Supplementary material:

Towards understanding of the photocatalytic activity enhancement of ordered mesoporous Bi2MoO6 crystals prepared via a novel vacuum-assisted nanocasting method

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Fig. S1 The N$_2$-sorption isotherm and the pore size distributions (inset) of SBA-15.
Fig. S2 (a) $C/C_0$ and (b) $\ln(C/C_0)$ of RhB versus time for different photocatalysts under simulated sunlight irradiation.
Fig. S3 The LHE spectrum of as-prepared M-Bi$_2$MoO$_6$ and C-Bi$_2$MoO$_6$. 
Chemical oxygen demand (COD) is the oxygen equivalent to form H₂O and CO₂ during the mineralization of organic pollutants. It has been considered as one of important water pollution parameters. The COD was determined by using potassium dichromate oxidation method. The COD removal rate was estimated by: \( \eta(\%) = \frac{C_0 - C_t}{C_0} \times 100\% \), where \( \eta \) is the COD removal rate, \( C_0 \) (mg/L) is the concentration of COD before the photocatalytic reaction, and \( C_t \) (mg/L) is the concentration of COD after the photocatalytic reaction\(^1\)\(^2\). Fig. S3 clearly reveals that the COD removal rate of M-Bi₂MoO₆ is much higher than that of C-Bi₂MoO₆, which indicates that the organic substance mineralization rate of M-Bi₂MoO₆ during the photooxidation process is much higher than that of C-Bi₂MoO₆.
To evaluate the influence of different dosage of photocatalyst on photocatalytic efficiency, a series photodegradation experiments has been conducted to find out the optimal value by varying the dosage of M-Bi$_2$MoO$_6$ photocatalyst. As shown in Fig. S3, the photodegradation rate of BPA first obviously enhanced with increasing the G-BM amount, which is mainly owing to the increase of the photoreaction activity area. However, if the amount of the catalyst is too high (more than 12 mg), the photodegradation rate would inversely decrease, which mainly due to the aggregation between the photocatalysts.

Fig. S5 Influence of the photocatalyst dosage on photodegradation rate of BPA solution.
Fig. S6 Photocatalytic cycling runs of the M-Bi$_2$MoO$_6$ (a), XRD patterns of M-Bi$_2$MoO$_6$ before and after photo-degradation of RhB (b).
Fig. S7 $\text{N}_2$-sorption isotherm of $\text{M-Bi}_2\text{MoO}_6$ after photo-degradation of RhB.
Fig. S8 Trapping experiments of active species during the photocatalytic degradation of RhB by M-Bi$_2$MoO$_6$ under the simulated sunlight irradiation.
References
