Electronic Supplementary Information for

Sunlight-driven degradation of Rhodamine B by peanut-shaped porous $BiVO_4$ nanostructures in the H_2O_2-containing system

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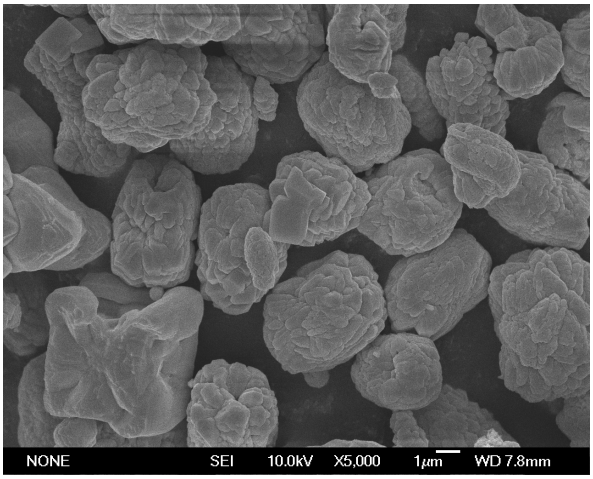

Fig. S1 SEM image of the $BiVO_4$-2 product.

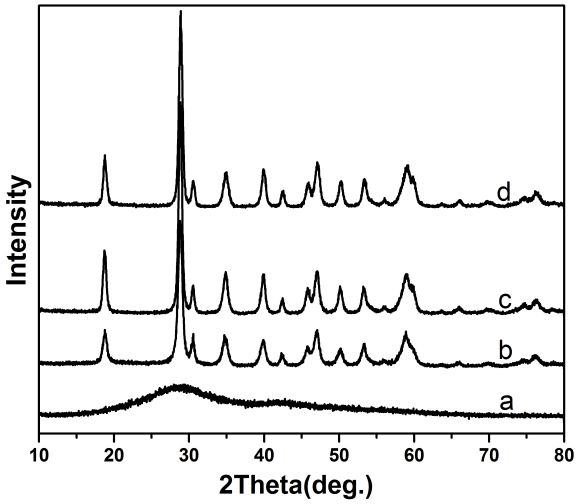

Fig. S2 XRD patterns of the products solvothermally synthesized at the different reaction time; a) 0 h; b) 0.5 h; c) 2 h; d) 4 h.

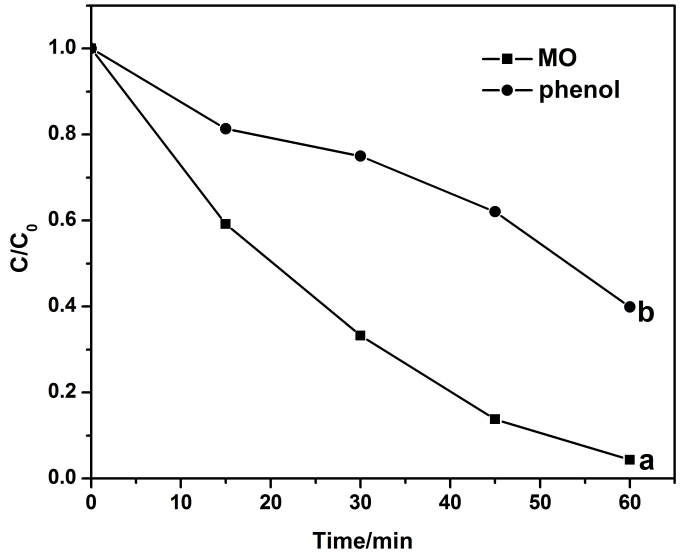

Fig. S3 Photodegradation of MO and phenol in the $BiVO_4$-1/H_2O_2 system.

