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## Supplementary information

## Facile synthesis of Au@TiO<sub>2</sub> Nanocomposite and Its Application as Photoanode in Dye-Sensitized Solar Cells

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Figure S1 Absorption spectra of (a) TiO<sub>2</sub> and (b) Au@TiO<sub>2</sub>. Insert (a) and (b) Plots of  $(\alpha hv)^2$  versus hv obtained for TiO<sub>2</sub> and Au@TiO<sub>2</sub>.



**Fig. S2.** Plots of (a) short-circuit current density  $(J_{sc})$  and open-circuit voltage  $(V_{oc})$ , and (b) maximum photocurrent density  $(J_{max})$  and maximum photovoltage  $(V_{max})$  and (c) fill factor (FF) and power conversion efficiency  $(\eta)$  obtained for Au@TiO<sub>2</sub> based DSSC with different Au contents.



Figure S3. High resolution of TEM images (a)  $TiO_2$ , (b)  $Au@TiO_2$