Supporting Information for

Reduced Graphene Oxide as Capturer of Dyes and Electrons during Photocatalysis: Surface Wrapping and Capture Promoted Efficiency

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**Figure S1.** XRD pattern of graphene-w-TiO$_2$ and anatase TiO$_2$ control. Here, graphene-w-TiO2 was referred as to graphene-w-TiO$_2$ (A) at the bottom.

**Figure S2.** Raman spectra of graphene-w-TiO$_2$ and Anatase TiO$_2$ control. Exciting source: 635 nm laser.
Figure S3. FTIR spectra of the Graphene-w-TiO$_2$ and Graphene oxide-TiO$_2$ (measured as KBr pellets).

Figure S4. AFM image of graphene oxide, at the bottom is the typical height profile of exfoliated graphene oxide.
**Figure S5.** The adsorption-desorption isotherm of physical mixing of graphene and TiO$_2$ (a) and TiO$_2$ (b). MB: 10 mg/L, 50 mL. Photocatalyst: 10 mg.

**Figure S6.** The change in optical absorption of MB solution: (a) the adsorption in the dark. (b) The photocatalytic degradation process.