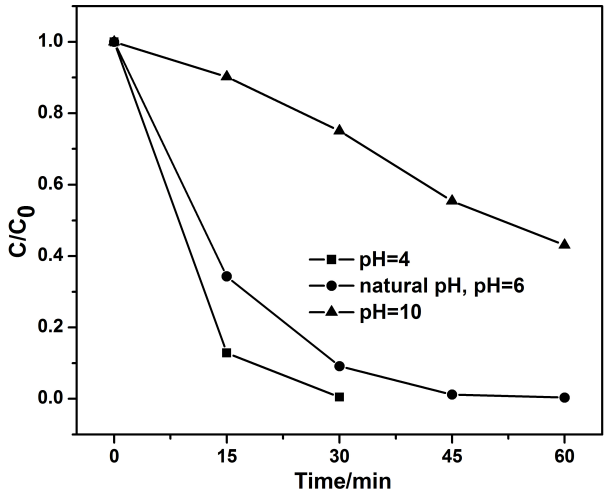

Fig. S4 Photocatalytic degradation of RhB in the $BiVO_4$-1/H_2O_2 system under different solutions.

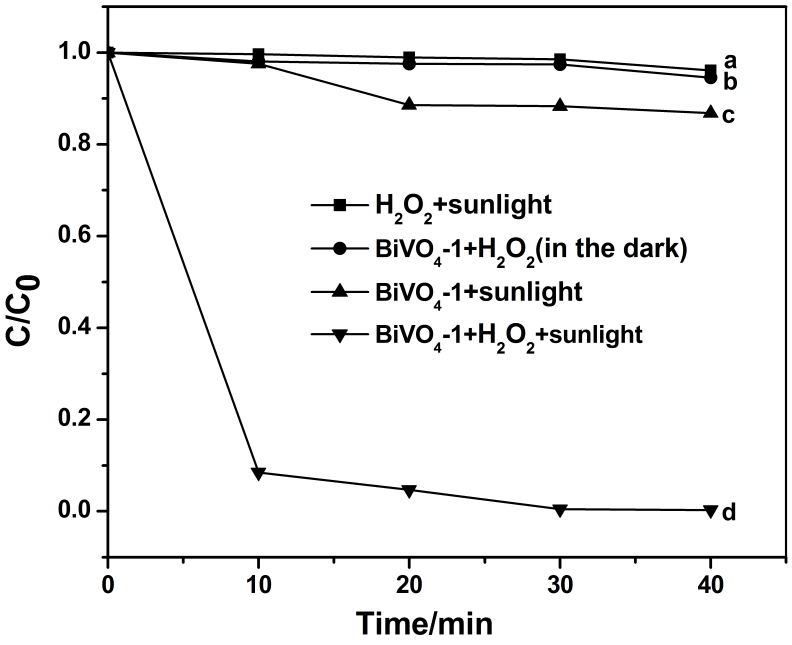

Fig. S5 Photodegradation of RhB under different conditions.(Natural sunlight-induced photocatalytic experiments were carried out in 250-mL beakers. All photocatalytic experiments were conducted under similar conditions on sunny summer days between 1 and 4 p.m. at Nankai University).

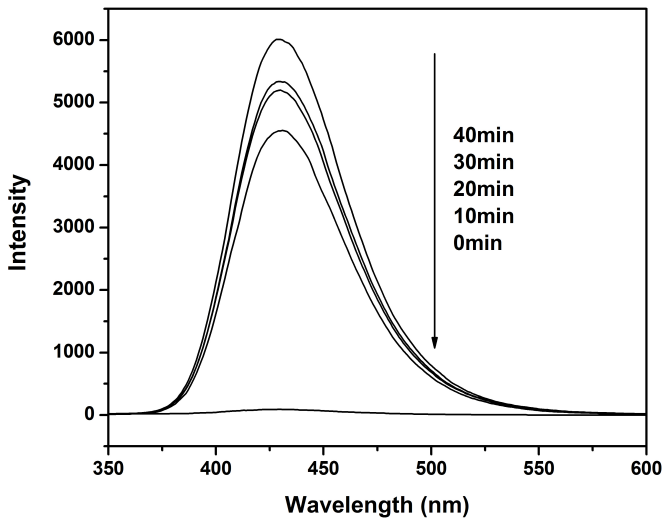

Fig. S6 OH•-trapping PL spectra of $BiVO_4$-1 suspension in the presence of 0.1 mL H_2O_2 and

3 mmol/L terephthalic acid.

