Electronic Supplementary Material (ESI) for RSC Advances.

Supporting materials for:

Facile preparation of novel quaternary g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 nanocomposites: Magnetically separable visible-light-driven photocatalysts with significantly enhanced activity

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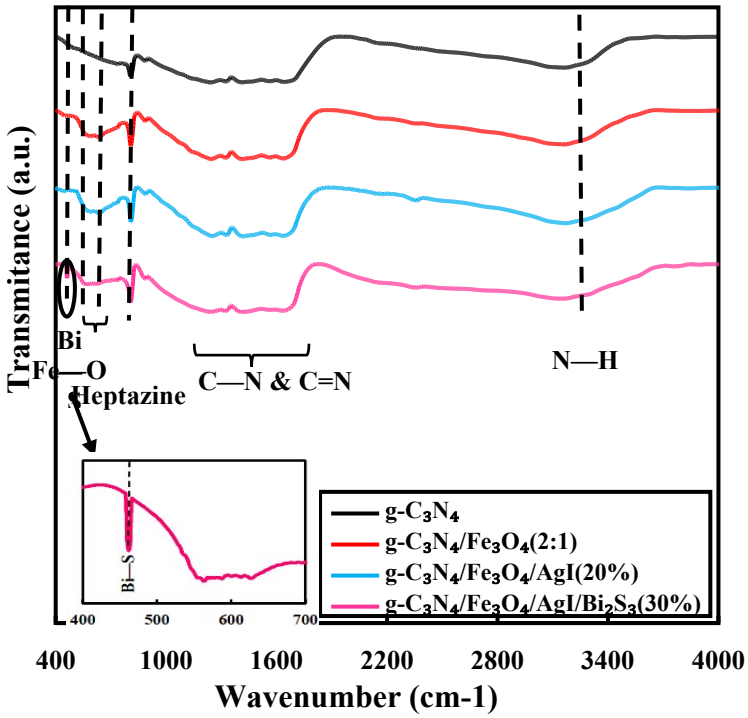


Fig. 1S. FT-IR spectra for the g-C_3N_4, g-C_3N_4/Fe_3O_4, and g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 (30%) samples.

