Supplementary Information

Hierarchical core-shell SiO_2@PDA@BiOBr microspheres with enhanced visible-light-driven photocatalytic performance

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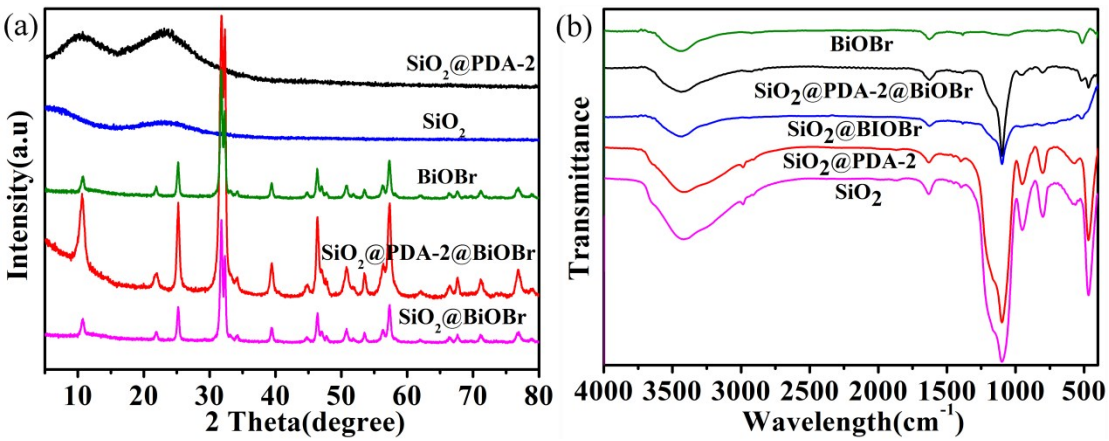

Fig. S1. (a) XRD patterns and (b) FT-IR spectra of samples.

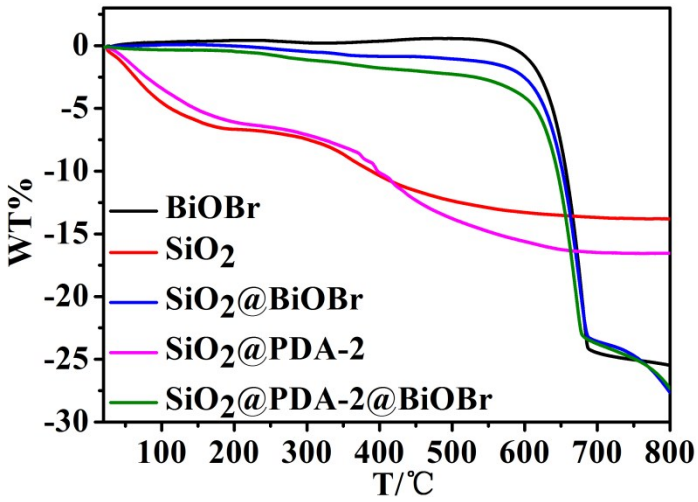

Fig. S2. Thermal analysis of samples under air atmosphere.

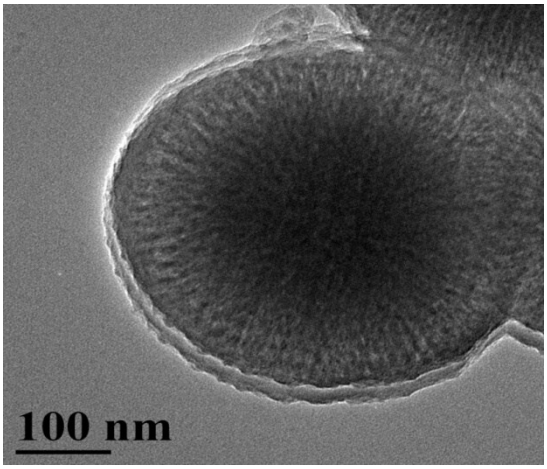

Fig.S3. TEM images of SiO_2@PDA-2.

