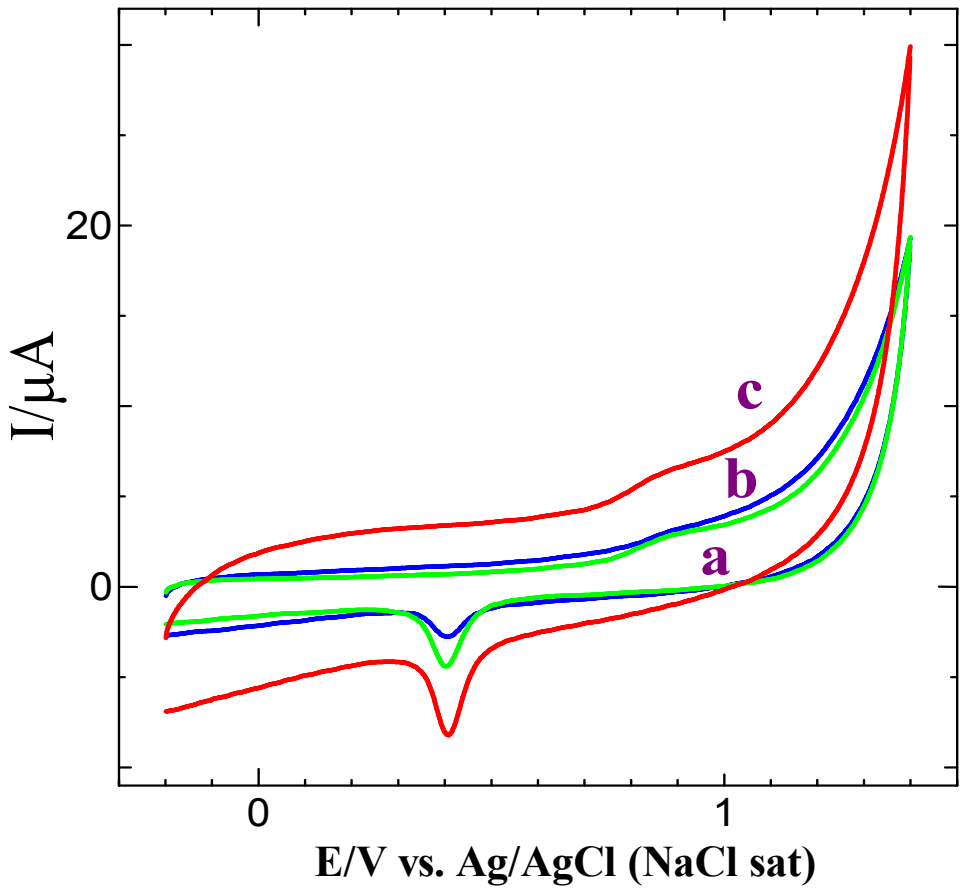

Figure S5. CVs obtained for GC/AuNPs electrode prepared with electroless deposition time of (a) 10 min, (b) 20 min and (c) 30 min in 0.2 M PB solution (pH 7.2) at a scan rate of 50 mV s^{-1}.