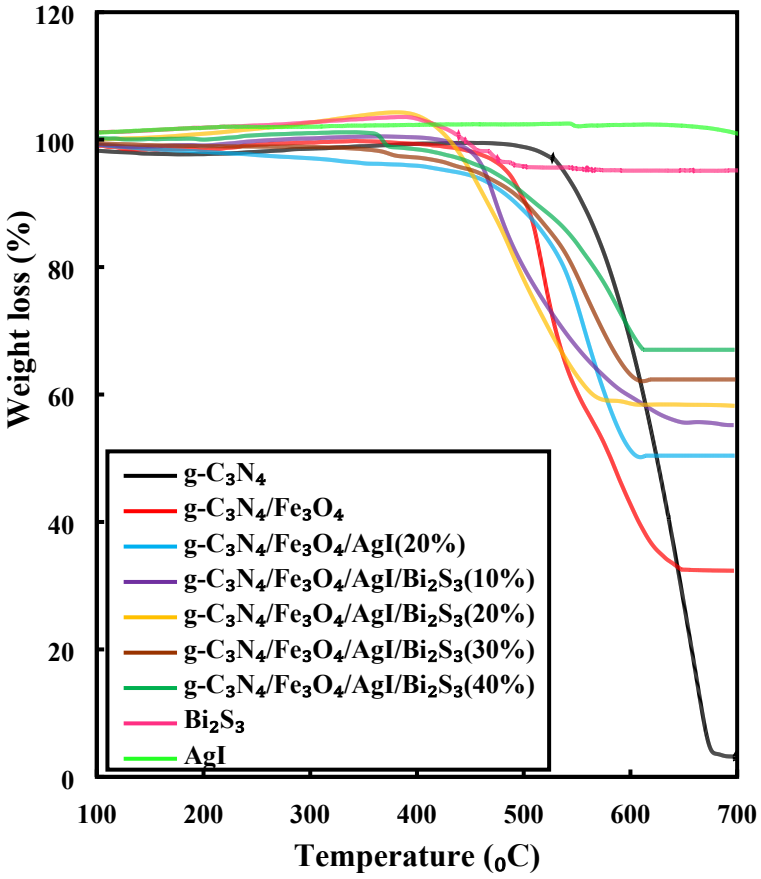
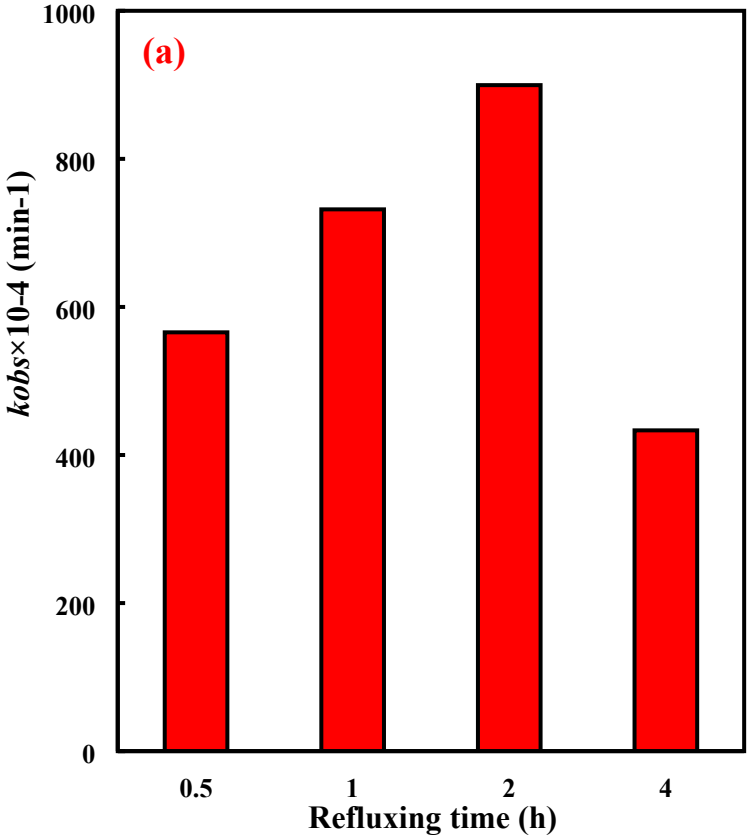
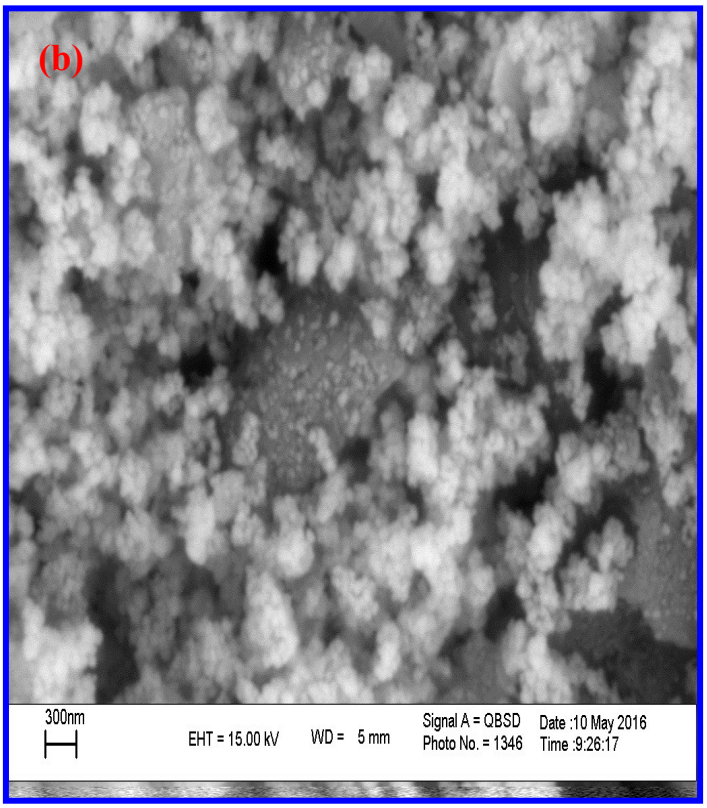
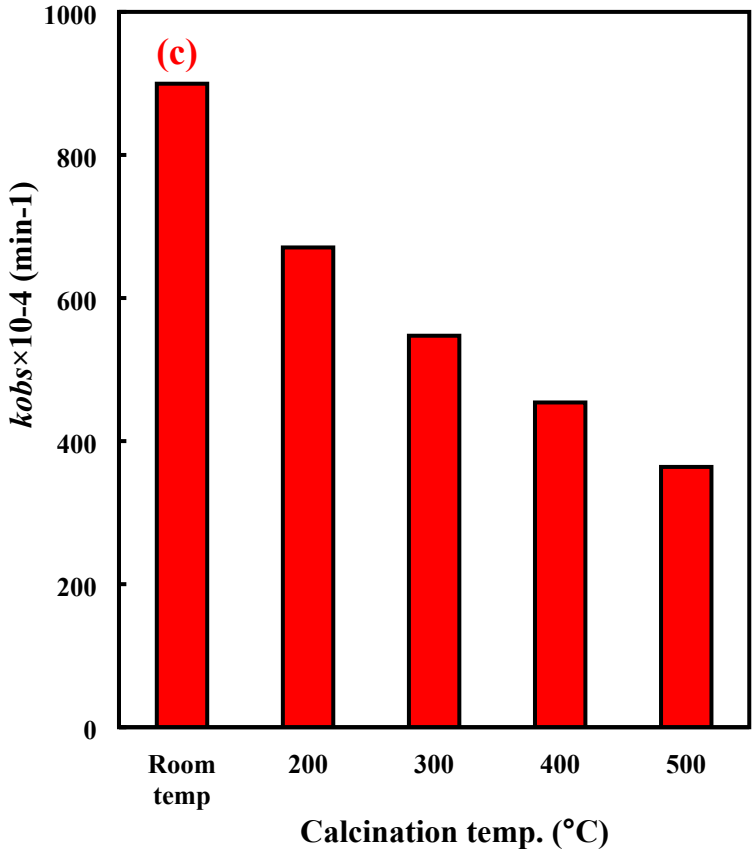


