Electronic Supplementary Material (ESI) for Catalysis Science & Technology

Supporting Information Available

Enhancement of Visible Light Photocatalysis Performances of $Bi_2MoS_2O_4$ Nanoplates

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Fig. S1. XRD pattern of $Bi_2MoS_2O_4$ crystallines

Fig. S2. Changes in TOC under visible light irradiation (λ>420 nm) by $Bi_2MoS_2O_4$

Fig. S3. Evaluation of durability of $Bi_2MoS_2O_4$ photooxidation from the repeatable bleaching of MB under visible-light irradiation (λ>420nm)

Fig. S4. XRD patterns of $Bi_2MoS_2O_4$ before and after MB bleaching: (a) before reaction and (b) after fifth run for the repeatable bleaching of MB

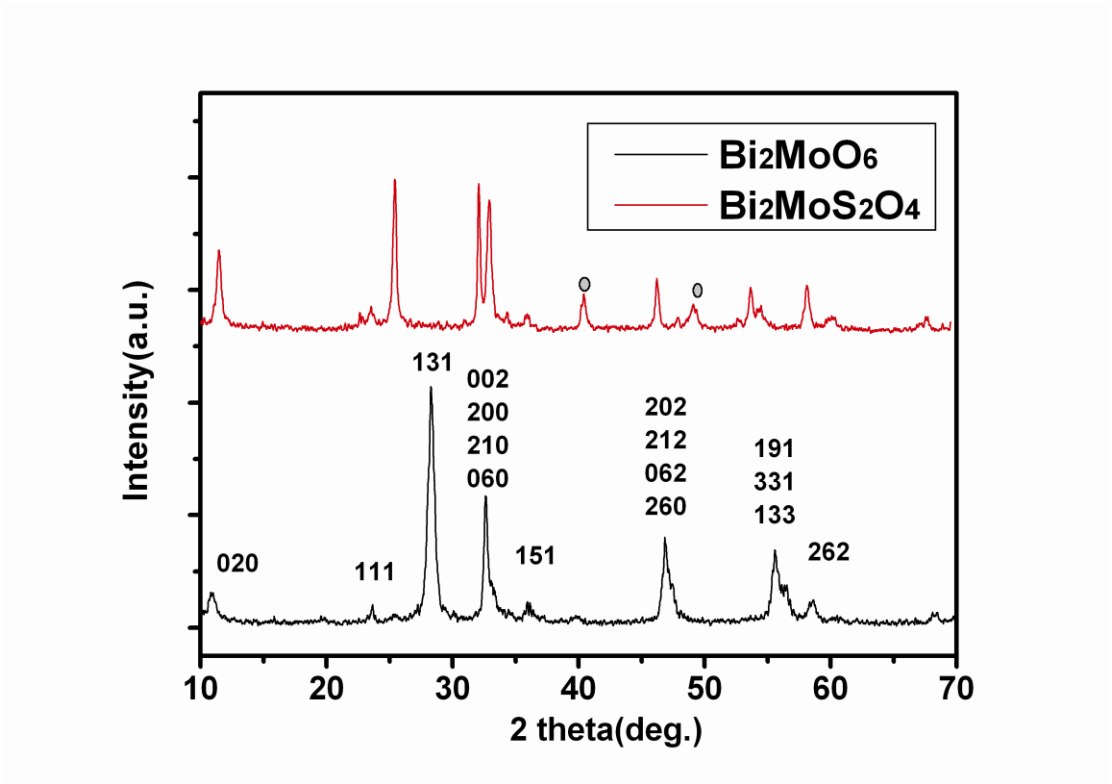

Fig. S1. XRD pattern of $Bi_2MoS_2O_4$ crystallines

Supporting Information Fig. S1 showed the XRD patterns of Bi_2MoO_6 and $Bi_2MoS_2O_4$. Comparing with Bi_2MoO_6, it can be seen that most of diffraction peaks of $Bi_2MoS_2O_4$ were shifted to a lower-angle side. The shift was reasonable because the ion radii of S^{2-} was larger than that of O^{2-}. The black sign means two new faces develop in the crystal structure of $Bi_2MoS_2O_4$. It is believed that different surrounding growth conditions between Bi_2MoO_6 and $Bi_2MoS_2O_4$ resulted in different growth rates of the faces. Hence, there were two new faces in XRD patterns of $Bi_2MoS_2O_4$

