

Electronic Supplementary Information (ESI)

Crystal Facets Controlled Synthesis of Graphene@TiO₂ Nanocomposites by One-Pot Hydrothermal Process

Zeyan Wang,^a Baibiao Huang,^{*a} Ying Dai,^b Yuanyuan Liu,^a Xiaoyang Zhang,^a Xiaoyan Qin,^a Junpeng Wang,^a Zhaoke Zheng,^a Hefeng Cheng^a

^a State Key Laboratory of Crystal Materials and ^b School of Physics,

Shandong University, Jinan 250100, China

*e-mail: bbhuang@sdu.edu.cn

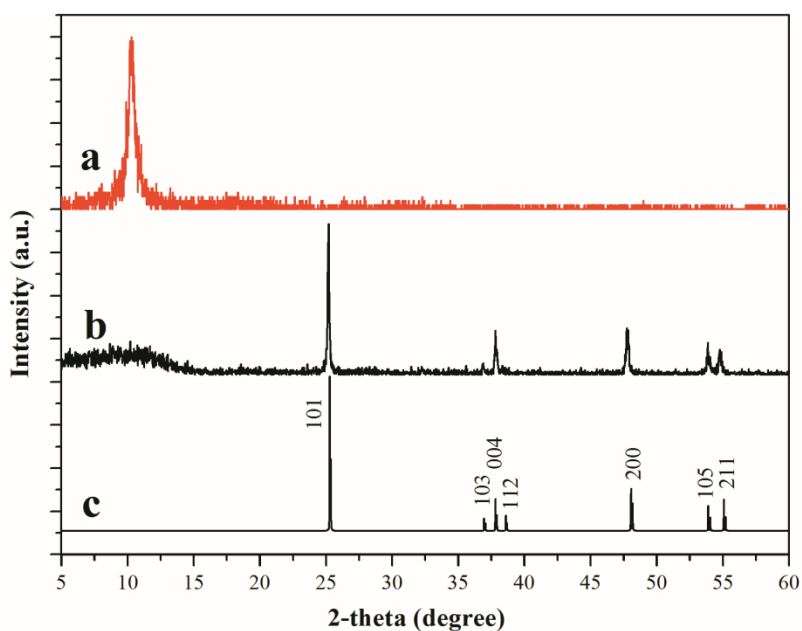


Figure S1. XRD patterns of (a) as-prepared GO, (b) graphene@ TiO₂ nanocomposites prepared by a hydrothermal reaction with aqueous solutions containing (NH₄)₂TiF₆ (0.03 M) and GO at 160 °C for 4 h, (c) standard anatase TiO₂ (JCPDS 21-1272).

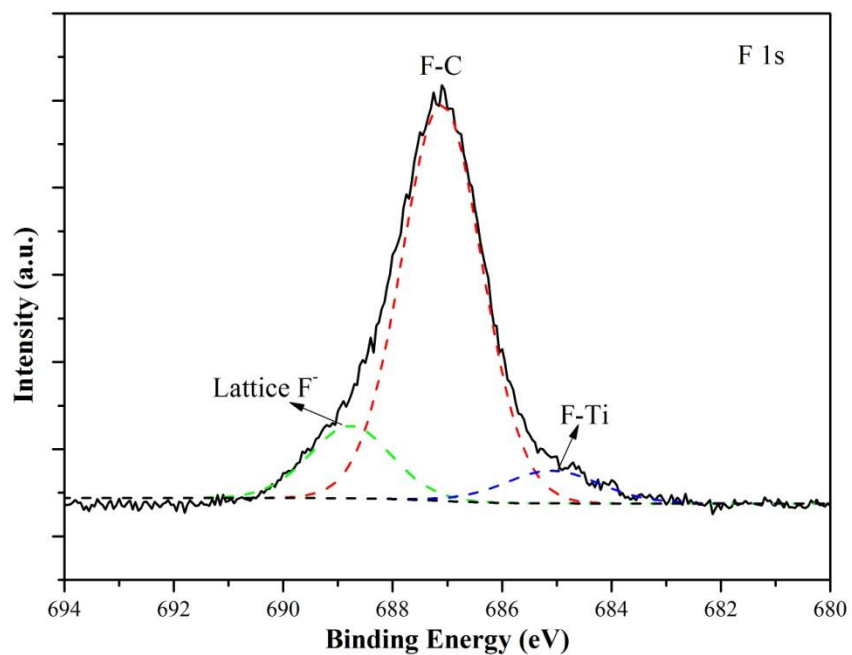


Figure S2. High-resolution F 1s XPS spectra of graphene@ TiO₂ nanocomposites prepared by a hydrothermal reaction with aqueous solutions containing (NH₄)₂TiF₆ (0.03 M) and GO at 160 °C for 4 h.