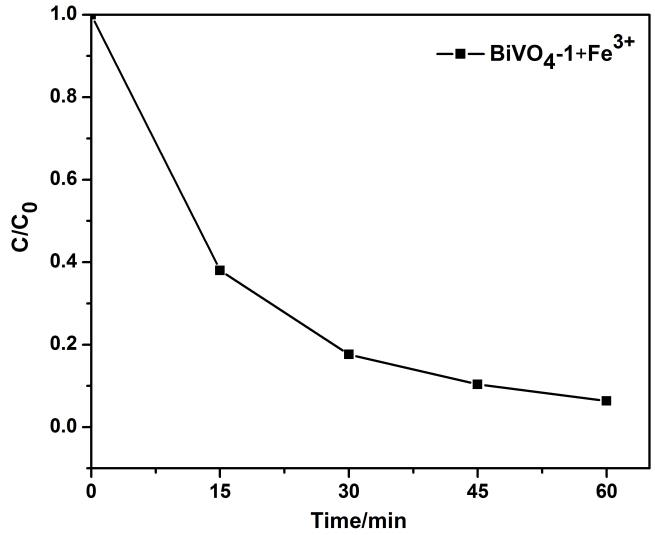

Fig. S7 Photodegradation of RhB in the porous $BiVO_4$-1/Fe^{3+}system.

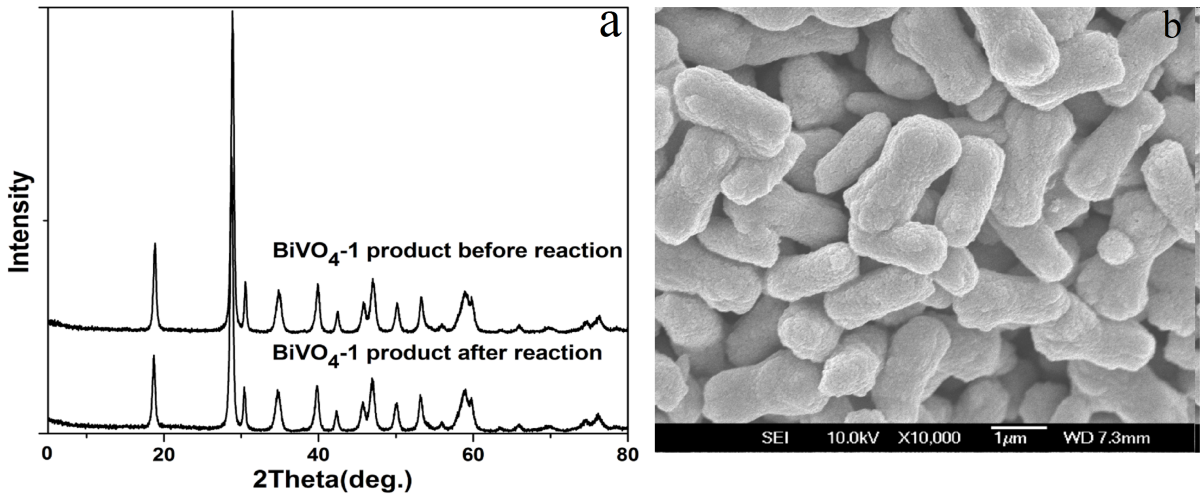

Fig. S8 (a) XRD patterns of $BiVO_4$-1 naonstructures before and after cycling runs; (b) SEM image of $BiVO_4$-1 nanostructures after cycling runs.