Electronic Supplementary Information

Investigation on enhanced photocatalytic degradation of bisphenol A with bismuth oxyiodide catalyst using response surface methodology

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Number of Tables: 2

Number of Figures: 7

Table S1 Experimental range and levels for Box-Behnken design (BBD).

Factors code	Independent variable	Range and levels		
		Low (-1)	Central (0)	High (+1)
A	Catalyst dosage (g/L)	0.1	1.05	2.0
B	Initial concentration of BPA (mg/L)	10	30	50
C	pH value	3	6.5	10

Table S2 Adequacy summary of the models tested for BBD experimental data.

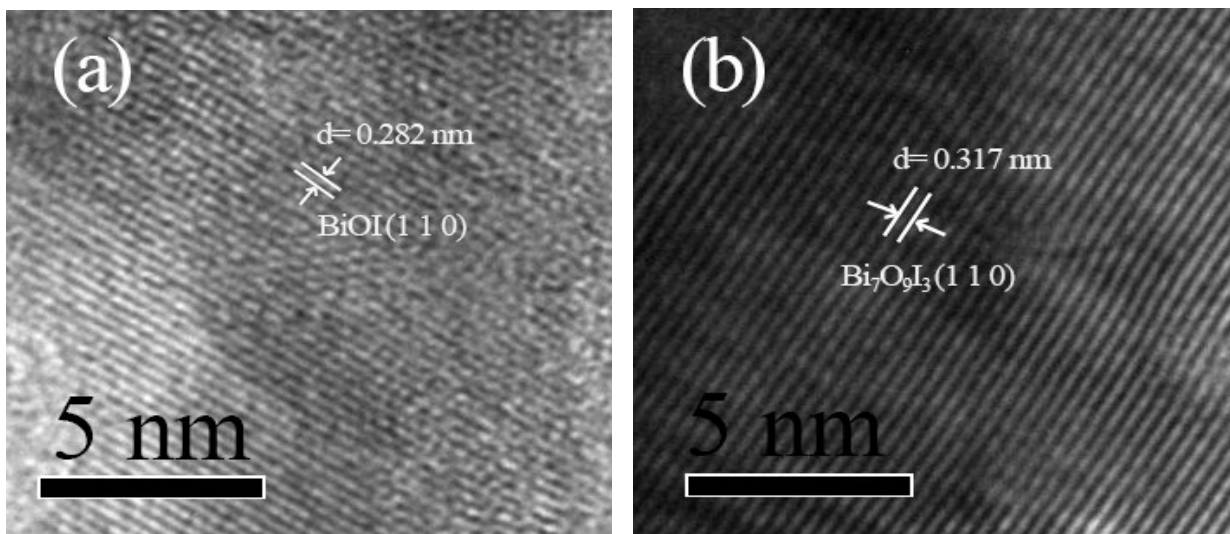| Source	Sequential p-value	Lack of fit p-value	Adjusted R-squared	Predicted R-squared	Remark
Linear	0.0001	0.0368	0.7865	0.6436	
2FI	0.6357	0.0301	0.7600	0.2815	
Quadratic	0.0013	0.2700	0.9794	0.9016	Suggested
Cubic	0.2700		0.9903		Aliased

Fig. S1. TEM images of as-synthesized BiOI (a) and $Bi_7O_9I_3$ (b).

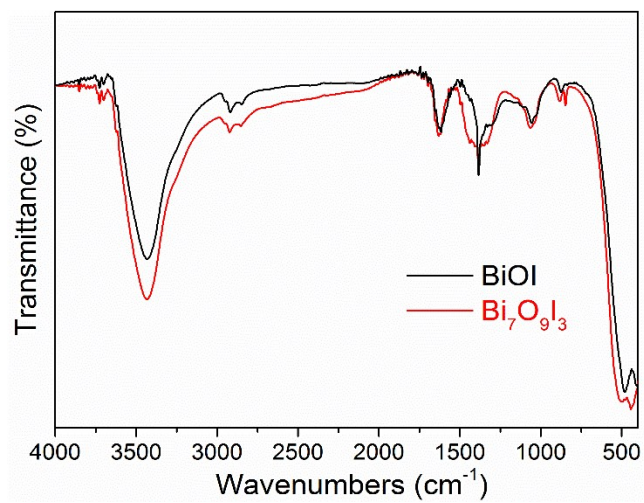**Fig. S2.** FT-IR spectra of as-synthesized samples.

