Green synthesis of gold nanoparticles and its application for trace level determination of Painter's colic

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Supporting information

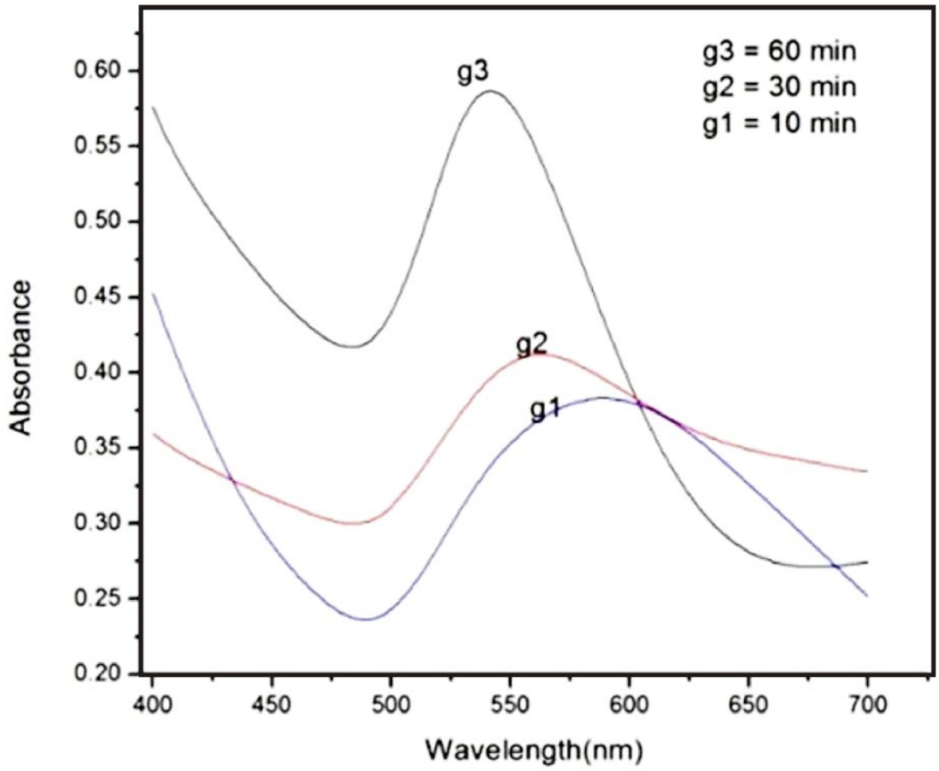

Fig. S1 UV-Vis spectra of gold nanoparticles recorded at various time intervals. The SPR shows the increased absorbance in various time intervals (g_1=10, g_2=30 and g_3=60 min) dependent

reaction of 100 mL of *Justicia glauca* leaf extract mixed with the 100 mL of aqueous solution of 1 mM chloroauric acid at room temperature.

