Electronic Supplementary Material (ESI) for RSC Advances.

Visible-light-induced degradation of polybrominated diphenyl ethers with AgI-TiO_2

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Supplementary materials

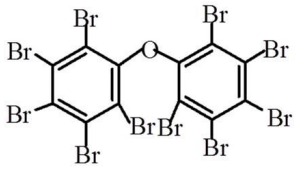

Fig. S1. The structure of BDE209

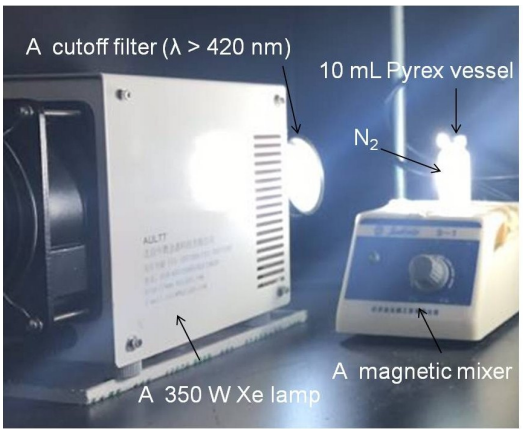

Fig. S2. The photo of the reaction devices.

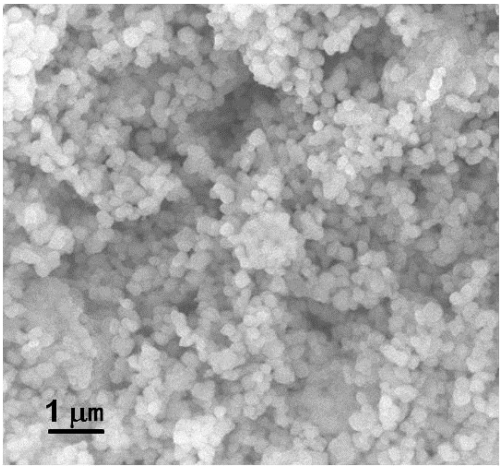

Fig. S3. SEM image of 0.2-AgI-TiO_2

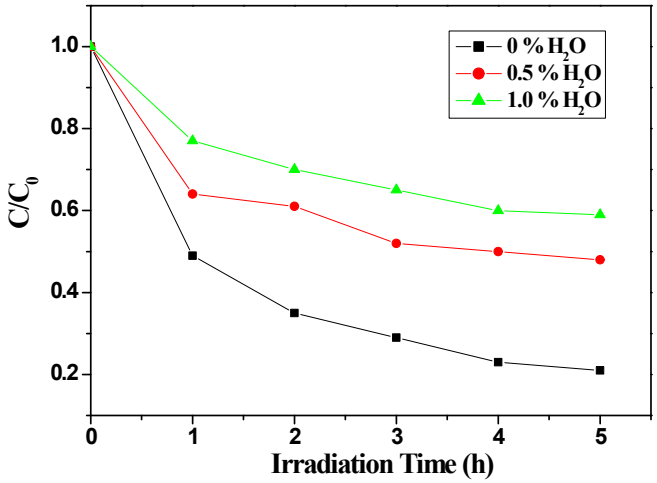

Fig. S4. Temporal curves of the photodegradation of BDE209 under different ratio H_2O under visible irradiation. BDE209: 1.0×10^{-5} mol/L, AgI-TiO_2: 1mg/mL, solvent: H_2O/CH_3OH (V/V: 0%, 0.5%, 1.0%), wavelength > 420 nm, anoxic condition.

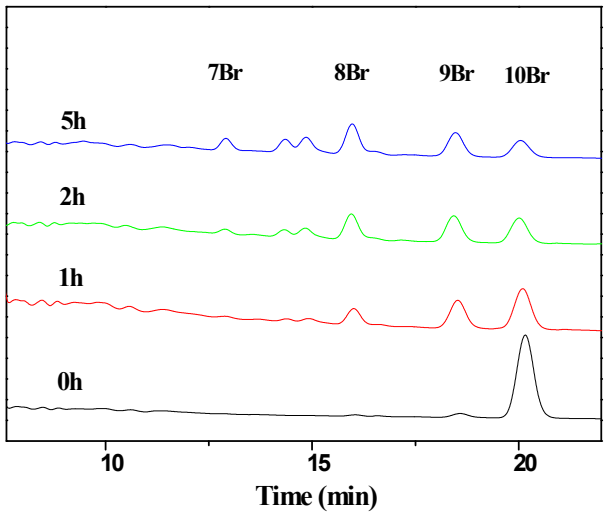

Fig. S5HPLC chromatograms of degradation products of BDE209 with AgI-TiO_2 in different irradiation times. BDE209: 1.0×10^{-5} mol/L, solvent: CH_3OH, wavelength > 420 nm; 0.2-AgI-TiO_2, 1.0 mg/mL; anoxic condition.

Table S1 Adsorption amount and photocatalytic degradation rates of BDE209 with 0.2-AgI-TiO_2 under various solvent conditions [a]

	solvents	Adsorption amount (%)	Degradation rate (%)[a]
1	toluene	0	0
2	acetone	0	0
3	hexane	0	0

4	THF	0.2	0
5	DMSO	0.6	0
6	DMF	4.1	56.6
7	acetonitrile	20.4	33.6
8	methanol	30.1	71.1

BDE209, 1.0×10^{-5} mol/L; 0.2-AgI-TiO_2, 1.0 mg/mL; wavelength > 420 nm; anoxic condition. [a] Removed ratios after 3 h of irradiation.

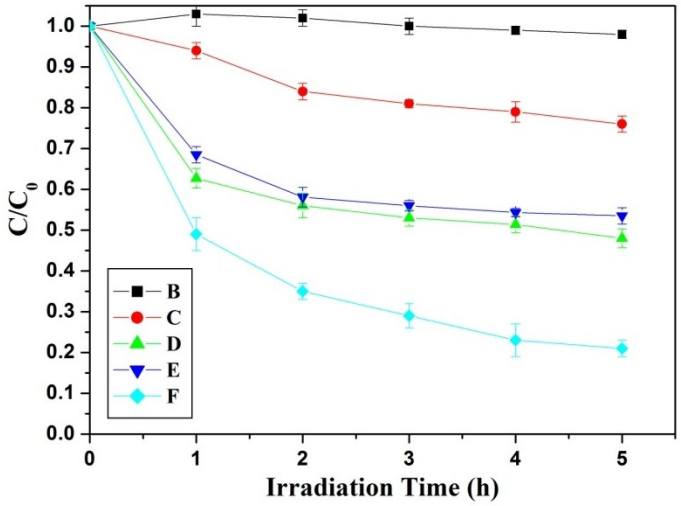

Fig. S6 degradation products of BDE209 in different conditions. BDE209, 1.0×10^{-5} mol/L; solvent, CH_3OH; wavelength, > 420 nm; catalyst, 1.0 mg/mL; B) 0.2-AgI-TiO_2/O_2; C) 0.2-AgI-TiO_2/air; D) 0.2-AgI-Al_2O_3/N_2; E) 0.2-AgI-SiO_2/N_2; F) 0.2-AgI-TiO_2/N_2