Supplementary Materials

Synergy of sp^2-Hybridized Carbon Doping and Photogenerated Surface Oxygen Vacancies for Enhancing Photocatalytic Performance of BiOCl and Solvent Effects

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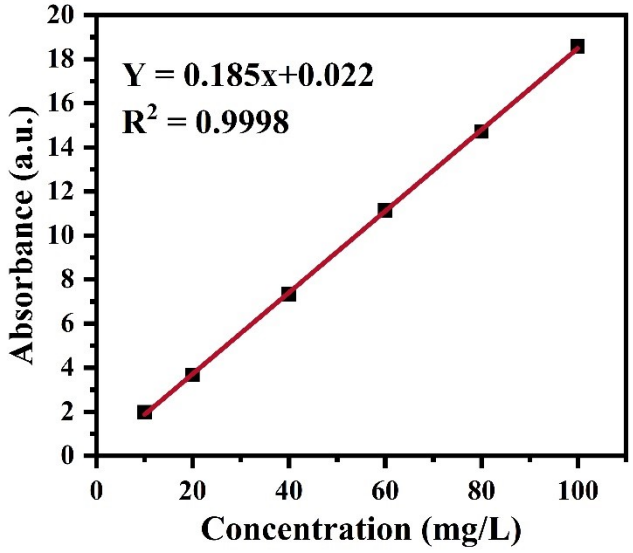

Figure S1. Standard curves of RhB.

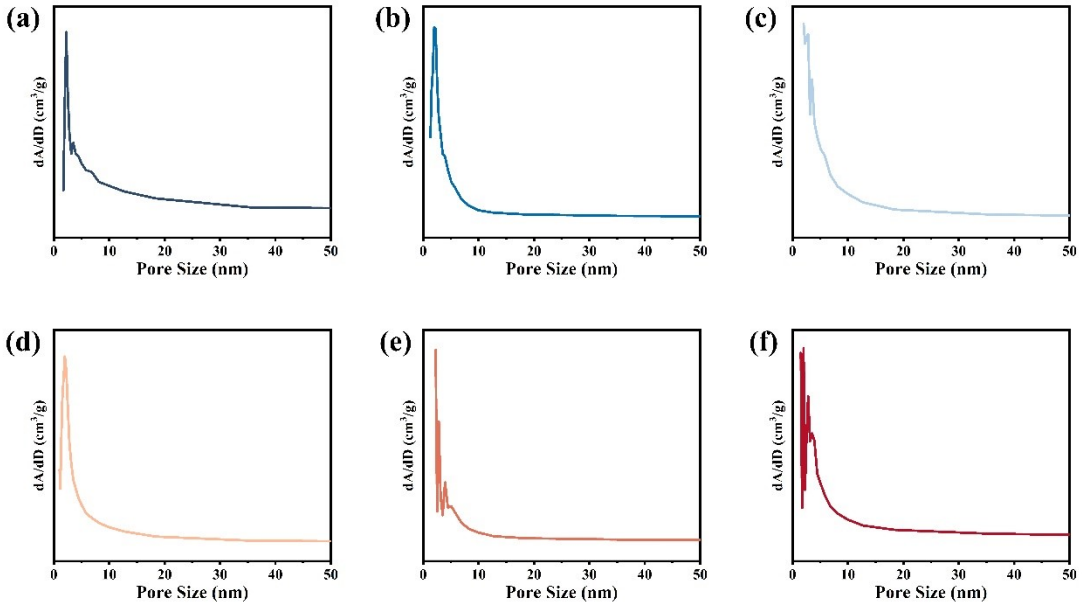

Figure S2. Pore size distribution curves of (a) BOC-EG, (b) BOC-EG-G, (c) BOC-E, (d) BOC-E-G, (e) BOC-W and (f) BOC-W-G.

