Supplementary Information

Synthesis of porous $Bi_4Ti_3O_{12}$ nanofibers by electrospinning and their enhanced visible-light-driven photocatalytic properties

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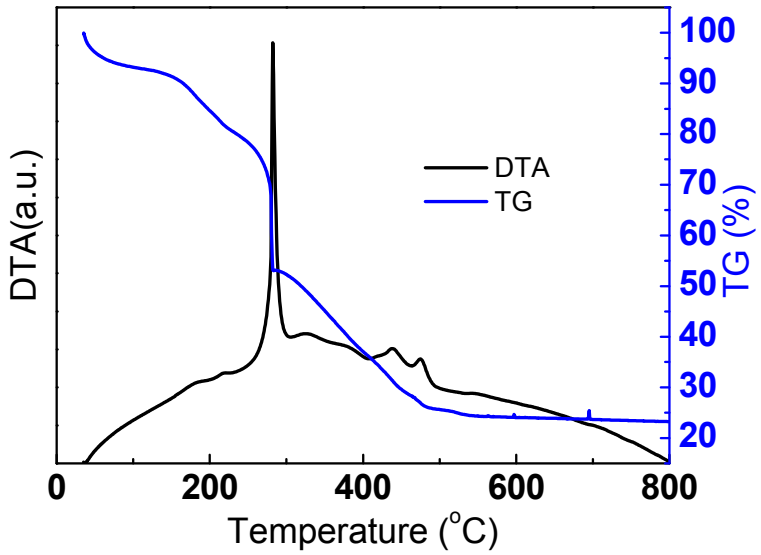

Fig. S1 TG/DTA analysis of the $Bi(NO_3)_3$/TBT/PVP precursor.

The peaks of the DTA curve and the weight loss between 20 and 500 ºC were assigned to the removal of volatile compounds, the decomposition of $Bi(NO_3)_3$, TBT and PVP, and the generation of $Bi_4Ti_3O_{12}$. TG-DTA curve after 600 ºC shows that there was no weight loss. It is convinced that all the organic substances in the $Bi(NO_3)_3$/TBT/PVP precursor nanofibers could be removed at 600 ºC for 30 min.

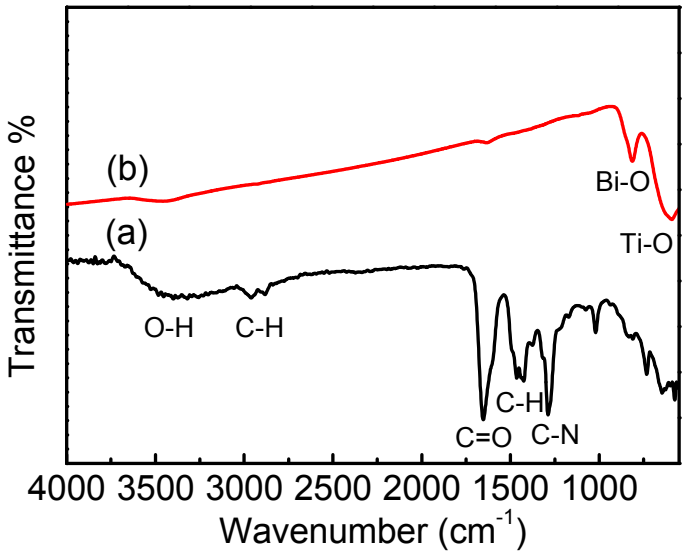

Fig. S2 FTIR of (a) $Bi(NO_3)_3$/TBT/PVP composition (b) BTO-EF6 calcined at 600 ºC.

The as-spun and calcined nanofibers were characterized by FTIR spectra to prove the removal of the organic composition and the results are shown in Fig. S2. The FTIR spectra (Fig. S2a) for the as-spun fiber showed that all absorption peaks attributed to $Bi(NO_3)_3$/TBT/PVP composite fibers which were weakened or disappeared after calcinations at 600 ºC. And the new peaks (Fig. S2b) around 619 cm^{-1} assigned to νTi-O and 795 cm^{-1} to νBi-O appeared, which confirmed that the pure inorganic species were obtained at 600 ºC.

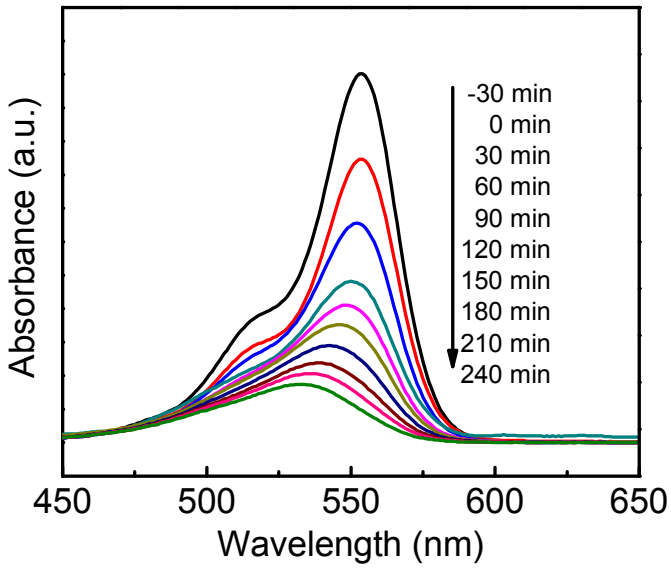

Fig. S3 Absorption changes of the RhB solution in aqueous BTO-EF6 dispersions under visible light irradiation.

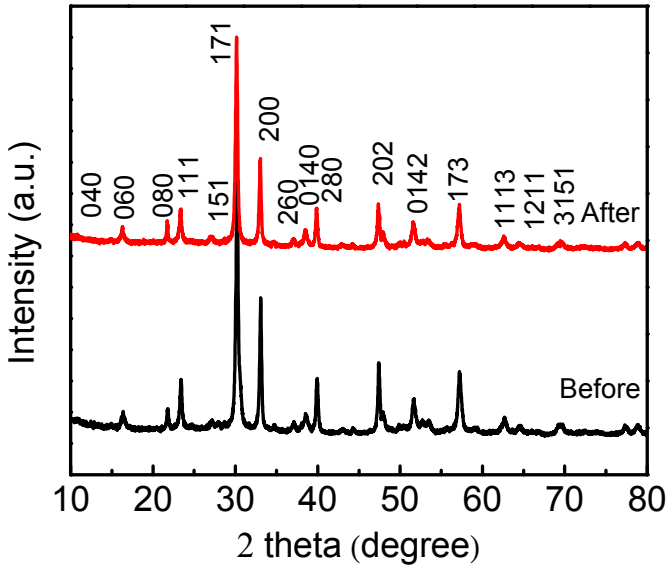

Fig. S4 XRD patterns of the BTO-FE6 nanofibers before and after photocatalytic degradation of RhB with five cycles.