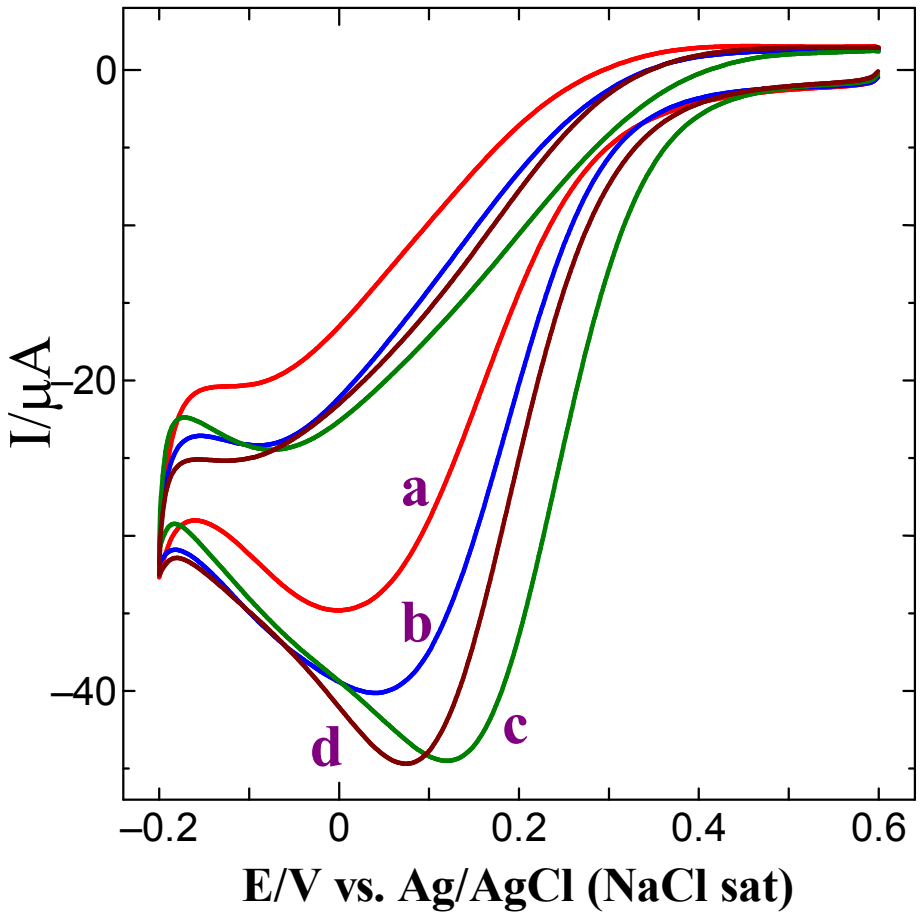

Figure S6. CVs obtained for dioxygen reduction at GC/Au-PtNPs electrode at the deposition time of (a) 30, (b) 45, (c) 90 and (d) 120 min in oxygen saturated 0.5 M H_2SO_4 at a scan rate of 50 mV s^{-1}.

