Supporting Information

Enhanced Photocatalytic Performance of BiOBr/NH_2-MIL-125(Ti) Composite for Dye Degradation under Visible Light

Shuai-Ru Zhu[a], Peng-Fei Liu[a], Meng-Ke Wu[a], Wen-Na Zhao[b], Guo-Chang Li[a], Kai Tao[a], Fei-Yan Yi[a] and Lei Han*[,a,c]

[a] State Key Laboratory Base of Novel Functional Materials and Preparation Science, School of Materials Science & Chemical Engineering, Ningbo University, Ningbo, Zhejiang 315211, China

[b] Key Laboratory for Molecular Design and Nutrition Engineering of Ningbo, Ningbo Institute of Technology, Zhejiang University, Ningbo, Zhejiang 315100, China

[c] Key Laboratory of Photoelectric Materials and Devices of Zhejiang Province, Ningbo University, Ningbo, Zhejiang 315211, China

* E-mail: hanlei@nbu.edu.cn

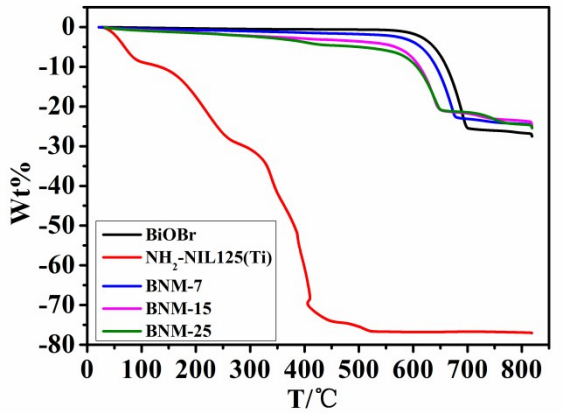

Fig. S1. Thermal analysis of BiOBr, NH_2-MIL-125(Ti) and BNM composite under air atmosphere.