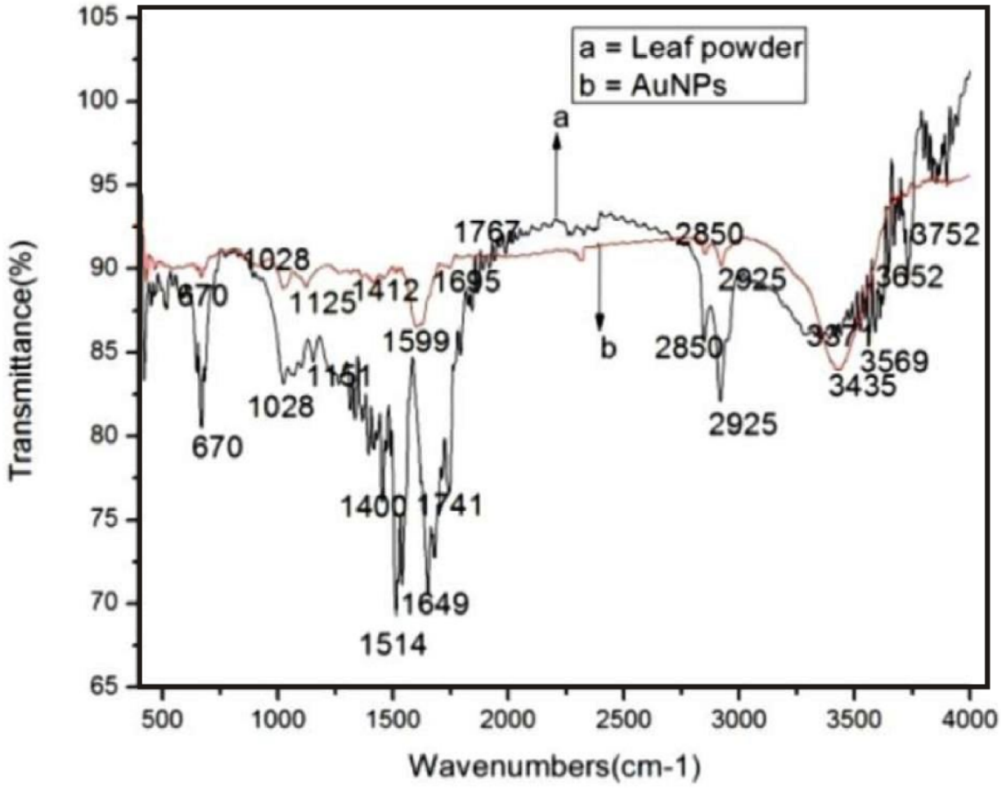

Fig. S2 FTIR spectra of *Justicia glauca* leaf powder before (a) and after (b) encapsulation of Au-NPs.