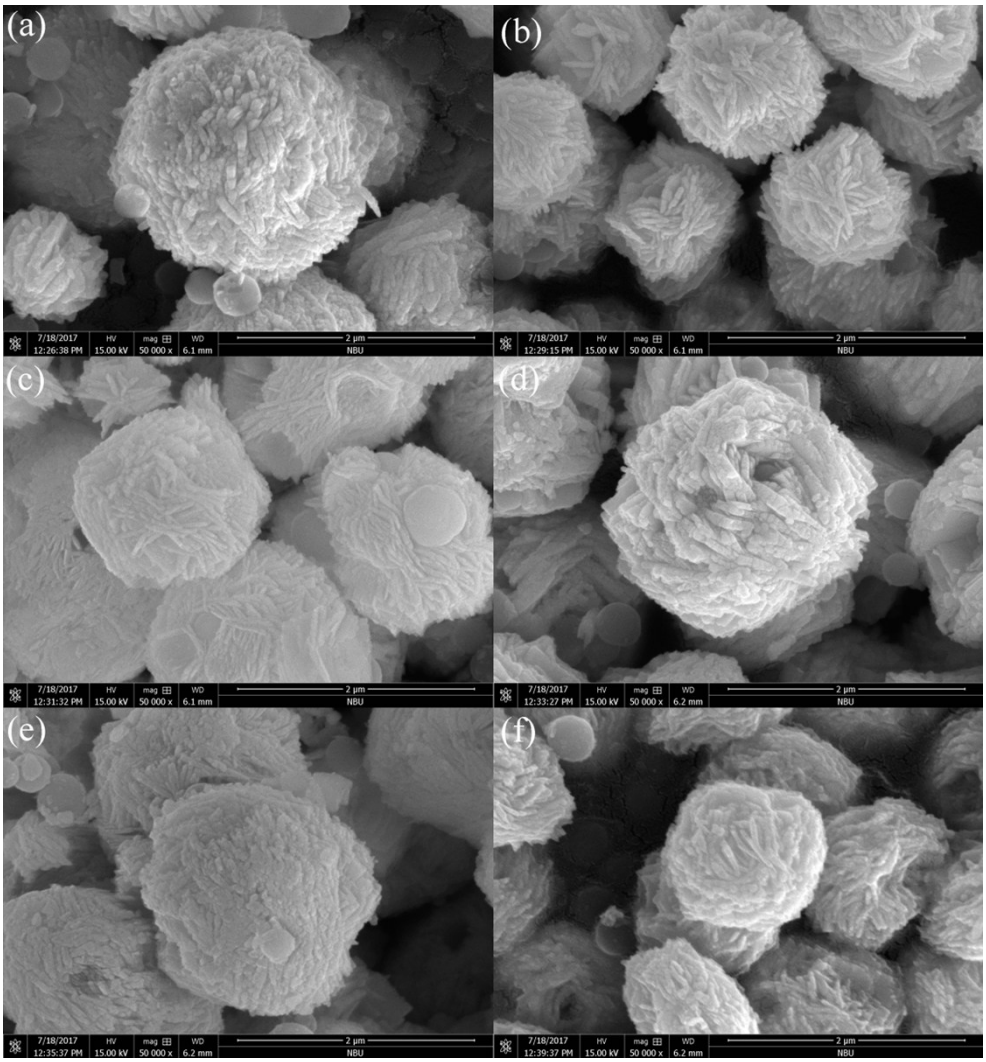

Fig. S4. SEM images of (a) SiO_2@PDA-1@BiOBr, (b) SiO_2@PDA-3@BiOBr, (c) SiO_2@PDA-4@BiOBr, (d) 0.1-SiO_2@PDA-2@BiOBr, (e) 0.2-SiO_2@PDA-2@BiOBr, (f) 0.4-SiO_2@PDA-2@BiOBr.

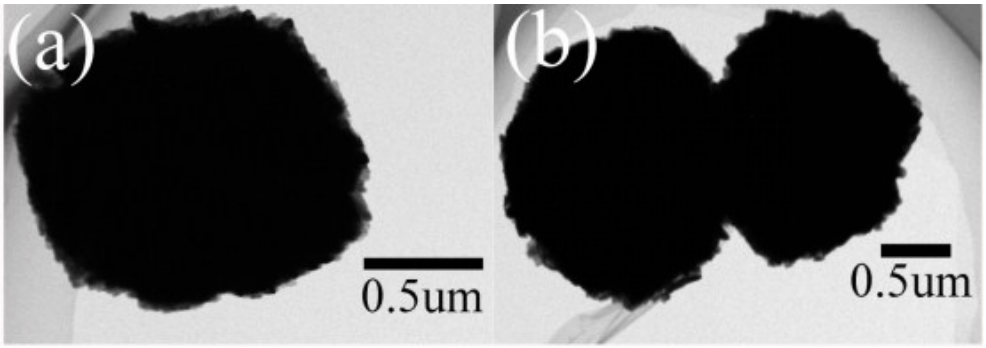

Fig. S5. TEM images of SiO_2@PDA-2@BiOBr.