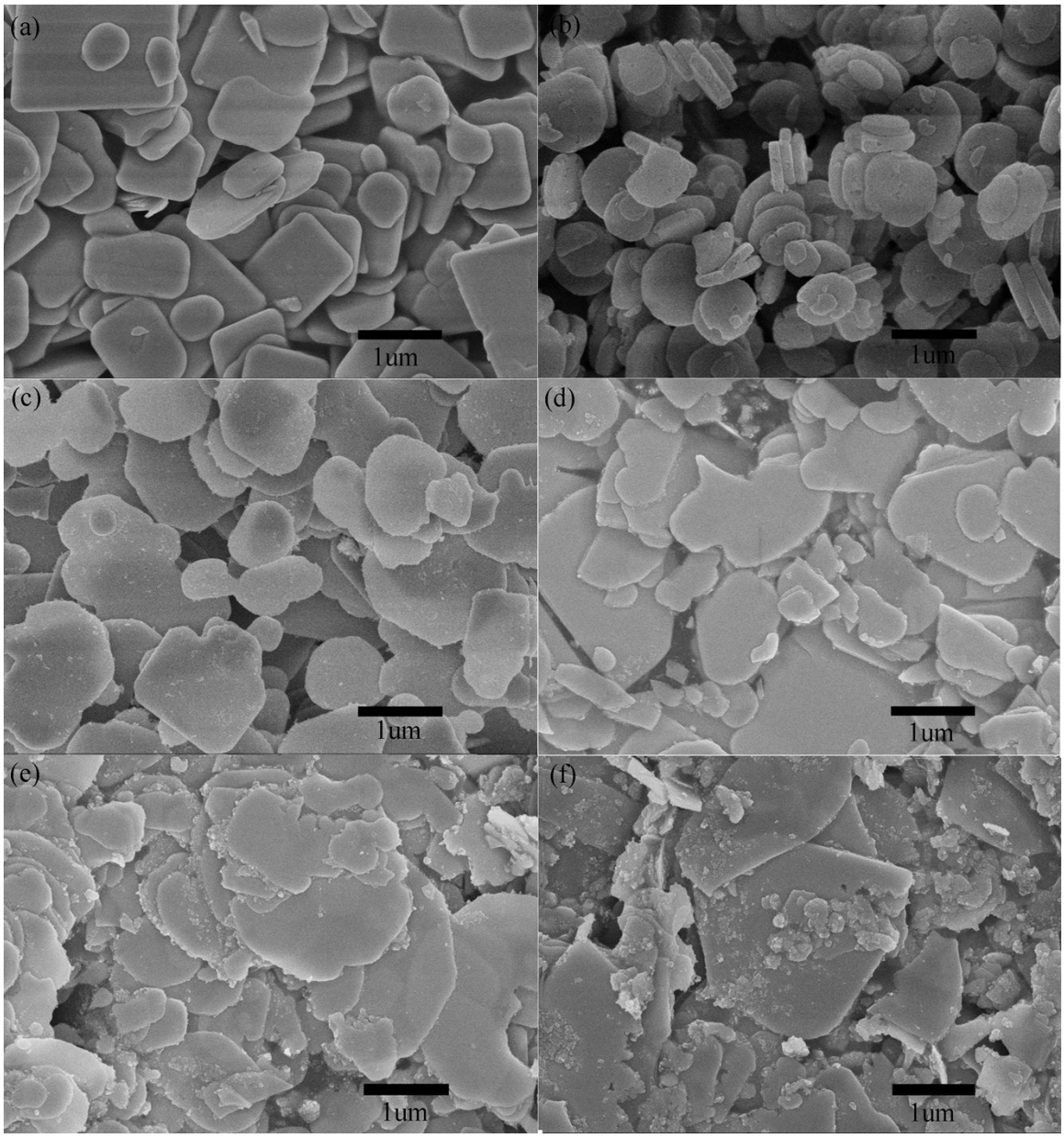

Fig. S2. SEM images of (a) pristine BiOBr flake,(b) NH_2-MIL125(Ti), (c) BNM-3, (d) BNM-7, (e) BNM-15, (f) BNM-25.

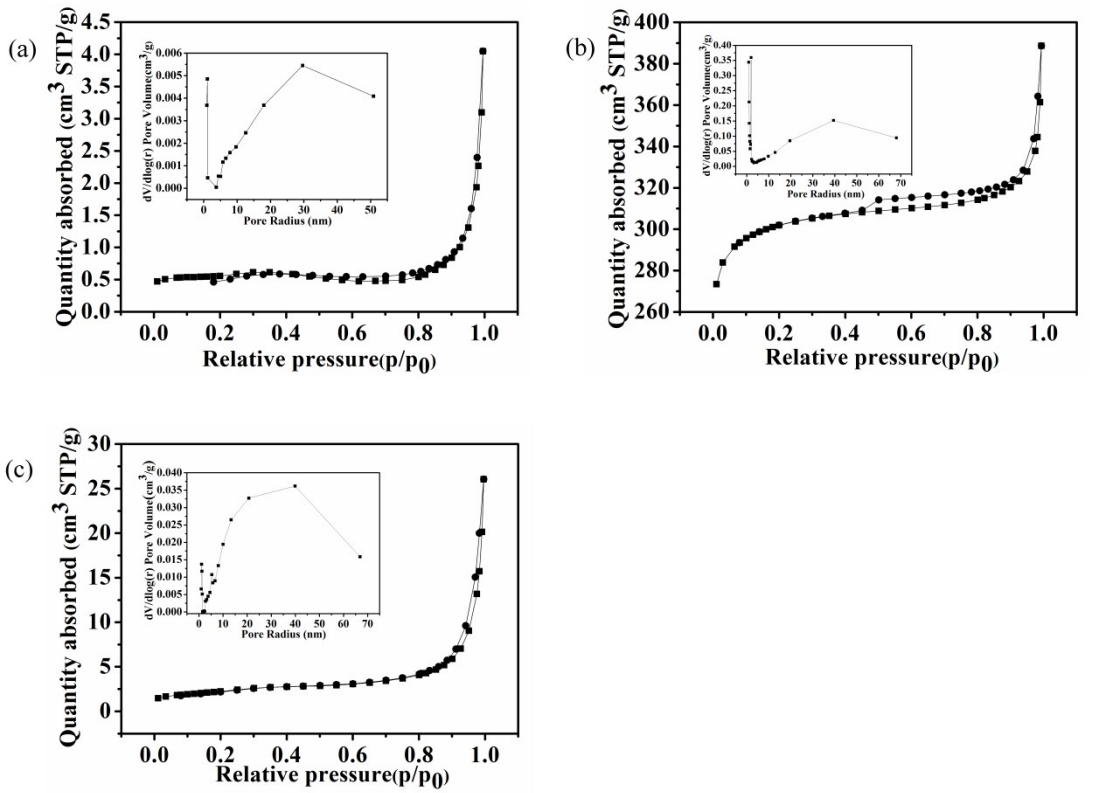

Fig. S3. Nitrogen absorption-desorption isotherm plot and pore size distributions (inset) of (a) BiOBr, (b) NH_2-MIL125(Ti) and (c) BNM-7

