

## **Electronic Supplementary Information**

### **Hierarchical heterostructures of Bi<sub>2</sub>MoO<sub>6</sub> on carbon nanofibers: Controllable solvothermal-fabrication and enhanced visible photocatalytic properties**

Mingyi Zhang, Changlu Shao\*, Jingbo Mu, Xuman Huang, Zhenyi Zhang, Zengcai

Guo, Peng Zhang and Yichun Liu

Center for Advanced Optoelectronic Functional Materials Research, and Key Laboratory of UV Light-Emitting Materials and Technology of Ministry of Education, Northeast Normal University, 5268 Renmin Street, Changchun 130024, People's Republic of China.

\*Corresponding author: Changlu Shao

Center for Advanced Optoelectronic Functional Materials Research, and Key Laboratory of UV Light-Emitting Materials and Technology of Ministry of Education, Northeast Normal University, 5268 Renmin Street, Changchun 130024, People's Republic of China.

E-mail: [clshao@nenu.edu.cn](mailto:clshao@nenu.edu.cn); Tel. 8643185098803.

Samples	[Precursors] ( mM ) <sup>a</sup>		Morphology <sup>b</sup>	Temperature (°C) <sup>c</sup>	Solvent	Bi/C Molar ratio <sup>d</sup>
	Bi(NO <sub>3</sub> ) <sub>3</sub>	Na <sub>2</sub> MoO <sub>4</sub>				
B0	12	6		160	EG + Ethanol	
BC1	12	6	nanosheets	160	EG + Ethanol	1 : 11.2
BC2	8	4	nanoflowers	160	EG + Ethanol	1 : 17.5
BC3	4	2	nanoparticles	160	EG + Ethanol	1 : 33.7
BC4	2	1	nanorods	160	EG + Ethanol	1 : 54.6
BC5	12	6		100	EG + Ethanol	
BC6	12	6	nanosheets	130	EG + Ethanol	1 : 13.8
BC7	12	6	nanosheets	180	EG + Ethanol	1 : 12.2
BC8	12	6	nanoparticles	200	EG + Ethanol	1 : 27.5
BC9	12	6	nanosheets	160	Ethanol	1 : 47.3
BC10	12	6	nanosheets	160	EG	1 : 10.5

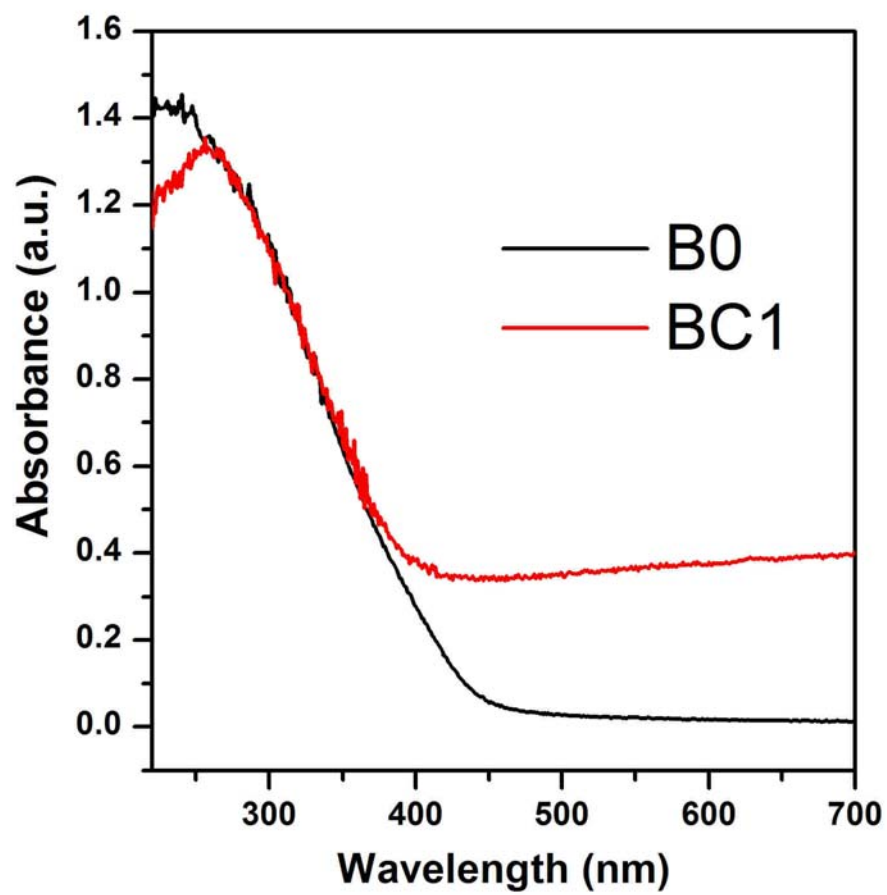
<sup>a</sup> In addition to Bi(NO<sub>3</sub>)<sub>3</sub> and Na<sub>2</sub>MoO<sub>4</sub>, 15 mg carbon nanofibers also add to the sample BC1-BC10 as precursor.