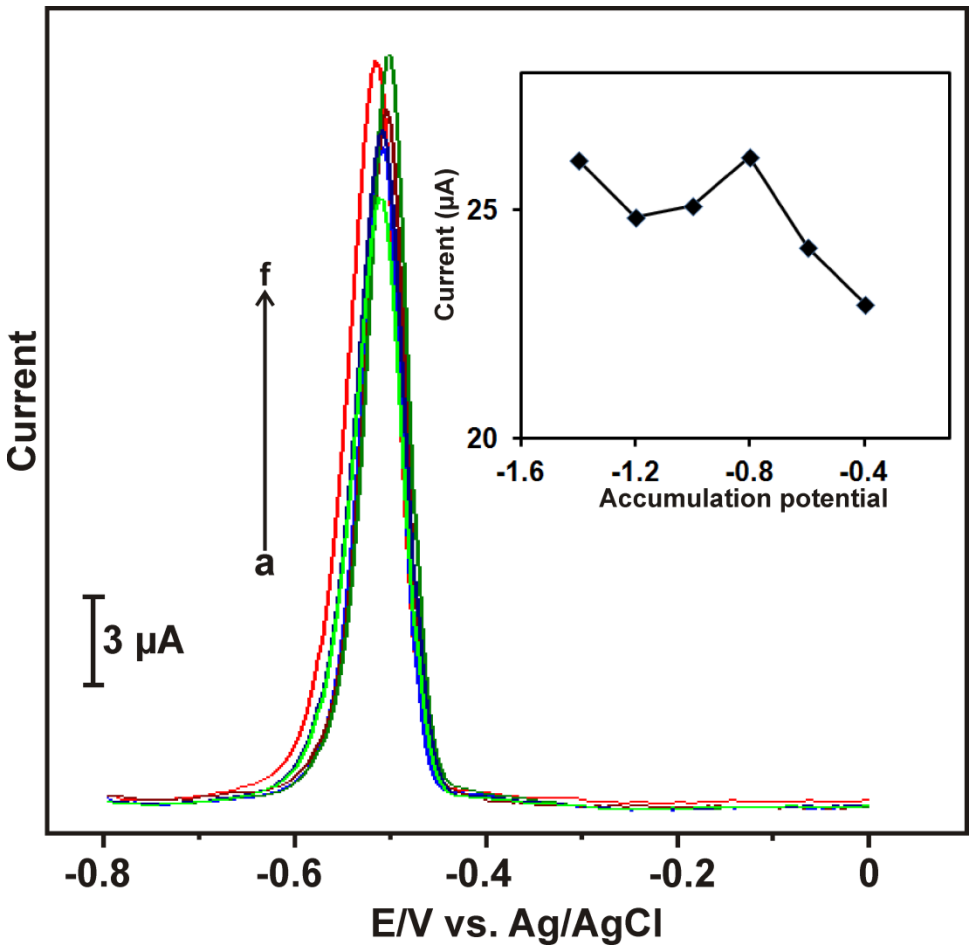

Fig. S3 Differential pulse voltammetric response of the Au-NPs modified glassy carbon electrode to the response to 100 µM L^{-1} Pb^{2+} in pH 5 upon different accumulation potentials. Inset shows the corresponding plot for effect of accumulation potential vs. current response.

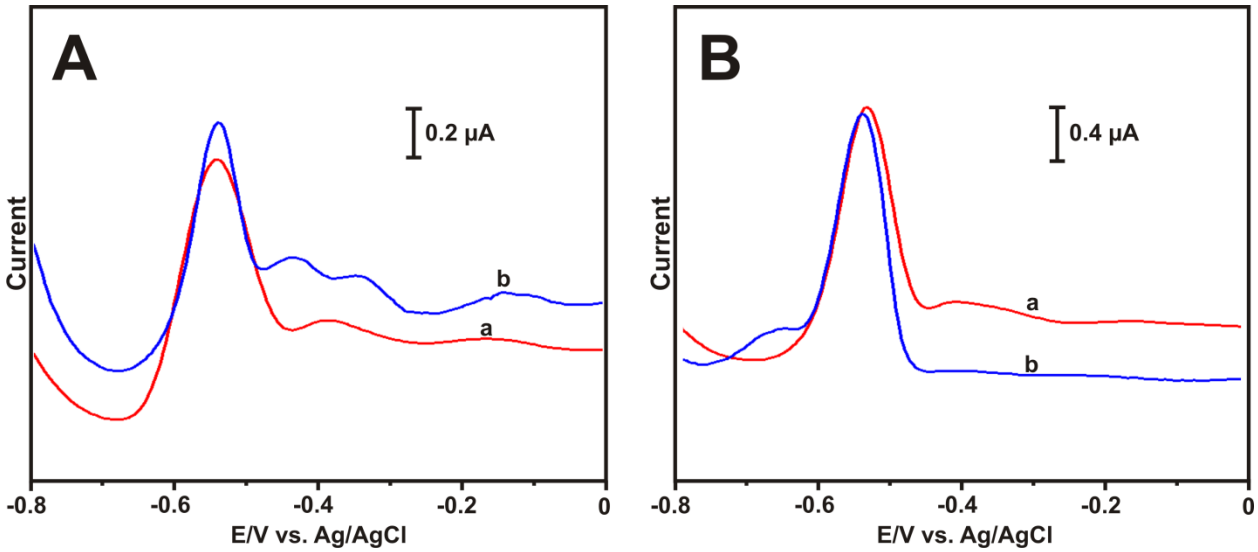

Fig. S4 A) The DPV response of Au-NPs modified electrodes for the detection of 0.5 μM L^{-1} Pb^{2+} in river water solution. B) At same conditions, DPV response for the detection of 1.2 μM L^{-1} Pb^{2+}.