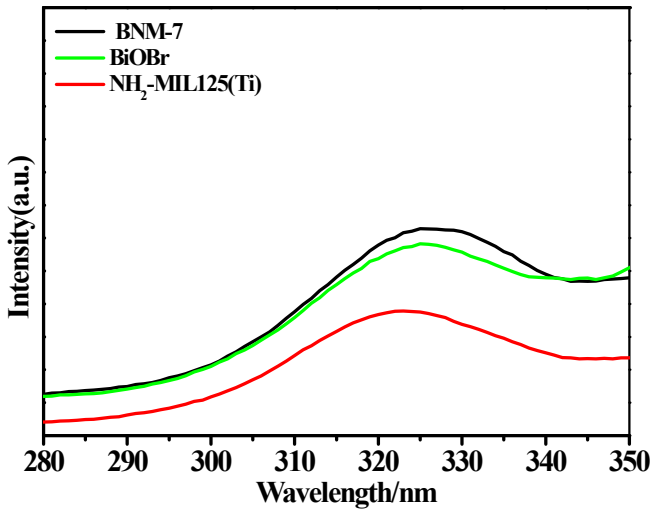

Fig. S4. Excitation spectra of BNM-7, BiOBr, NH_2-MIL125(Ti).

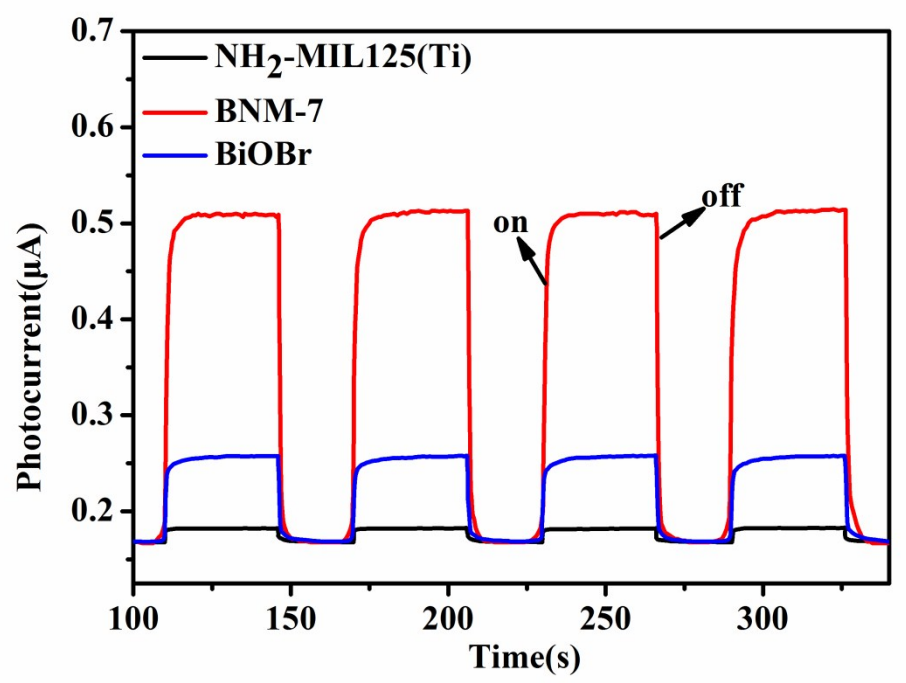

Fig.S5. Photocurrent responses of BNM-7, BiOBr, NH_2-MIL125(Ti).

