One-step synthesis of CdS-TiO_2-chemically reduced graphene oxide composites via microwave-assisted reaction for visible-light photocatalytic degradation of methyl orange

Tian Lv[a], *Likun Pan*[a],*, *Xinjuan Liu*[a], *Ting Lu*[a], *Guang Zhu*[a], *Zhuo Sun*[a], *Changqing Sun*[b]

[a]Engineering Research Center for Nanophotonics & Advanced Instrument, Ministry of Education, Department of Physics, East China Normal University, Shanghai 200062, China

[b]School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798 Singapore

Email: lkpan@phy.ecnu.edu.cn

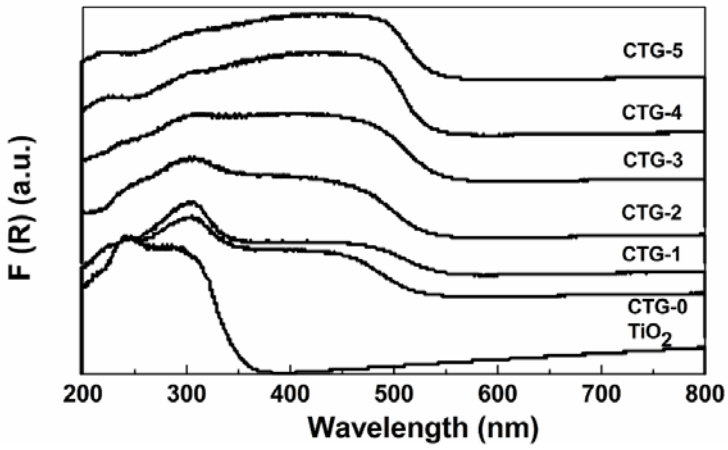

Fig. S1. Diffuse reflectance spectra of TiO_2, CTG-0, CTG-1, CTG-2, CTG-3, CTG-4 and CTG-5.

The diffuse reflectance spectra was investigated through Kubelka-Munk function: $K/S=F(R)=(1-R)^2/2R$, to approximate the optical absorbance precisely, as shown in Fig. S1. The scattering is noted as S and reflectance is noted as R. The reflectance relates to the absorption coefficient α (K/S) which is proportional to absorbance K. The pure TiO_2 absorbs the light at $\lambda < 350$ nm and the absorption of CdS-TiO_2-RGO composites is extended to

visible light of about 500 nm due to the incorporation of CdS. The absorbance of RGO is observed at ~230 nm.