Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Large-scale Synthesis of Self-assembled Ultralong Cannonite Nanobelt Film as Visible-light Photocatalyst

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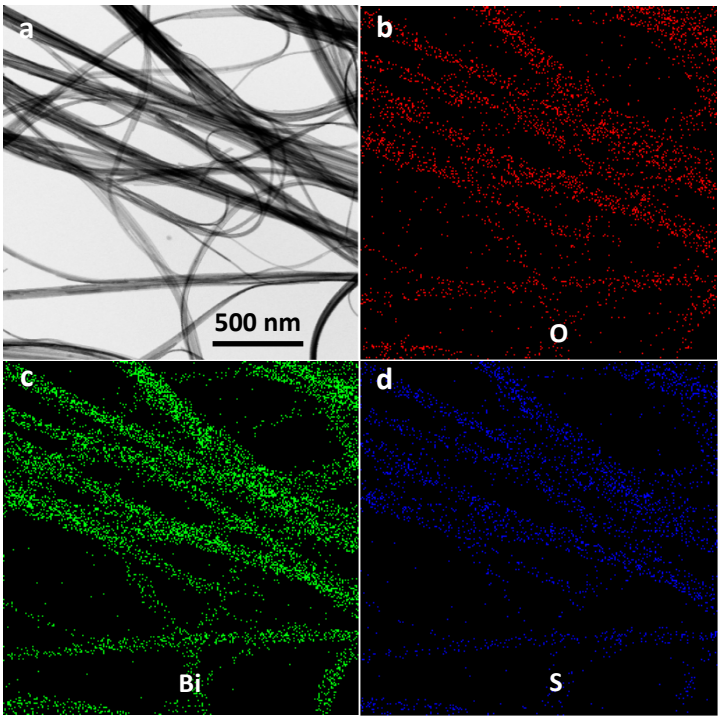

Fig. S1 STEM-EDS elemental maps of the as-prepared nanobelts: (a) STEM image, (b) O elemental map, (c) Bi elemental map, and (d) S elemental map.

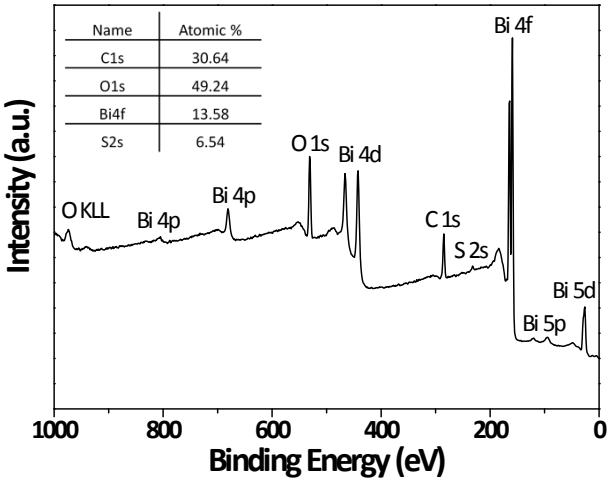

Fig. S2 The X-ray photoelectron survey spectra collected from the as-prepared nanobelts. Inset is the corresponding table showing its elemental atomic ratio.

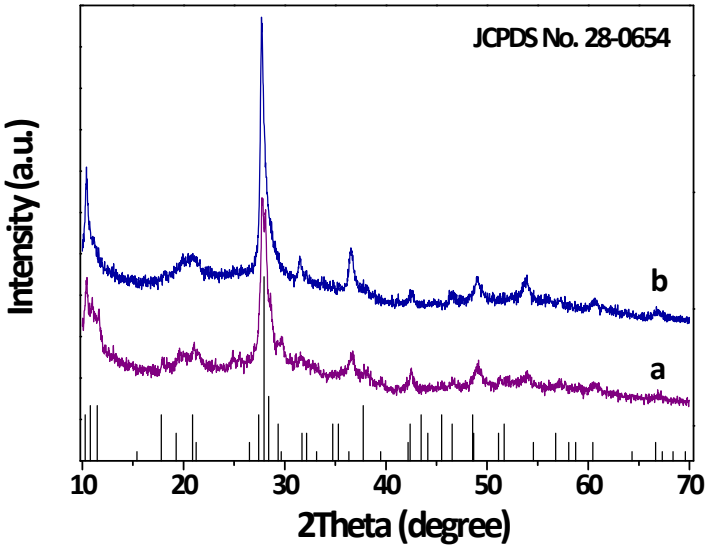

Fig. S3 XRD patterns of the samples prepared at 0 h (a) and 0.5 h (b) with standard XRD pattern of $Bi_6(NO_3)_4(OH)_2O_6$.