Fig. 2S. TGA curves for the g-C_3N_4, g-C_3N_4/Fe_3O_4, and g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 nanocomposites with different weight percents of Bi_2S_3 along with the pure AgI and Bi_2S_3 samples.


(a)
1000
800
600
400
200
0
kobs×10-4 (min-1)
0.5
1
2
4
Refluxing time (h)


(b)
300nm
EHT = 15.00 kV
WD = 5 mm
Signal A = QBSD
Photo No. = 1346
Date :10 May 2016
Time :9:26:17


(c)
1000
800
600
400
200
0
kobs×10-4 (min-1)
Room temp
200
300
400
500
Calcination temp. (°C)

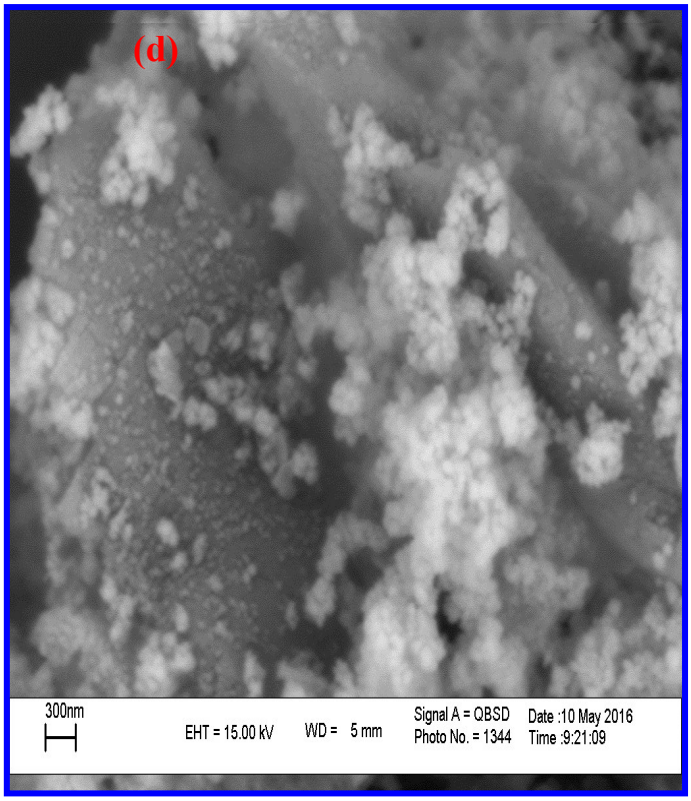


Fig. 3S. (a) The degradation rate constants of RhB over the g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 (30%) nanocomposite prepared at different refluxing times. (b) SEM image of the g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 (30%) nanocomposite prepared by refluxing for 4 h. (c) The degradation rate constants of RhB over the g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 (30%) nanocomposite calcined at different temperatures. (d) SEM image of the g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 (30%) nanocomposite calcined at 500 °C for 2 h.