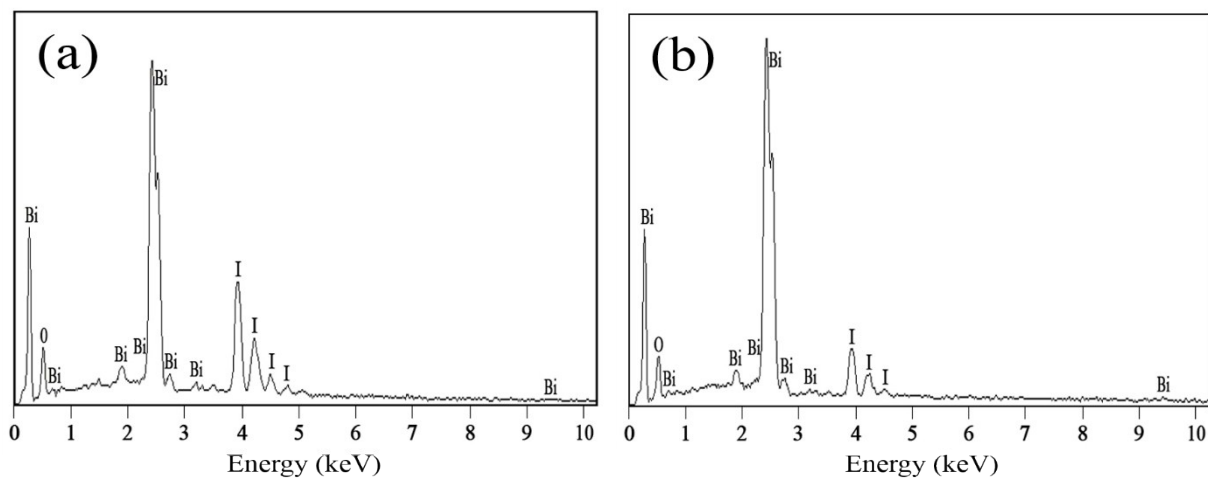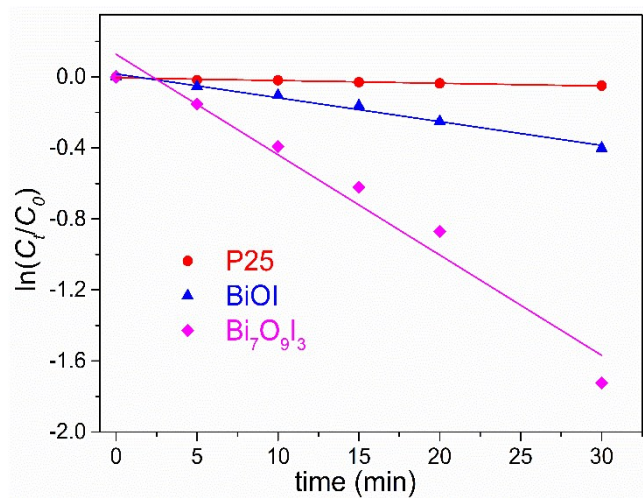**Fig. S3.** EDS spectra of as-synthesized BiOI (a) and $Bi_7O_9I_3$ (b).

