Electronic Supplementary Information

One-pot controlled synthesis of sea-urchin shaped Bi$_2$S$_3$/CdS hierarchical heterostructures with excellent visible light photocatalytic activity

Yunhan Shi,$^a$ Yajie Chen,$^a$ Guohui Tian,$^{a,*}$b Honggang Fu,$^a$ Kai Pan,$^a$ Juan Zhou$^a$ and Haijing Yan$^a$

$^a$ Key Laboratory of Functional Inorganic Material Chemistry, Ministry of Education of the People's Republic of China, Heilongjiang University, Harbin 150080 P. R. China,

Corresponding author E-mail: tiangh@hlju.edu.cn

$^b$ High-efficiency Conversion, College of Heilongjiang Province, School of Chemistry and Materials Science, Heilongjiang University, Harbin 150080, China

Fig. S1 SEM image of the crushed Bi$_2$S$_3$/CdS hierarchical heterostructure composite (BC2).
Fig. S2 Comparison of photocatalytic degradation of RhB aqueous solutions (10 mg/L) degraded by (a) the Bi$_2$S$_3$/CdS hierarchical heterostructure composite (BC2) and (b) the crushed Bi$_2$S$_3$/CdS hierarchical heterostructure composite (BC2) under visible light irradiation.

Fig. S3 The profiles of total organic carbon (TOC) removals for the photodegradation of RhB (10 mg/L) in different aqueous catalysts under visible light irradiation, (a) the Bi$_2$S$_3$/CdS hierarchical heterostructure composite (BC2) and (b) the crushed Bi$_2$S$_3$/CdS hierarchical heterostructure composite (BC2).