<sup>b</sup> The morphology is secondary Bi<sub>2</sub>MoO<sub>6</sub> nanostructures on the Bi<sub>2</sub>MoO<sub>6</sub>-CNFs hierarchical nanostructures.

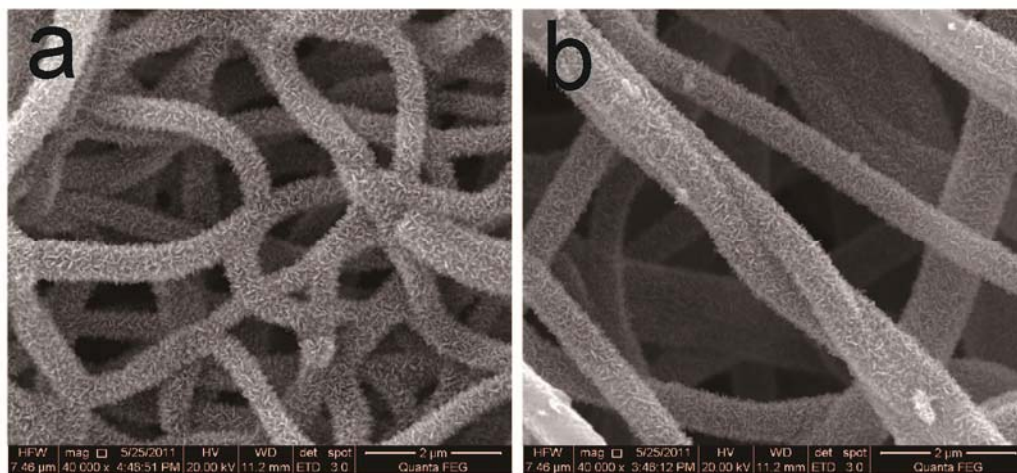
<sup>c</sup> EG (10mL) + Ethanol (30mL) for the sample B0-BC8. Ethanol (40mL) for the sample BC9. EG (40mL) for the sample BC10.

<sup>d</sup> The value is determined by EDX.

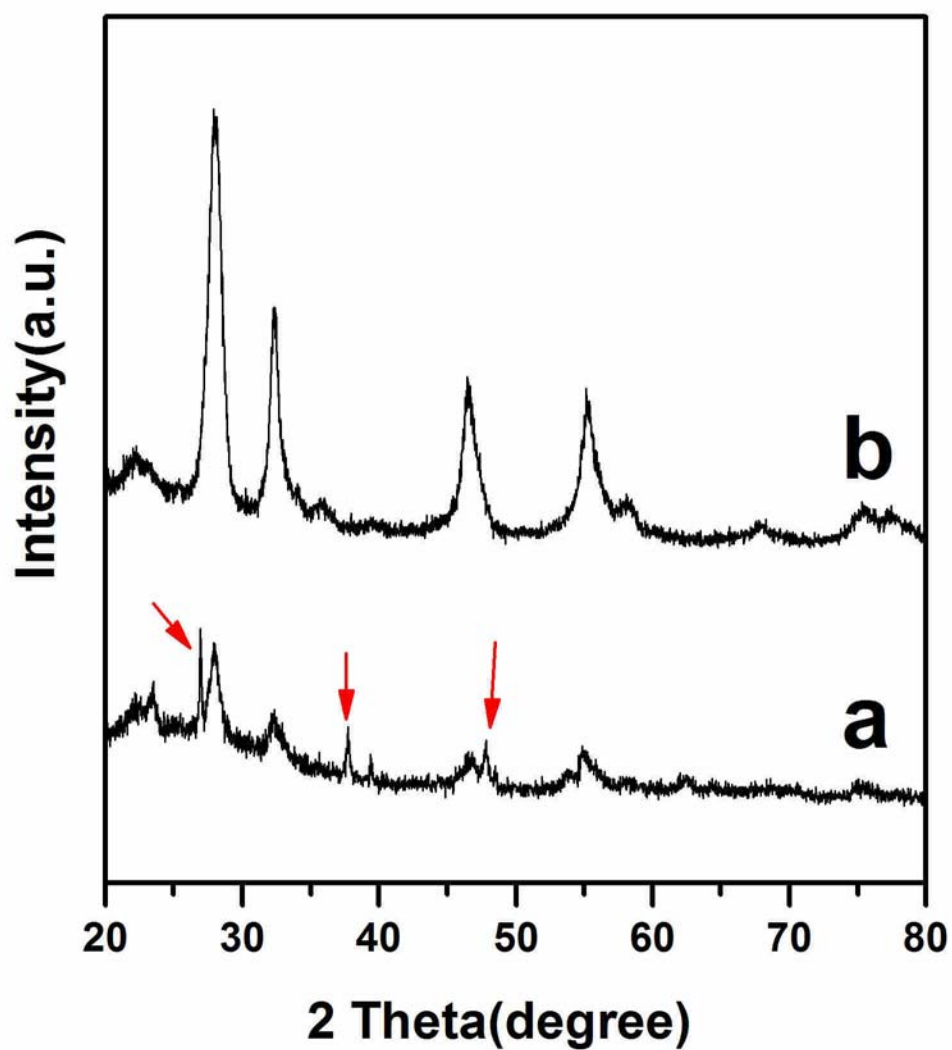
**Table S1.** Experimental conditions, Bi<sub>2</sub>MoO<sub>6</sub> nanostructure characteristics, and chemical component of the prepared samples.