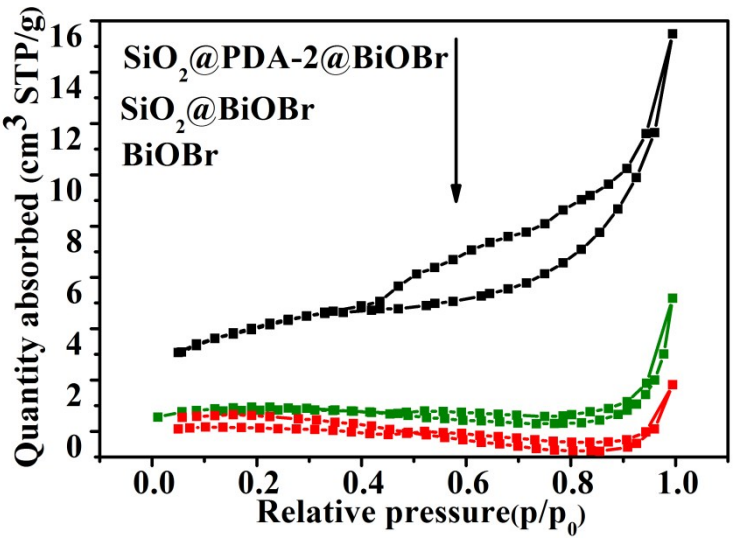

Fig. S6. Nitrogen adsorption-desorption isotherms of samples.

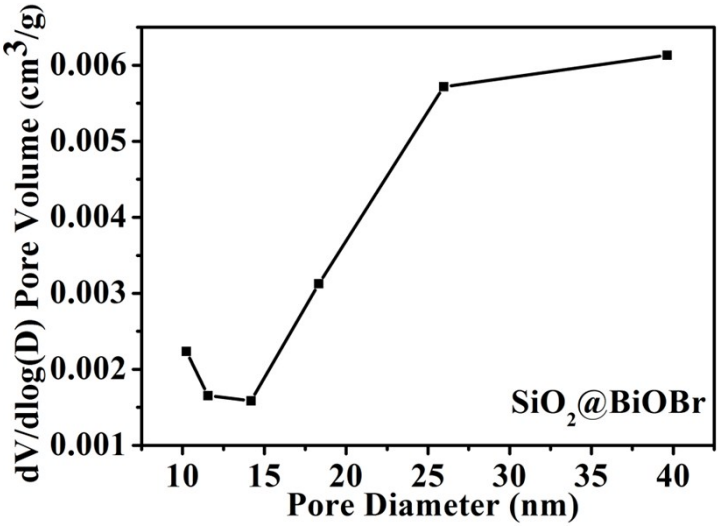

Fig. S7. Pore size distributions of sample.

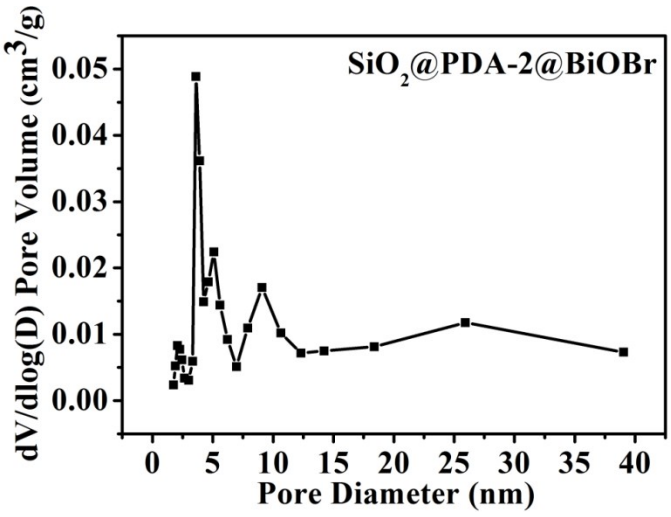

Fig. S8. Pore size distributions of sample.