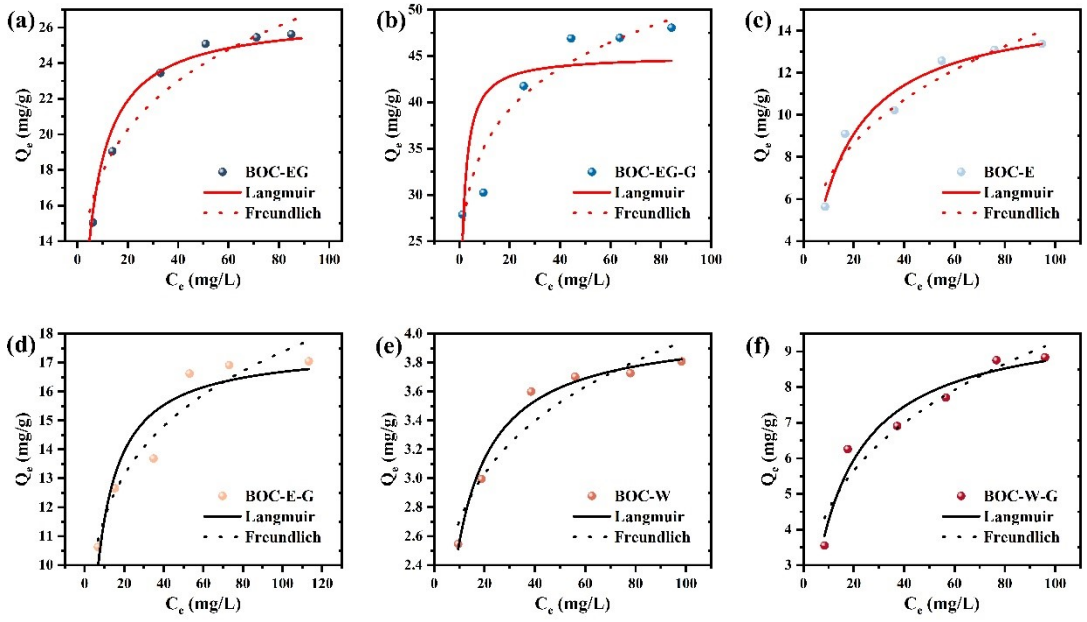

Figure S3. Langmuir and Freundlich fitting of adsorption isotherm of (a) BOC-EG, (b) BOC-EG-G, (c) BOC-E, (d) BOC-E-G, (e) BOC-W and (f) BOC-W-G.

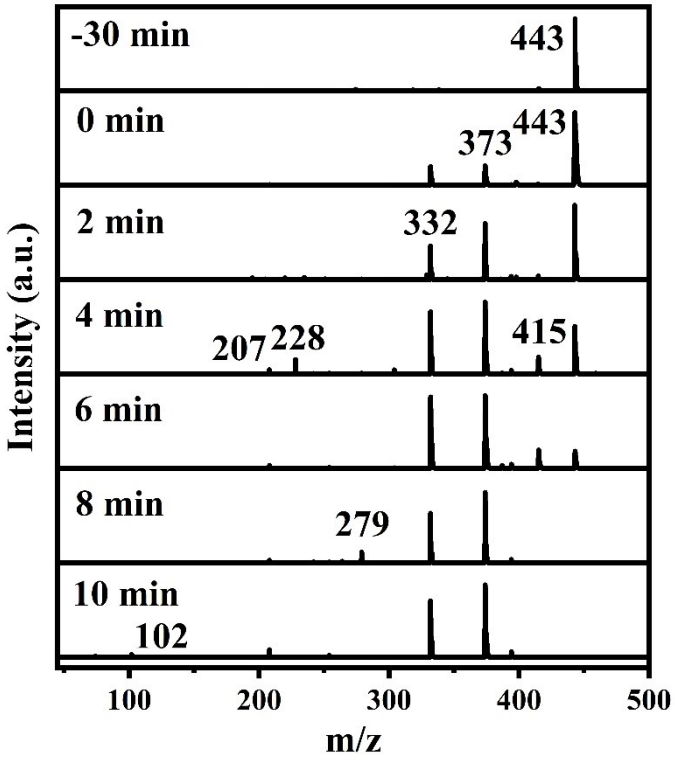

Figure S4. Mass spectra of RhB at different degradation time.

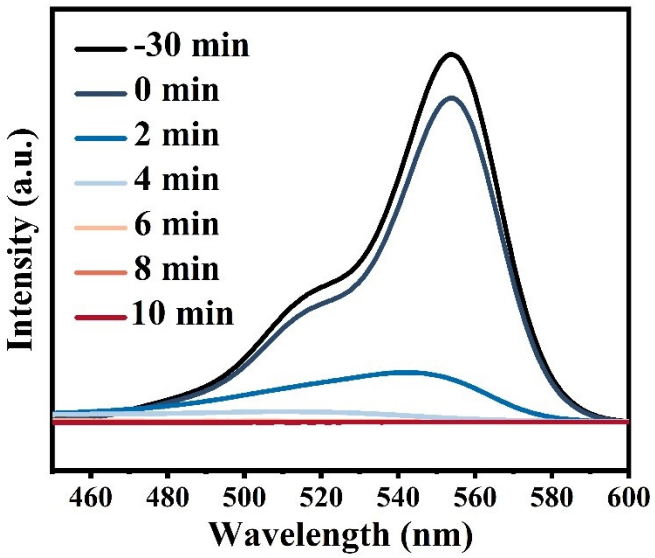

Figure S5. UV-vis spectra of RhB solution under different irradiation time using BOC-W-G.

