Electronic Supplementary Material

Highly Effective Photocatalytic Performance of \{001\}-\text{TiO}_2/\text{MoS}_2/RGO Hybrid Heterostructures for the Reduction of \text{Rh} \text{B}

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Fig. S1 X-ray powder diffraction (XRD) patterns for \text{MoS}_2 and \text{MoS}_2/RGO (a) and \{001\}-\text{TiO}_2/\text{MoS}_2/RGO before and after photocatalysis (b)
**Fig. S2** XPS spectra for the samples; (a) Ti 2p spectra for \{001\}-TiO$_2$, (b) C 1s spectra for \{001\}-TiO$_2$/MoS$_2$/RGO.

**Fig. S3** Energy Dispersive Spectrometer (EDS) patterns for \{001\}-TiO$_2$/MoS$_2$/RGO.
Fig. S4 The color change of Rh B-{001}-TiO₂/MoS₂/RGO mixture under visible light irradiation.
Fig. S5 (a) The apparent reaction rate constants K for the photodegradation of Rh B determined by the pseudo-first order model (solid fitting curves), (b) The TOC removal curve of Rh B photocatalytic degradation by {001}-TiO$_2$/MoS$_2$/RGO. (Inset shown the recycling runs of {001}-TiO$_2$/MoS$_2$/RGO for the degradation of Rh B under visible light irradiation), (c-f) UV-Visible spectra of Blank; {001}-TiO$_2$; {001}-TiO$_2$/RGO; {001}-TiO$_2$/0.07MoS$_2$. 