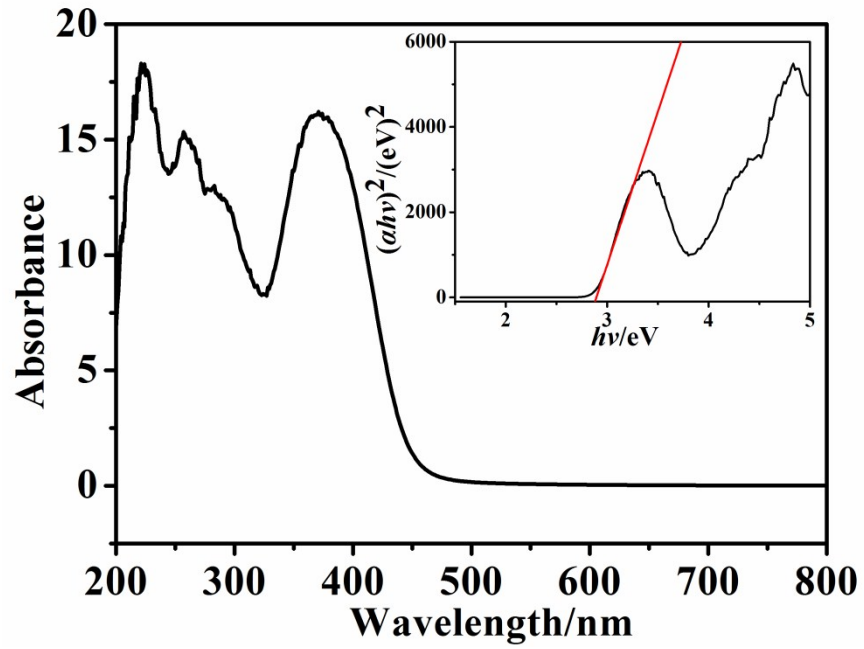

Fig.S6. UV-vis diffuse reflectance spectra and plot of $(\alpha hv)^2$ versus energy (hv) to obtain the band gap energy of the NH_2-MIL125(Ti).

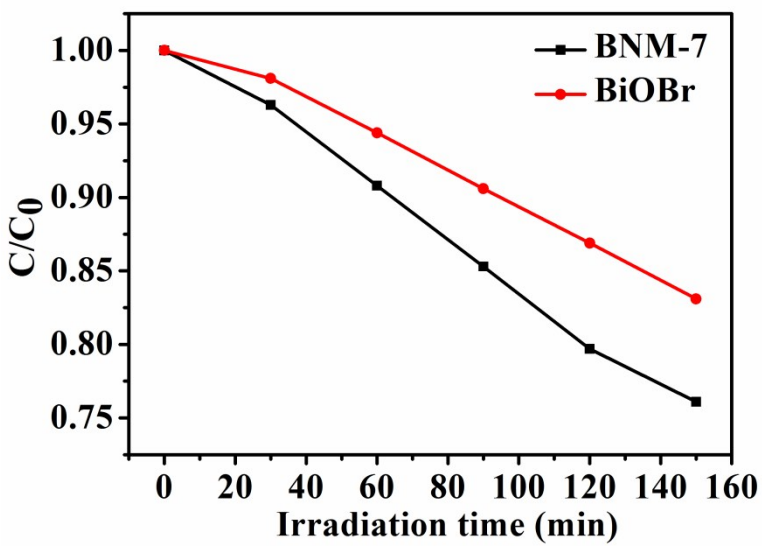

Fig.S7. Photocatalytic degradation of phenol in the presence of BiOBr, BNM-7 under visible light irradiation.

Table S1 The pesudo-first-order rate constant for RhB photocatalytic oxidation under BNM-X system.

Series	Photocatalyst	The first order kinetic equation	k (min^{-1})
1	BiOBr	$-\ln(C/C_0) = 0.0132t$	0.0132
2	BNM-3	$-\ln(C/C_0) = 0.0258t$	0.0258
3	BNM-7	$-\ln(C/C_0) = 0.0410t$	0.0410
4	BNM-10	$-\ln(C/C_0) = 0.0299t$	0.0299
5	BNM-15	$-\ln(C/C_0) = 0.0276t$	0.0276
6	BNM-20	$-\ln(C/C_0) = 0.0227t$	0.0227
7	BNM-25	$-\ln(C/C_0) = 0.0165t$	0.0165
8	NH_2-MIL-125(Ti)	$-\ln(C/C_0) = 0.0073t$	0.0073