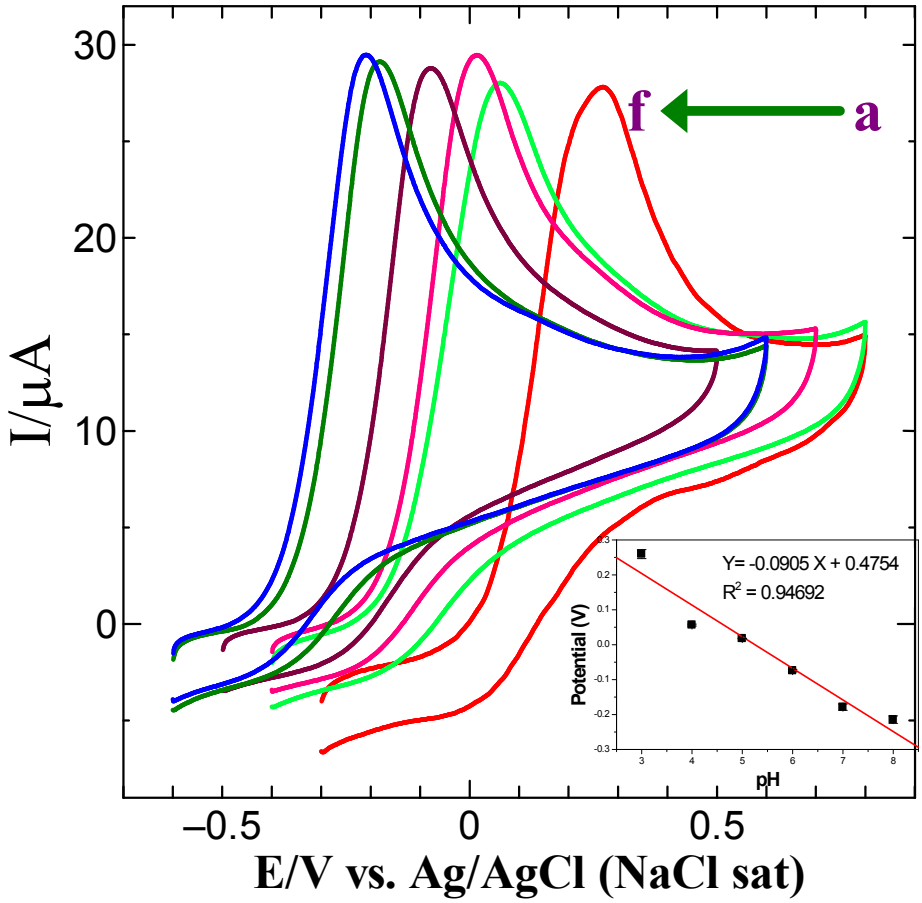

Figure S7. CVs obtained for 0.5 mM hydrazine at GCE/Au-PtNPs in 0.2 M PBS at pH (a) 3, (b) 4, (c) 5, (d) 6, (e) 7 and (f) 8 at a scan rate of 50 mV s^{-1}. Inset: The corresponding calibration plot obtained for potential vs. pH.

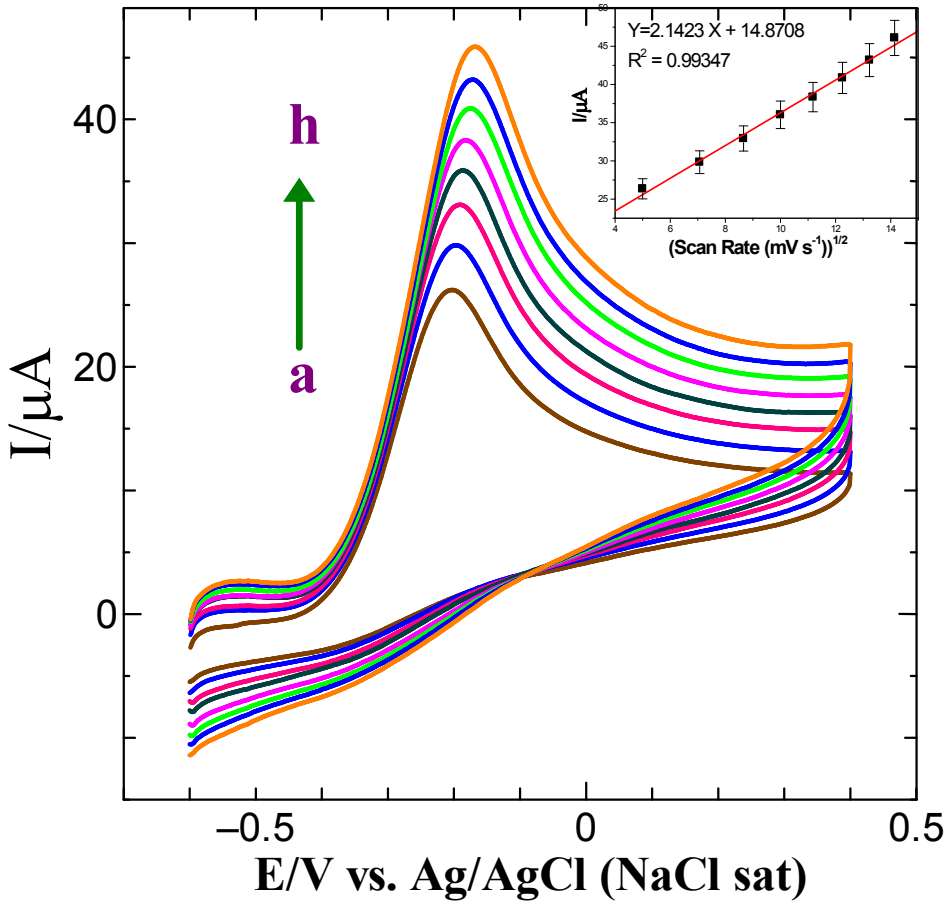

Figure S8. CVs obtained for 0.5 mM hydrazine at GCE/Au-PtNPs in 0.2 M PBS at pH 7.2 at different scan rates from 25 to 250 mV s^{-1} (a-f). Inset: the corresponding calibration plot obtained for current vs. square root of scan rate.