Electronic Supplementary Information

Mulberry-like gold nanospheres supported on graphene nanosheets: One-pot synthesis, characterization and photoelectrochemical property

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Fig. S1. SEM image of GO with (a) high and (b) low magnification.

Fig. S2. XRD pattern of GO.
**Fig. S3.** EDX spectrum of MGNS/GNs.

**Fig. S4.** Schematic illustration of (a) $\pi-\pi$ stacking interaction of PANI and (b) formation of MGNS.
**Fig. S5.** UV-vis spectra of MGNS/GNs$_{1}$, MGNS/GNs$_{0.4}$, MGNS/GNs$_{0.1}$ and MGNS/GNs$_{0.05}$.

**Fig. S6.** Nyquist diagrams for EIS of ITO electrode in a solution of 0.1 mol/L KNO$_3$ containing 5 mmol/L Fe(CN)$_6^{3-}$ and 5 mmol/L Fe(CN)$_6^{4-}$. (a) Bare ITO electrode, (b) APTES modified ITO electrode and (c) MGNS/GNs modified ITO electrode.