Supplementary Information

$Bi_4Ti_3O_{12}$ nanosheets/TiO_2 submicron fibers heterostructures: in situ fabrication and high visible light photocatalytic activity

Tieping Cao[a,b], Yuejun Li[a,b], Changhua Wang[a], ZhenYi Zhang[a], Mingyi Zhang[a], Changlu Shao[a,*] and Yichun Liu[a]

[a] *Centre for Advanced Optoelectronic Functional Materials Research, Key Laboratory for UV Light-Emitting Materials and Technology of Ministry of Education, Northeast Normal University, Changchun 130024, People's Republic of China*
[b] *Department of Chemistry, Baicheng Teacher's College, Baicheng, Jilin 137000, China*

Detail derivation process for the relation between the molar ratio of $Bi_4Ti_3O_{12}$ to TiO_2 and the atomic ratio of Bi to Ti: If the molar number of $Bi_4Ti_3O_{12}$ and TiO_2 is a and b, respectively, then the molar ratio of $Bi_4Ti_3O_{12}$ to TiO_2 (denoted as R) and the atomic ratio of Bi to Ti (denoted as r) can be calculated as following:

$$\begin{cases} \dfrac{a}{b} = R & (1) \\ \dfrac{4a}{3a+b} = r & (2) \end{cases}$$

Thus, $$r = \frac{4}{3+\frac{1}{R}} \Rightarrow R = \frac{r}{4-3r}$$

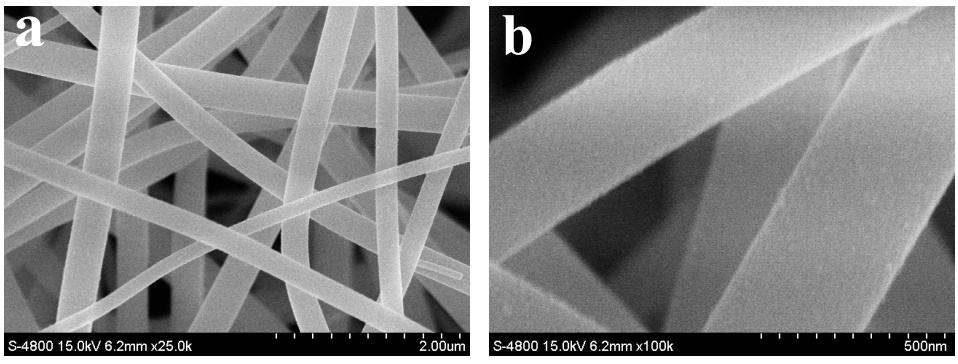

Fig. S1: SEM image of pure TiO_2 nanofibers: (a) low magnification, (b) high magnification.

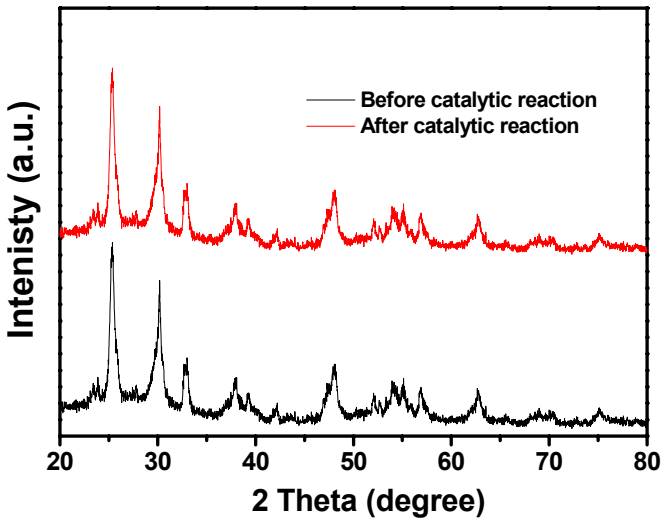

Fig. S2: XRD pattern comparison of sample BT1 before and after photocatalytic reaction.

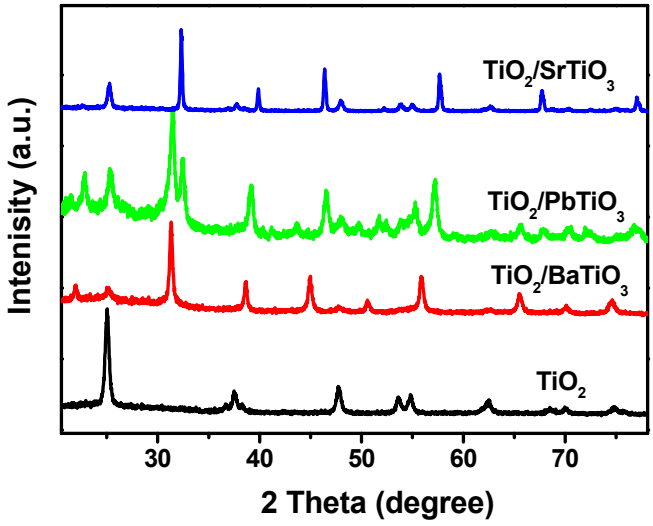

Fig. S3: XRD patterns of different as-synthesized samples.