**Electronic Supplementary Material**

**Nanomolar amperometric sensing of hydrogen peroxide using a graphite pencil electrode modified with palladium nanoparticles**

Md. Abdul Aziz, *a* Abdel-Nasser Kawde*a, b,*\*

*a Chemistry Department, King Fahd University of Petroleum and Minerals, Dhahran, 31261, Kingdom of Saudi Arabia*

b *Chemistry Department, Faculty of Science, Assiut University, Assiut 71516, Egypt.*

\*Corresponding author, E-mail: akawde@kfupm.edu.sa, Tel.: +966 3 860 2145, Fax: +966 3 860 4277



**Figure S-1**

FE-SEM images at two magnification levels, 5 µm (A) and 500 nm (B), of the PdNP-modified GPEs prepared by immersing the bare GPE in a PdNPs solution at 50 °C (a) or 90 °C (b) for 15 min.



**Figure S-2**

**(A)** Cyclic voltammograms collected in PBS (0.1 M, pH 7) containing 1 mM H2O2, in the presence of the PdNP-modified GPE prepared by immersing the bare GPE in a PdNP solution at RT (a); 50 °C (b), 75 °C (c), and 90 °C (d) for 15 min. The scan rate was 100 mV·s-1. Cyclic voltammograms were recorded after purging with argon for 20 min. **(B)** The corresponding histograms for the electroreduction (at –0.25 V) or electrooxidation (at + 0.8 V) in the presence of H2O2.