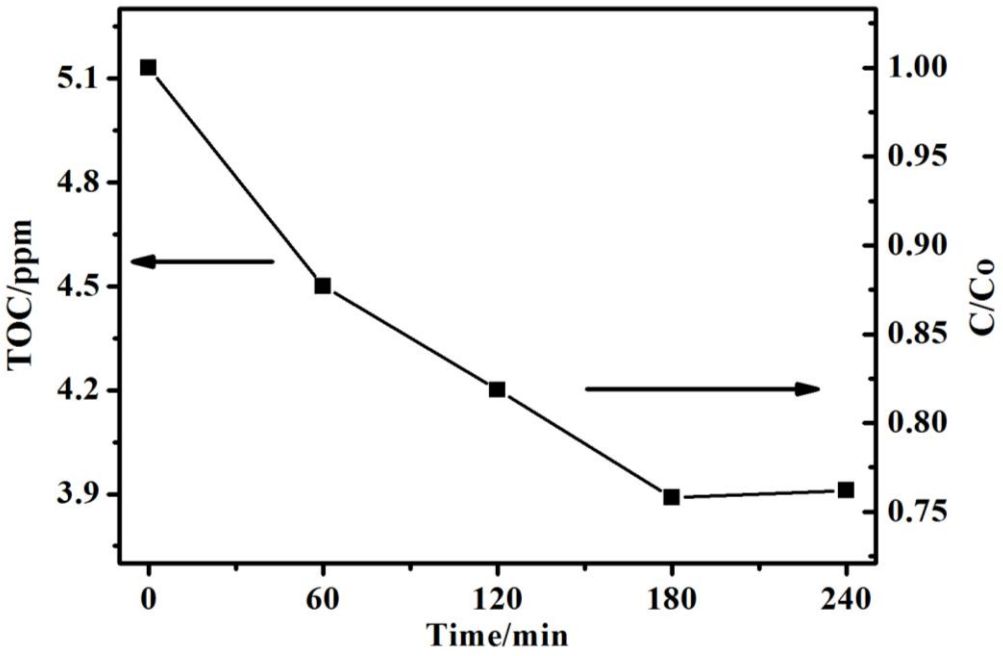

Fig. S2. Changes in TOC under visible light irradiation (λ>420 nm) by $Bi_2MoS_2O_4$.

The decrease of TOC in the photodegradation of MB by was shown in Fig. S2. The rate of TOC reduction was slower than that of the degradation of the MB, which suggests that the cleavage of the conjugated chromophore ring of MB resulting in the intermediates occurs during the photocatalytic process. The result confirmed that the MB degradation was inherently the result of a photocatalytic reaction, not only bleaching process.