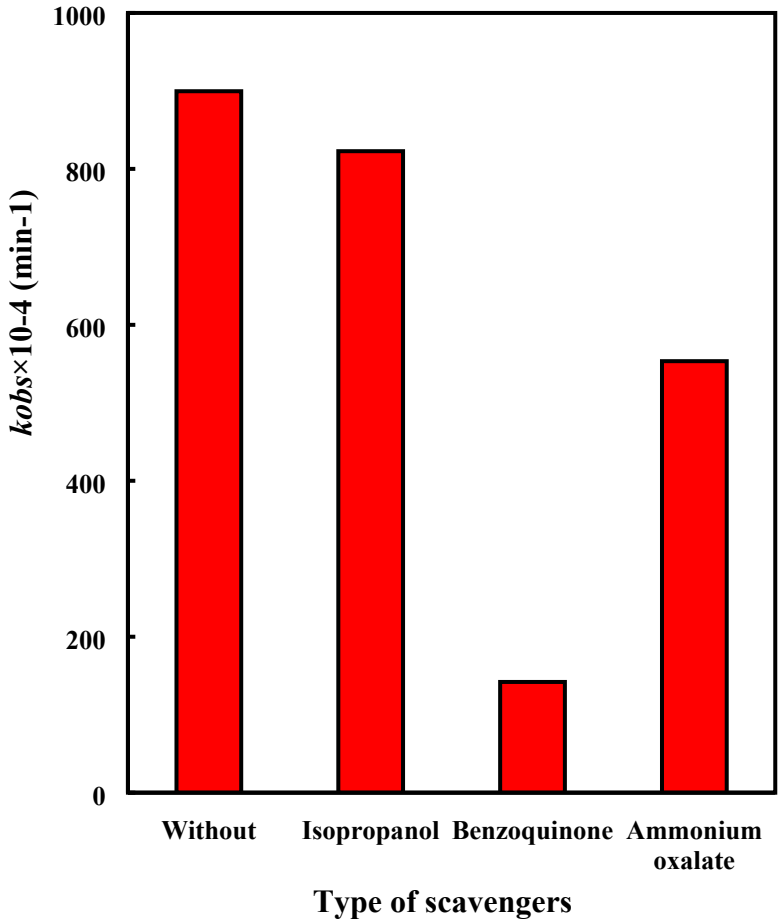


Fig. 4S. The degradation rate constants of RhB over the g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 (30%) nanocomposite in presence of various scavengers.

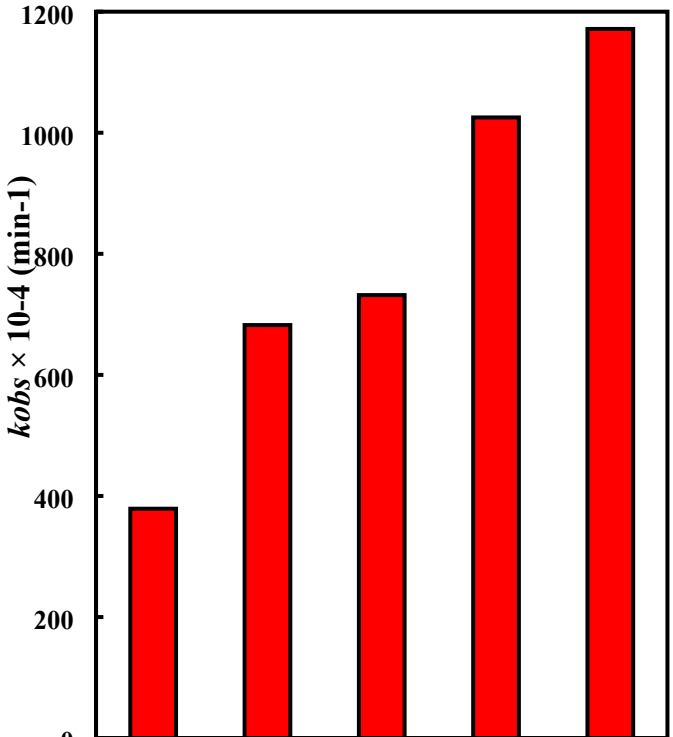


Fig. 5S. Effect of solution pH on the degradation rate constant of RhB over the g-C_3N_4/Fe_3O_4/AgI/Bi_2S_3 (30%) nanocomposite.