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Electronic Supplementary Information

Cellulose-templated Bi_2SiO_5 nanorods with enhanced UV/Vis light utilization for high-performance photocatalytic degradation of organic contaminants

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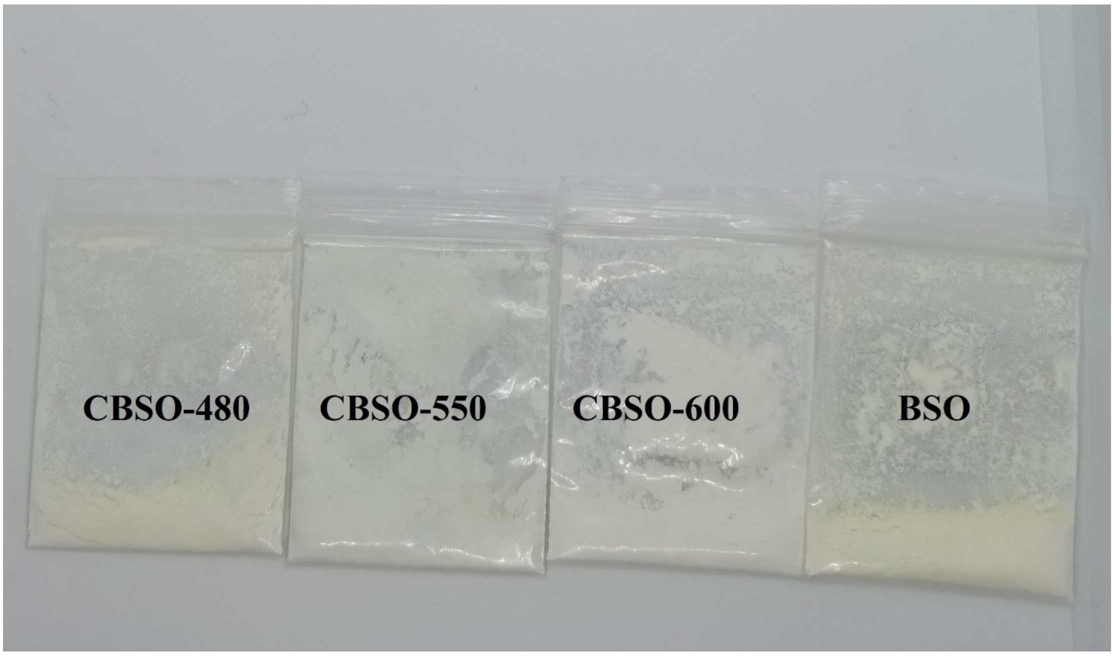

Fig. S1 The digital photograph of the photocatalysts.