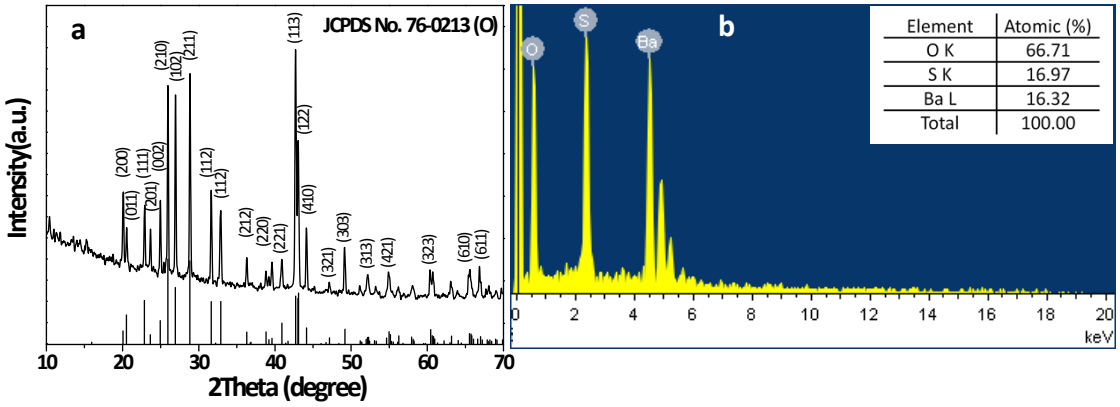

Fig. S4 (a) XRD pattern of the white precipitate resulted from mixing the reacted solution for $Bi_2O(OH)_2SO_4$ nanobelts with $BaCl_2$ aqueous solution and standard XRD pattern of $BaSO_4$, (b) EDS spectrum of the white precipitate. Inset in (b) is the corresponding table showing its elemental atomic ratio of the white precipitate.

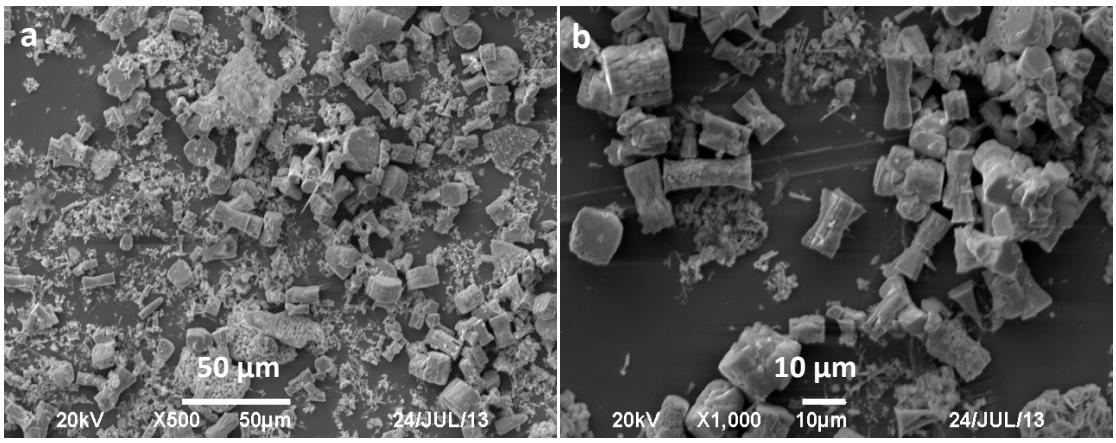

Fig. S5 SEM images of the as-prepared sample obtained hydrothermally under the same conditions but without SDS.

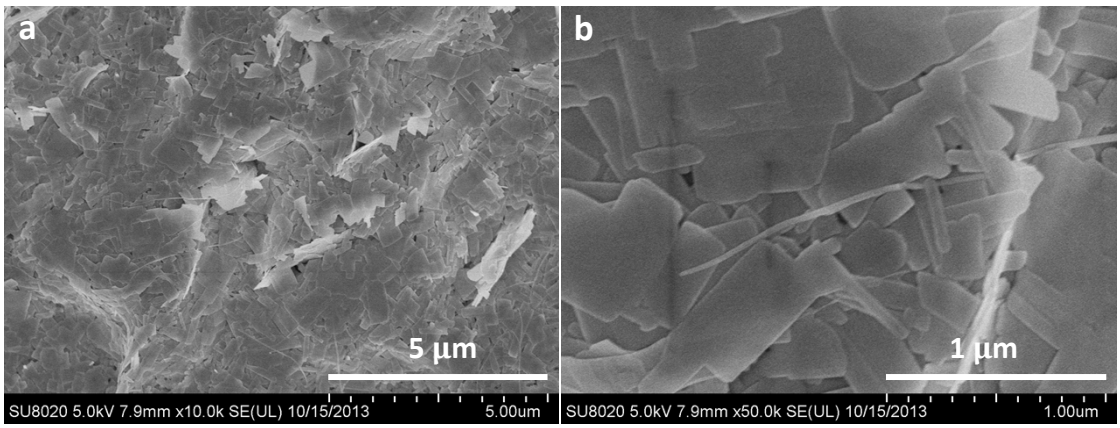

Fig. S6 FESEM images of the as-prepared sample obtained hydrothermally with Na_2SO_4 as reactant instead of SDS.