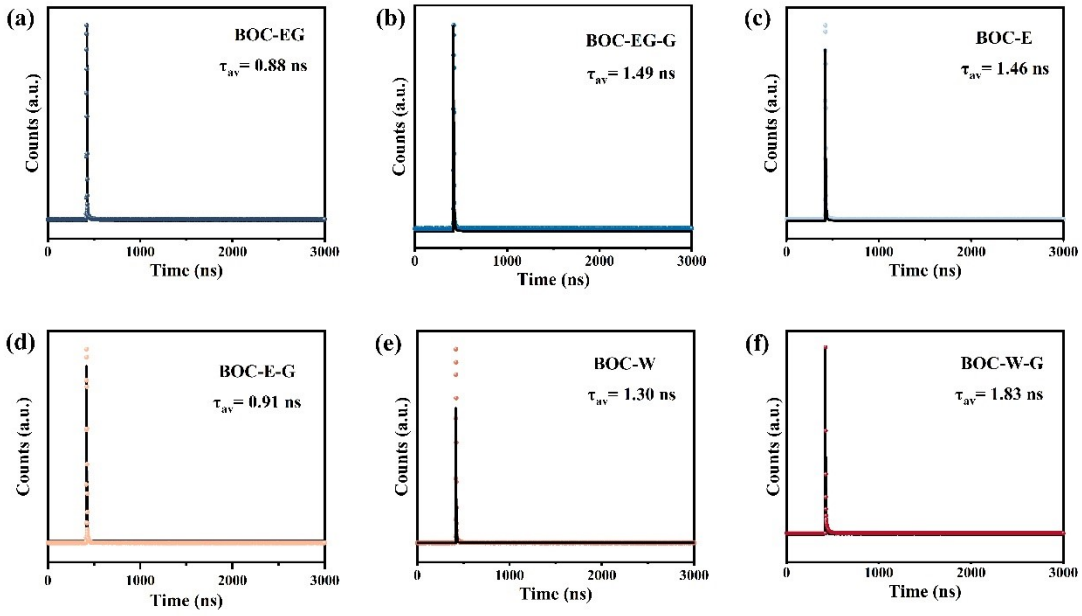

Figure S6. Decay curves of (a) BOC-EG, (b) BOC-EG-G, (c) BOC-E, (d) BOC-E-G, (e) BOC-W and (f) BOC-W-G.

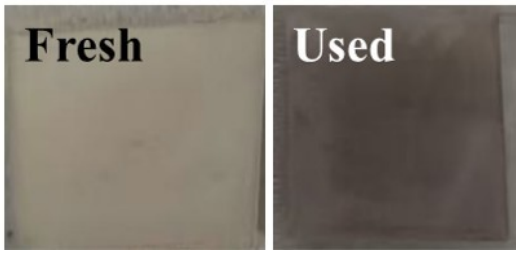

Figure S7. Digital photo of fresh and used BOC-W-G.

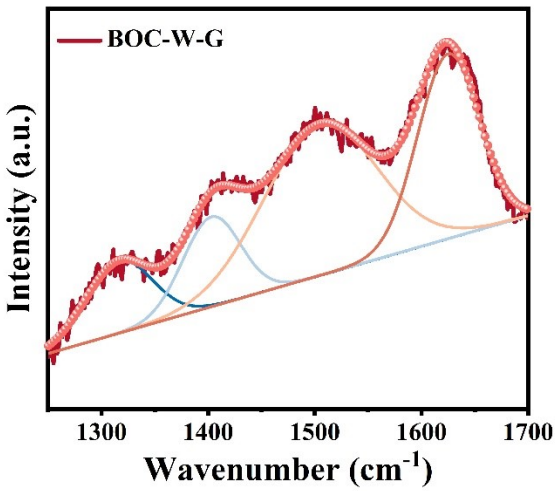

Figure S8. Raman spectra of BOC-W-G.

Table S1. Langmuir and Freundlich adsorption isotherm parameters for RhB adsorption.

Isotherm models	Parameters	BOC-EG	BOC-EG-G	BOC-E	BOC-E-G	BOC-W	BOC-W-G
Langmuir	R^2	0.961	0.633	0.967	0.89	0.985	0.929
	Qmax (mg/g)	26.63	45.04	15.3	17.54	4.05	9.95
	K_L (L/mg)	0.23	0.95	0.07	0.19	0.17	0.07
Freundlich	R^2	0.955	0.91	0.935	0.929	0.921	0.958
	K_F (L/g)	11.74	21.71	3.43	7.76	1.85	2.25
□	n	5.49	6.49	3.24	5.71	6.06	3.25

Table S2. Adsorption kinetics parameters for RhB adsorption.

Kinetics models	Parameters	Values
Pseudo-first-order kinetics	R^2	0.979
	Qe,cal (mg/g)	137.41
	K_1 (min^{-1})	0.004
Pseudo-second-order kinetics	R^2	0.998
	Qe,cal (mg/g)	2.85
□	K_2 (min^{-1})	0.235

Table S3. Comparison of RhB degradation by various photocatalysts

Photocatalysts	**Dosage (g/L)**	**Concentration (mg/L)**	**Efficiency (%)**	**Time (min)**	**Reference**
BOC-W-G	**0.66**	**10**	**100**	**6**	**This work**
BiOCl-CTAB	0.5	10	98.6	20	[1]
CQDs/BiOCl	0.5	10	95.76	60	[2]
Bi/BiOCl-1	2	20	98	120	[3]
$CoFe_2O_4$/BiOCl	1	10	92.9	120	[4]

BiOCl@Kaol-0.4	1	10	100	35	[5]

References

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