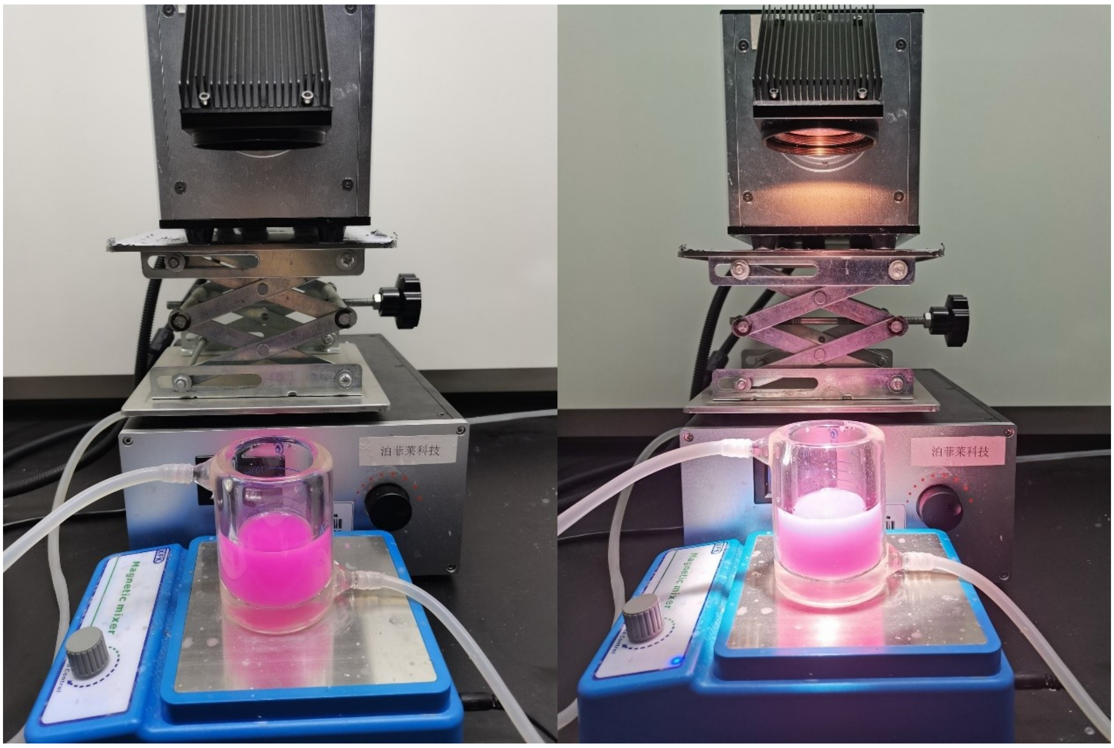

Fig. S2 Experimental apparatuses for RhB degradation (Left: light off; Right: light on.).

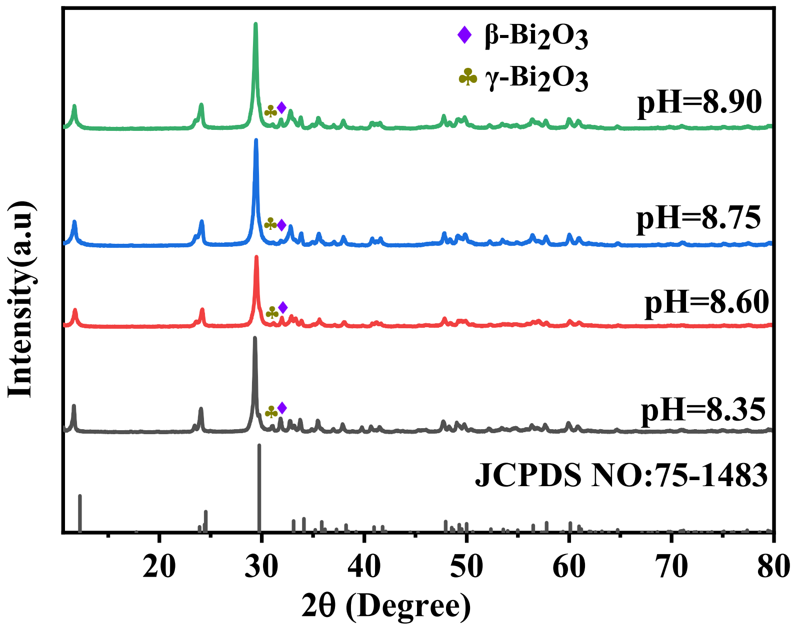

Fig. S3 XRD patterns of CBSO samples prepared with different pH values.

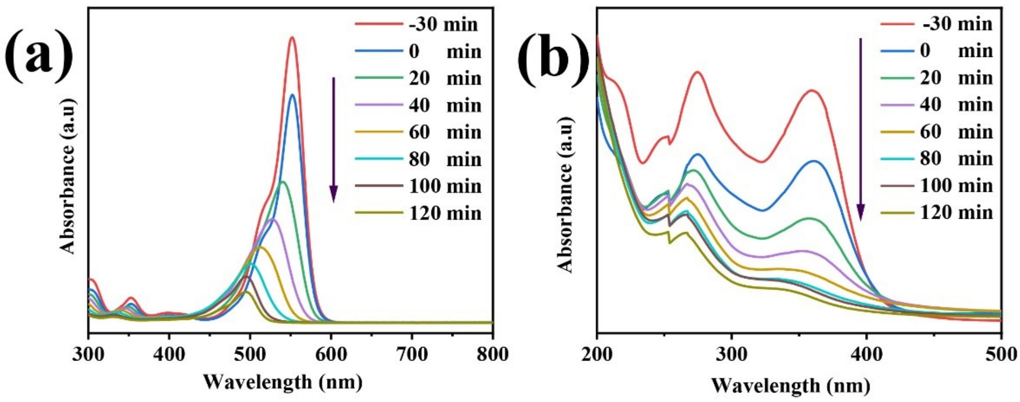

Fig. S4 UV-Vis absorption spectra of (a) RhB and (b) TC in the presence of the CBOS-600 under visible light.