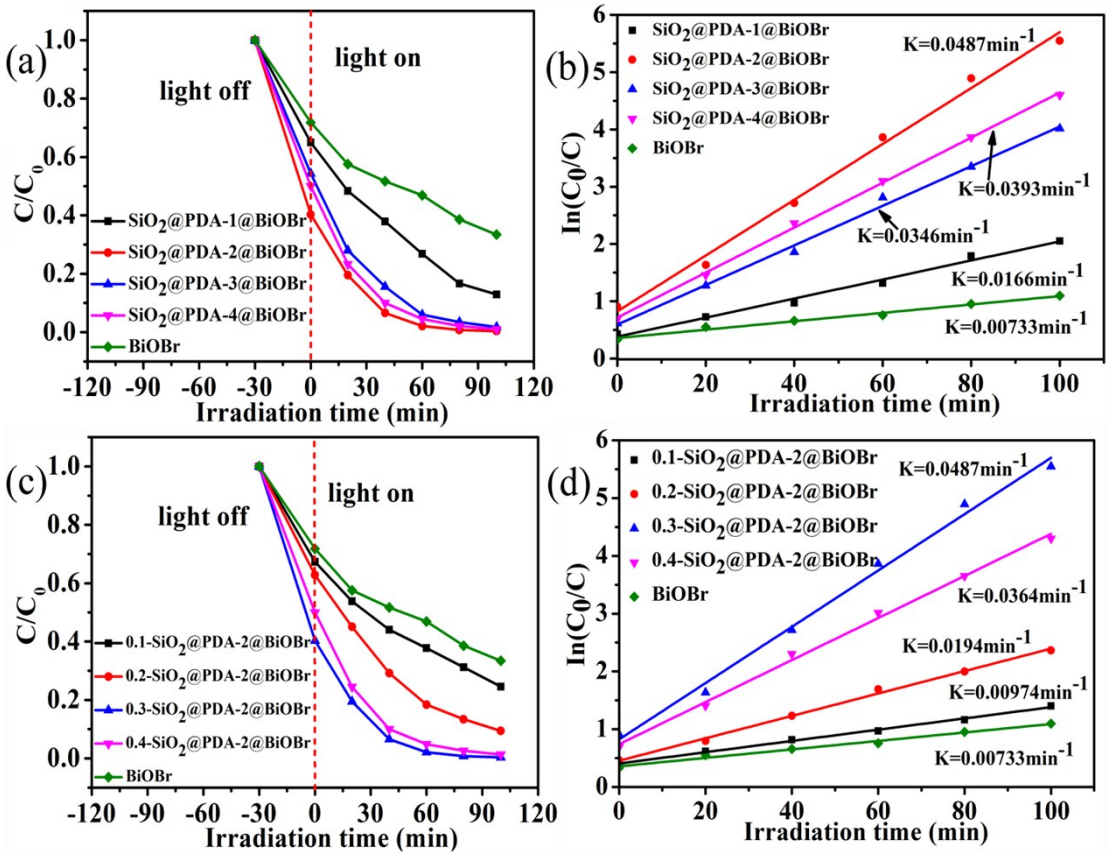

Fig. S9. (a) and (c) Photocatalytic degradation efficiencies of RhB with different samples sunder visible-light irradiation. (b) and (d) Comparison of the rate constant k in the presence of different samples.

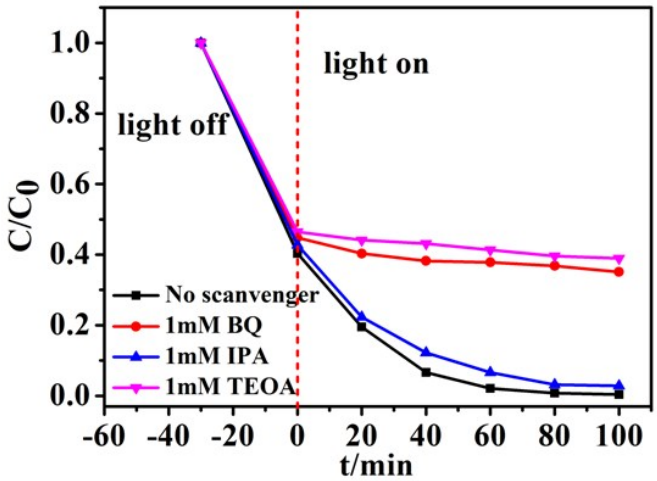

Fig. S10. Time-dependent trapping experiment of active species during the photodegradation of RhB over SiO_2@PDA-2@BiOBr photocatalyst under irradiation.

Table S1. Summary of the photodegradable preformance of some BiOBr composite photocatalysts for organic pollutants.

Composite	Irrigation	Organic pollutants	Initial concentration (mg L^{-1})	Time (min)	Sample amount (mg)	Solution volume(ml)	Ref.
BiOBr-g-C_3N_4	sunlight	RhB	10	40	10	50	10
BiOBr@TiO_2	sunlight	RhB	20	40	50	50	11
BiOBr/NH_2-MIL-125(Ti)	sunlight	RhB	20	100	40	200	12
BiOBr@SiO_2 @Fe_3O_4	sunlight	BPA	20	50	100	100	13
Fe_3O_4@SiO_2@ BiOBr	sunlight	RhB	4.79	60	100	200	14
SiO_2−BiOBr	sunlight	RhB	20	100	200	100	15
SiO_2@PDA-2@BiOBr	sunlight	RhB	15	100	50	200	**this work**