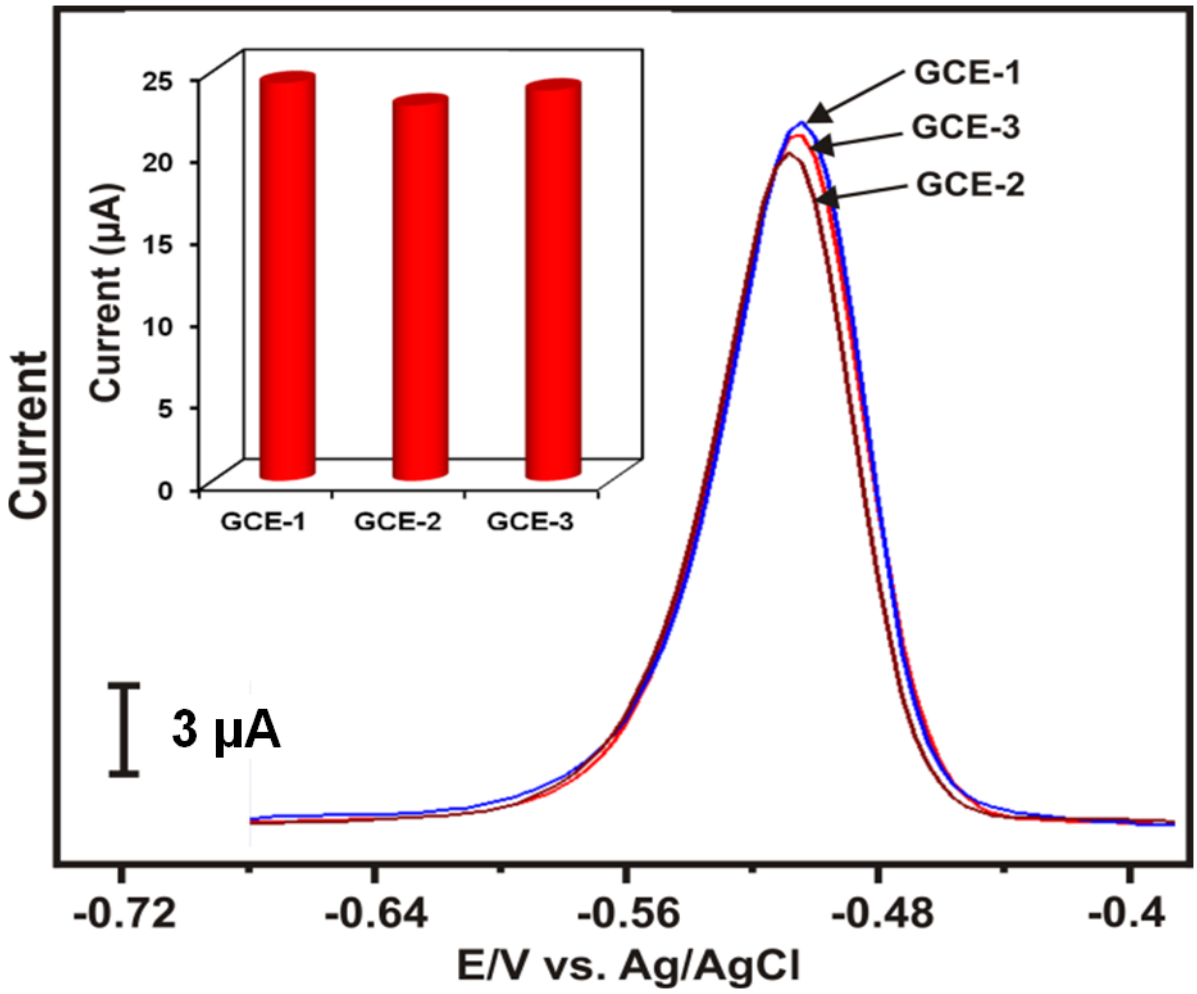

Fig. S5 The DPV response of 3 sensor electrodes for the detection of 50 μM L^{-1} Pb^{2+} in pH 5 solution.

Table. ST1. Comparison of the response time of the fabricated Pb^{2+} sensor with prebiously reported different Pb^{2+} sensors.

Electrode	Response time (sec)	Ref.
MWCNTs–nanosilica/CPE	10	1
Phenyl hydrazone derivative carbon composite/PVCME	6	2
Acrylamidezirconium (IV) arsenate /PVCME	20	3
Polyaminoanthraquinone/PVCME	12	4
L-g-MWCNTS–CPE	25	5
Au-NPs–GCE	6	Present work

Abbreviations:

MWCNTs – multiwalled carbon nanotubes; CPE – carbon paste electrode; PVCME – PVC membrane electrode; L-g-MWCNTS – L-grafted Multiwalled carbon nanotubes, GCE – glassy carbon electrode

References

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