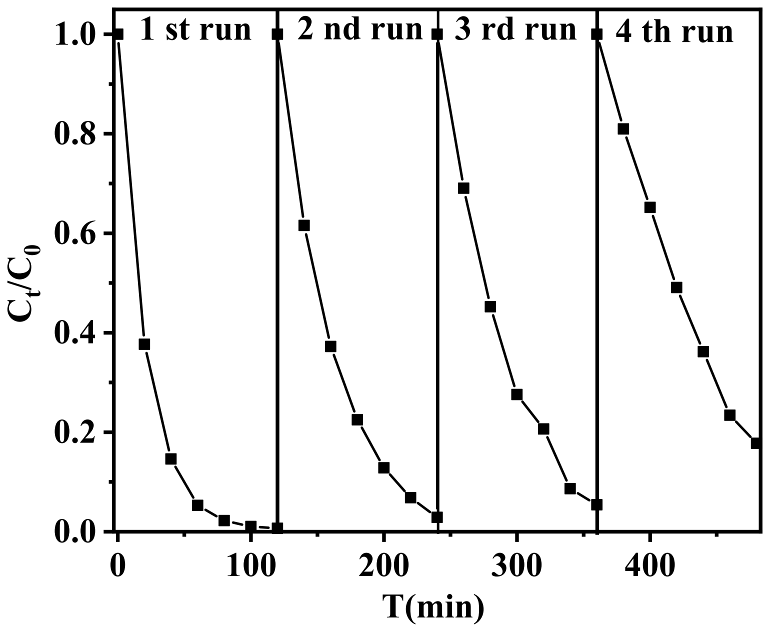

Fig. S5 The reusability of the CBOS-600 catalyst.

Table S1 The FWHM and crystal size of Bi_2SiO_5 crystal

Crystal Face	Photocatalysts	2 Theta/degree	FWHM	Crystal size/nm*
(311)	CBSO	29.38	0.35	24.20
	BSO	29.38	0.29	29.31

*The crystal size was calculated with the Scherrer formula:

$D = K\lambda/\beta\cos\theta$

where D is crystalline size, K is a constant (0.9), λ represents the wavelength of the incident X-rays (1.5406 Å), β is the full width at half maximum (FWHM) and θ is the Bragg angle for the diffraction peaks.

Table S2 Structural parameters of the BSO and CBSO.

Samples	**BET ($m^2.g^{-1}$)**	**Pore volume ($cm^3.g^{-1}$)**	**Average pore size (nm)**
BSO	20.775	0.148	7.264
CBSO-600	50.143	0.207	3.007
Bi_2SiO_5/$Bi_{12}SiO_{20}$[1]	20.7	0.05	4.4
Bi_2SiO_5[2]	44.7	0.32	28.8
OVs-Bi_2SiO_5[3]	44.2	0.24	10.9

Table S3 Comparison of RhB degradation using various photocatalysts.

Ref	Photocatalyst	Catalyst dosage (g/L)	Concentration (mg/L)	Reaction Time (min)	Degradation (%)	Light source
This work	Bi_2SiO_5 nanoparticles	2	100	120	99.88	Xenon lamp, 300 W Vis
		2	100	60	100	Xenon lamp, 300 W UV+Vis
4	Bi_2S_3/Bi_4O_7	0.5	10	60	99.2	Xenon lamp, 500 W Vis
5	$C\text{-}WO_3$	0.5	20	180	95	Xenon lamp, 300 W Vis+UV
6	$Fe\text{-}g\text{-}C_3N_4$	0.4	10	150	100	Xenon lamp, 300 W Vis
7	$Au\text{-}SiO_2/g\text{-}C_3N_4$	1	10	90	99.8	Xenon lamp, 150 W Vis
8	P-ZnO	0.5	5	180	100	Halogen lamp, 300 W Vis
9	$Fe_3O_4/SiO_2/TiO_2$	0.5	20	180	92.8	Xenon lamp, 300 W UV

10	TiO_2/WO_{3-x}	1.5	10	100	97.4	Xenon lamp, 500 W Vis
11	TiO_2/ZnO-g-C_3N_4	0.5	5	120	99.6	Mercury lamps 19 W UV
12	ZnO-SiO_2	0.5	7.2	60	74	UV lamp, 300 W UV
13	TiO_2	1	10	60	95	UV lamp, 7 W UV
14	B/W-TiO_2	0.4	5	60	90.4	Xenon lamp, 500 W Sunlight
15	ZnO/G/C_3N_4	1	10	80	100	Xenon lamp, 200 W Vis
16	WO_3/g-C_3N_4	0.5	5	90	91	Tungsten lamp, 500 W Sunlight

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