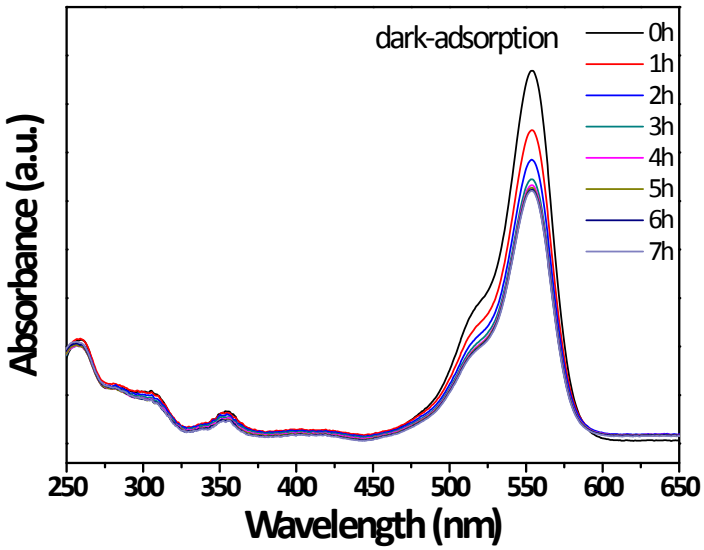

Fig. S7 Temporal UV-vis spectral evolutions of RhB aqueous solution in the presence of nanobelt film as a function of time under dark condition.

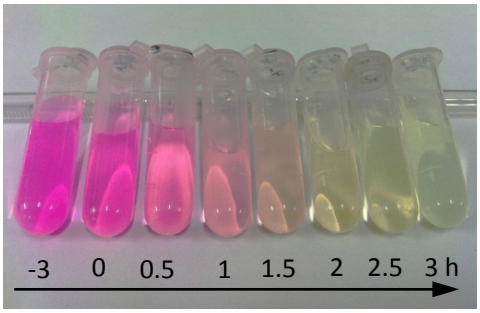

Fig. S8 The optical image of the color changes for the RhB solution during nanobelt powder photocatalytic process (-3 h represents 3 h of dark adsorption before visible light irradiation).

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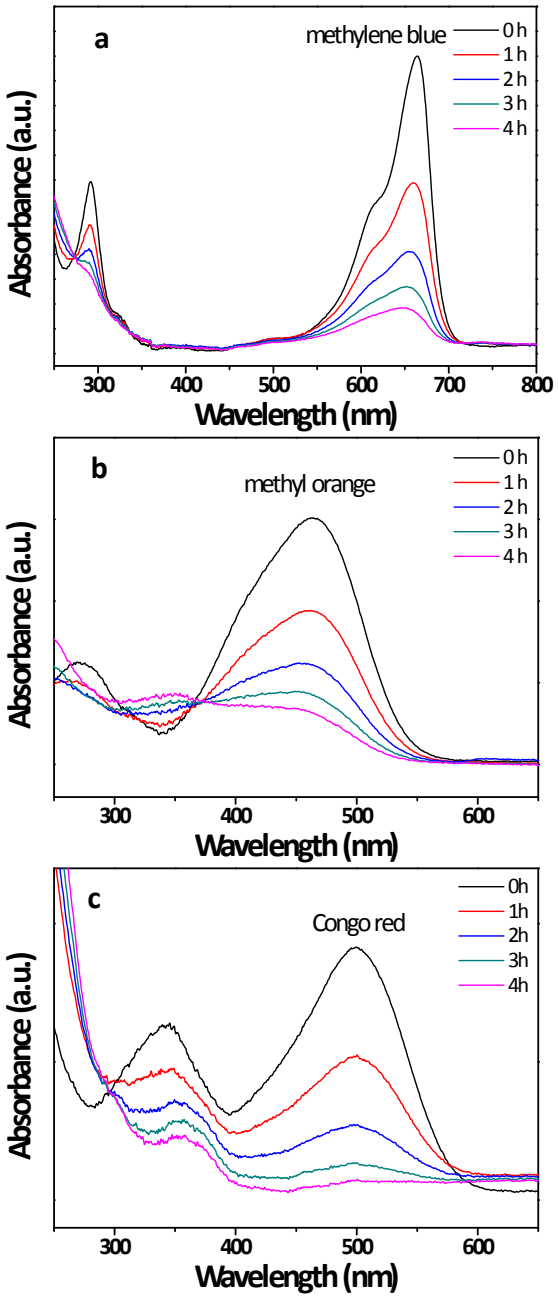

Fig. S9 Temporal UV-vis spectral evolutions of methylene blue (a), methyl orange (b), and Congo red (c) dye aqueous solution in the presence of nanobelt film as a function of time under visible light irradiation (2.8~3.2 mg transferred film to 3 mL 1 ppm dye aqueous solutions).