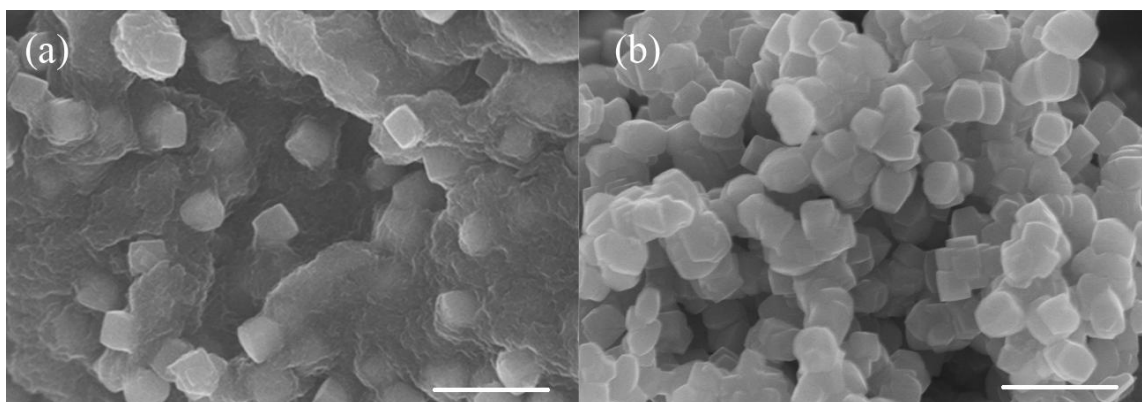


Figure S3. SEM images for the samples prepared from $(\text{NH}_4)_2\text{TiF}_6$ precursor solutions (a) with and (b) without GO by hydrothermal methods under identical conditions ($[(\text{NH}_4)_2\text{TiF}_6]=0.03$ M, 160 °C for 4 h). The scale bar is 1 μm .

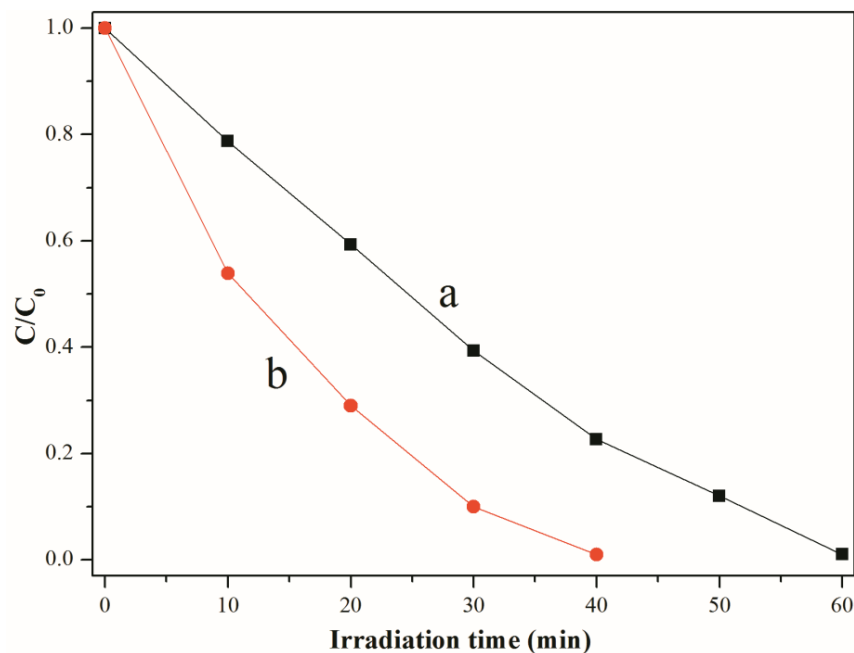


Figure S4. Photodegradation of Mb dye as a function of irradiation time over (a) graphene@P25 and (b) graphene@TiO₂ nanocomposites prepared by a hydrothermal reaction with aqueous solutions containing (NH₄)₂TiF₆ (0.03 M) and GO at 160 °C for 4 h.