Fig. S4. Plots of $\ln(C_t/C_0)$ *vs.* reaction time in the presence of different photocatalysts during photocatalytic degradation of BPA.
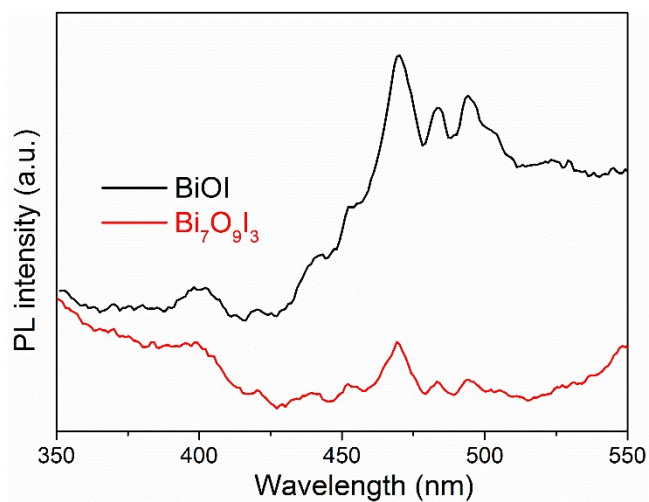
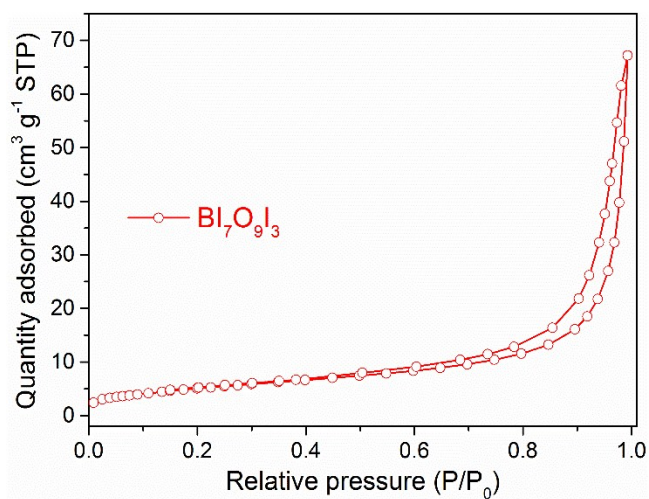**Fig. S5.** PL spectra of as-synthesized samples.

Fig. S6. N_2 adsorption-desorption isotherm distribution curve for $Bi_7O_9I_3$ sample.
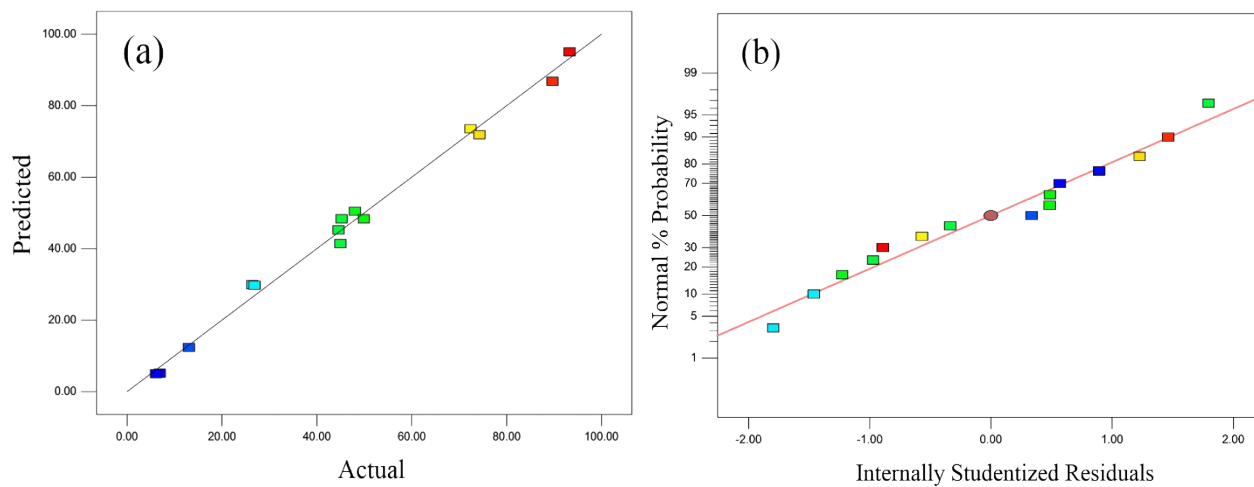
Fig. S7. Diagnostic plots for model adequacy, (a) plot of predicted values versus actual values, (b) plot of normal probability and internally studentized residuals.