Electronic Supplementary Information

Porous peanut-like $Bi_2O_3/BiVO_4$ composites with heterojunctions: one-step synthesis and their photocatalytic properties

Lang Chen,[a] Qiang Zhang,[a] Rui Huang,[a] Shuang-Feng Yin*,[a], Sheng-Lian Luo[a], Chak-Tong Au[a,b]

[a] *State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, Hunan, PR China. Fax: 86-731-88821310; Tel: 86-731-88821310; E-mail: sf_yin@hnu.edu.cn*

[b] *Department of Chemistry, Hong Kong Baptist University, Kowloon Tong, Hong Kong, PR China.*

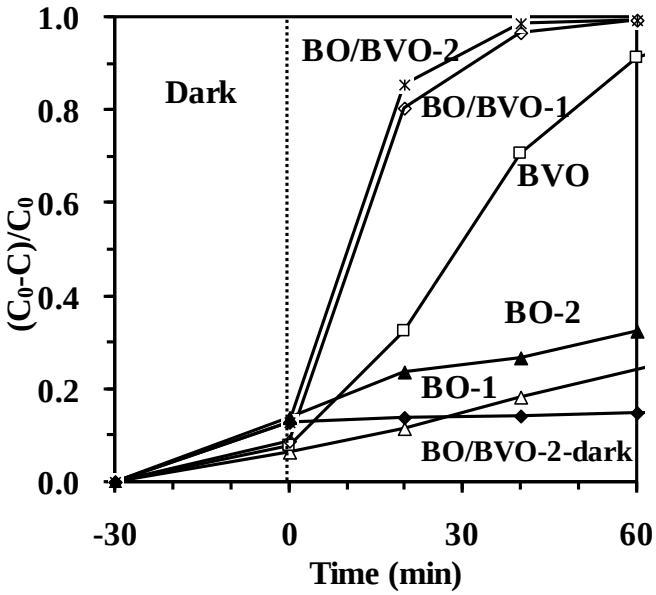

Figure S1. Adsorption and photocatalytic degradation properties of MB on the as-synthesized samples (BO-1: commercial Bi_2O_3; BO-2: Bi_2O_3 synthesized at the similar conditons to BO/BVO).

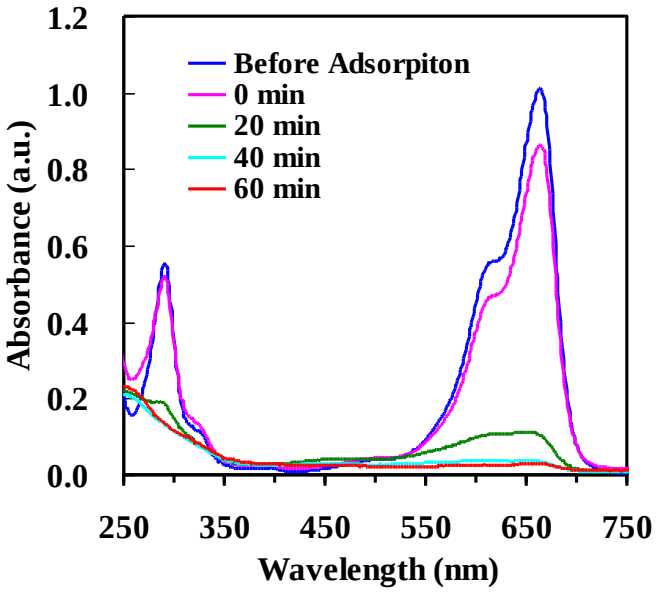

Figure S2. Absorption spectra of methylene blue (MB) at different exposure durations (catalyst: BO/BVO-2).

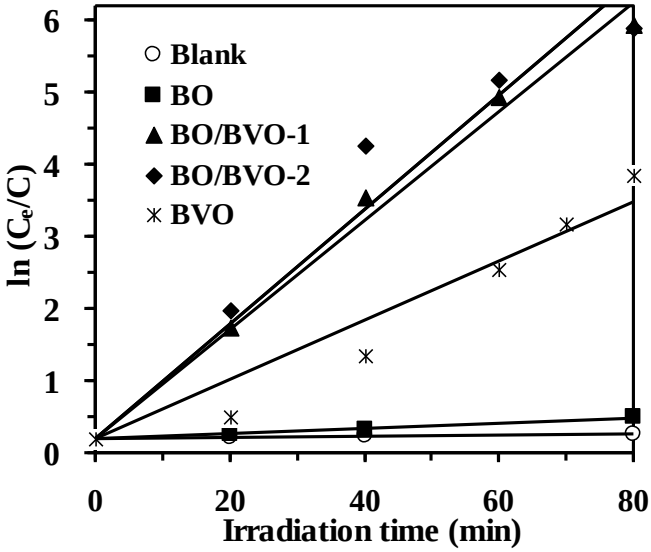

Figure S3. Photocatalytic degradtion rates of MB in the presence of as-prepared samples (blank: k=0.0007 min^{-1}; BO: k=0.0036 min^{-1}; BVO; k=0.0410 min^{-1}; BO/BVO-1: k=0.0757 min^{-1}; BO/BVO-2: k=0.0796 min^{-1})