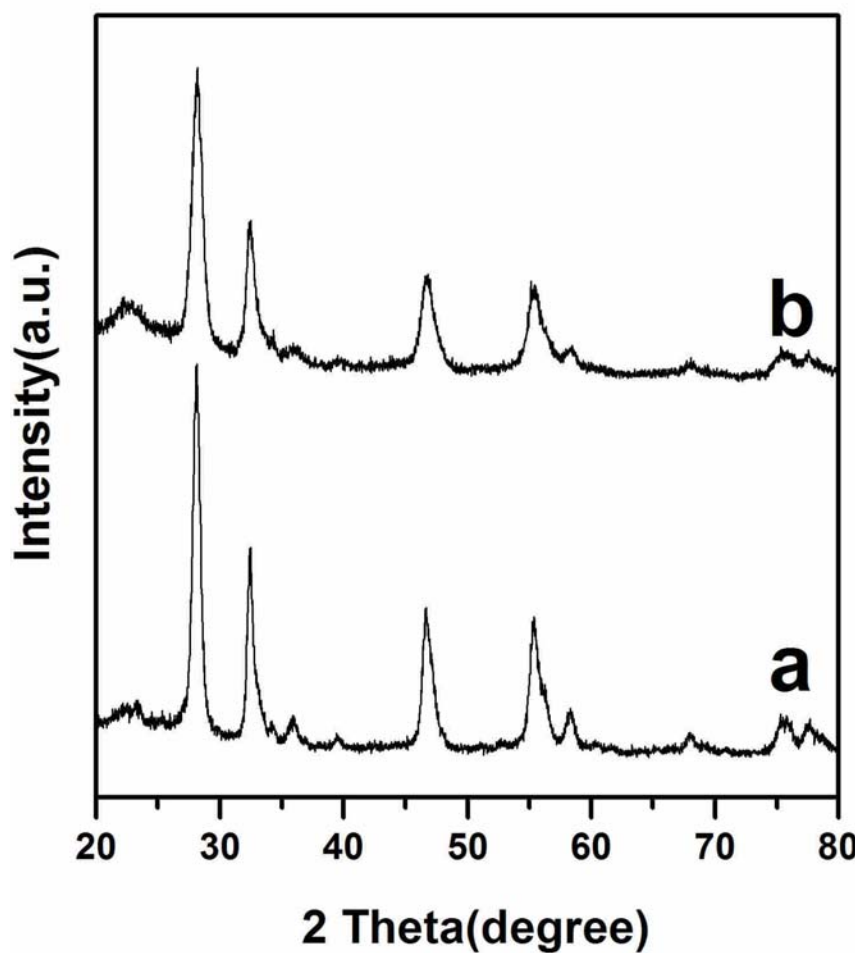
**Fig. S1.** Diffuse reflectance spectra of the  $\text{Bi}_2\text{MoO}_6$ -CNFs samples (BC1) and pure  $\text{Bi}_2\text{MoO}_6$ .



**Fig. S2.** SEM images of Bi<sub>2</sub>MoO<sub>6</sub>-CNFs photocatalyst (a) before and (b) after the photocatalytic reaction.



**Fig. S3.** XRD patterns of products prepared from different solvents under solvothermal reaction: (a) 40 mL ethanol; (b) 40 mL ethylene glycol.



**Fig. S4.** XRD patterns of Bi<sub>2</sub>MoO<sub>6</sub>-CNFs photocatalyst (a) before and (b) after the photocatalytic reaction.