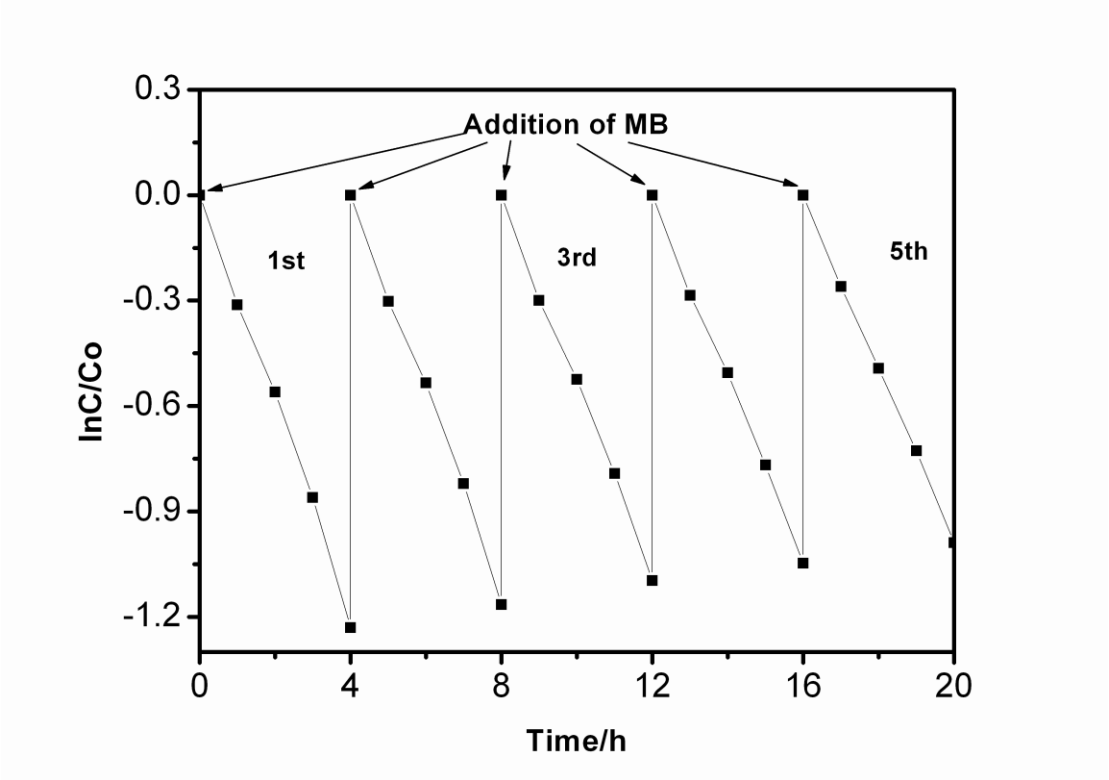

Fig. S3 Evaluation of durability of $Bi_2MoS_2O_4$ photooxidation from the repeatable bleaching of MB under visible-light irradiation (λ>420nm)

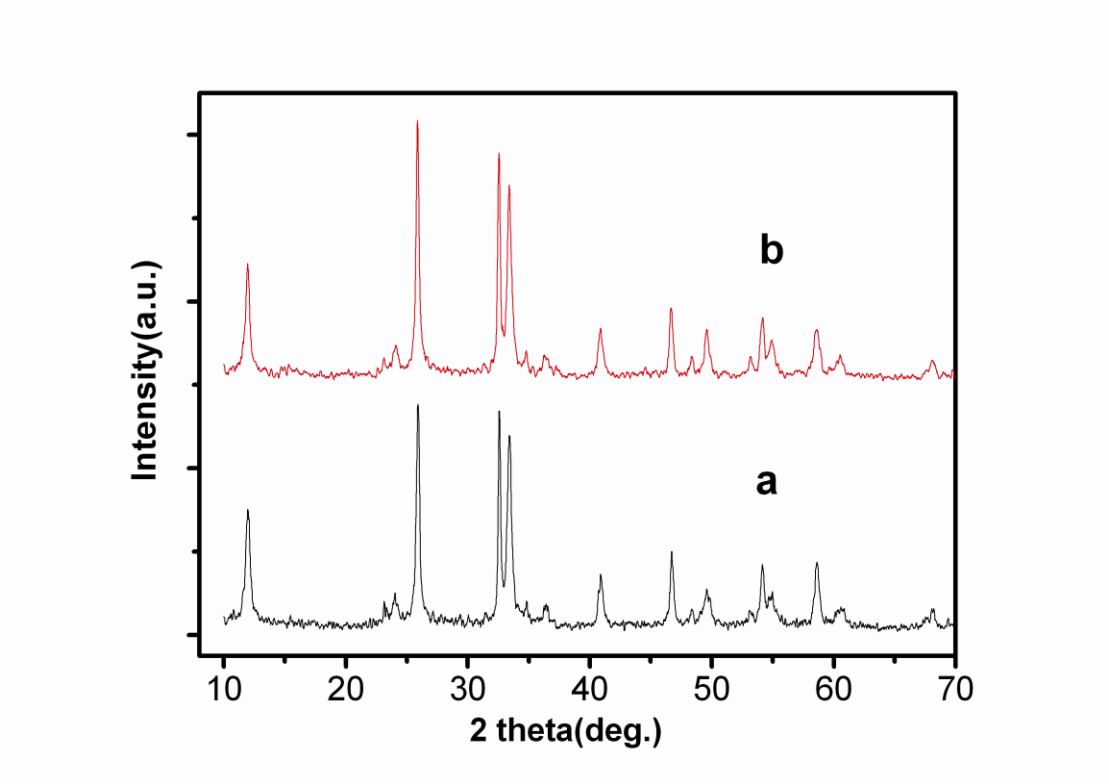

Fig. S4. XRD patterns of $Bi_2MoS_2O_4$ before and after MB bleaching: (a) before reaction and (b) after fifth run for the repeatable bleaching of MB