

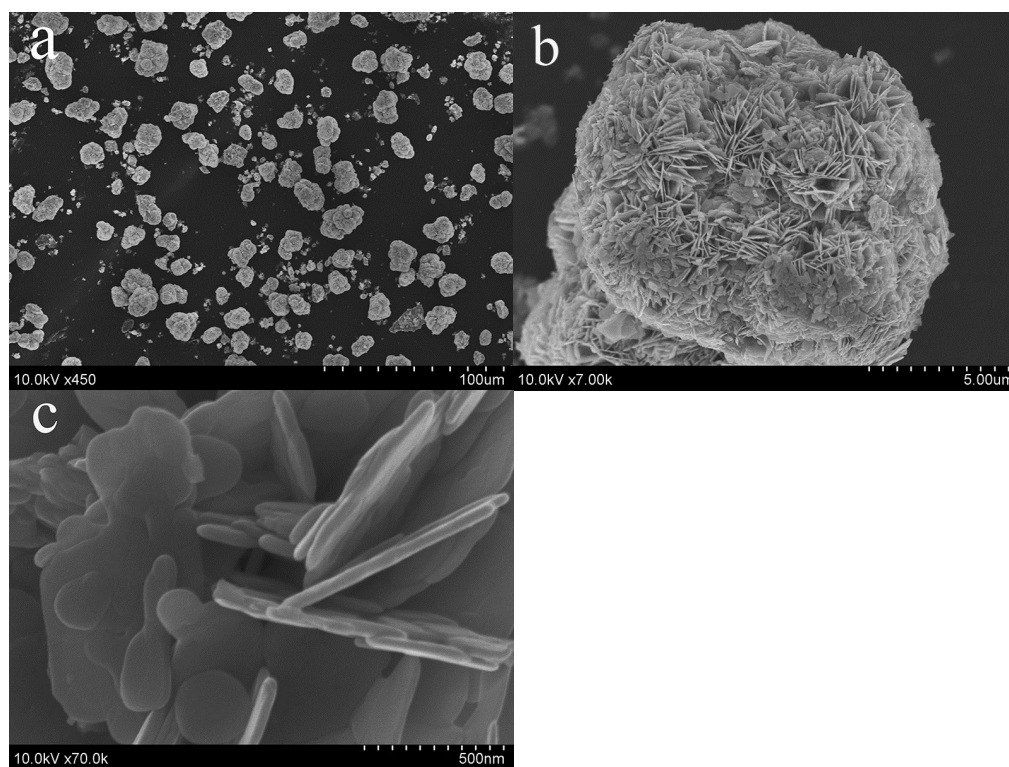
*Supplementary materials*

**Unique band structure enhancing visible light photocatalytic activity of  
phosphorus-doped BiOI hierarchical microspheres**

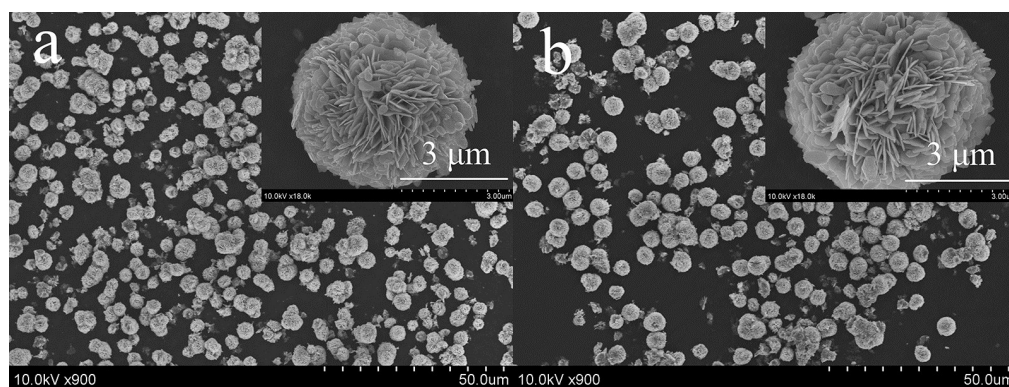
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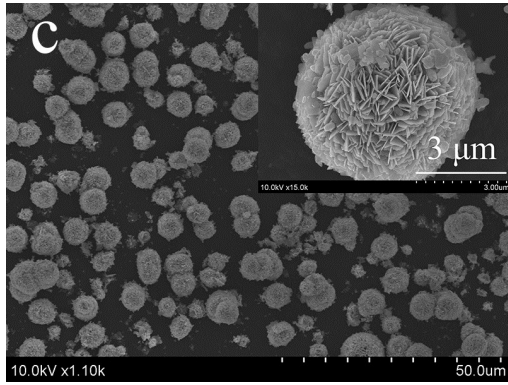
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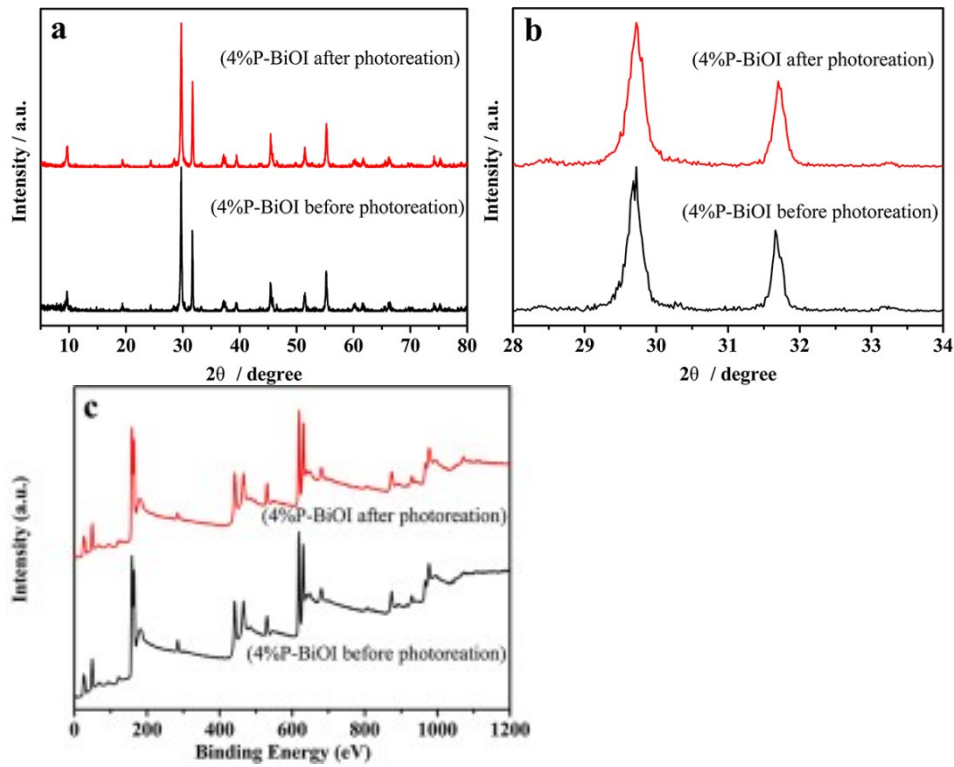


**Fig. S1** SEM images of pure BiOI.





**Fig. S2** SEM images of 2%P-BiOI, 6%P-BiOI and 8%P-BiOI.



**Fig. S3** (a and b) XRD of 4%P-BiOI before and after photoreaction; (c) XPS of 4%P-BiOI before and after photoreaction.