

Supplementary information (Revised ESI)

## Structural analysis and dye removal behavior of amorphous titania embedded poly(vinyl butyral) hybrid fiber

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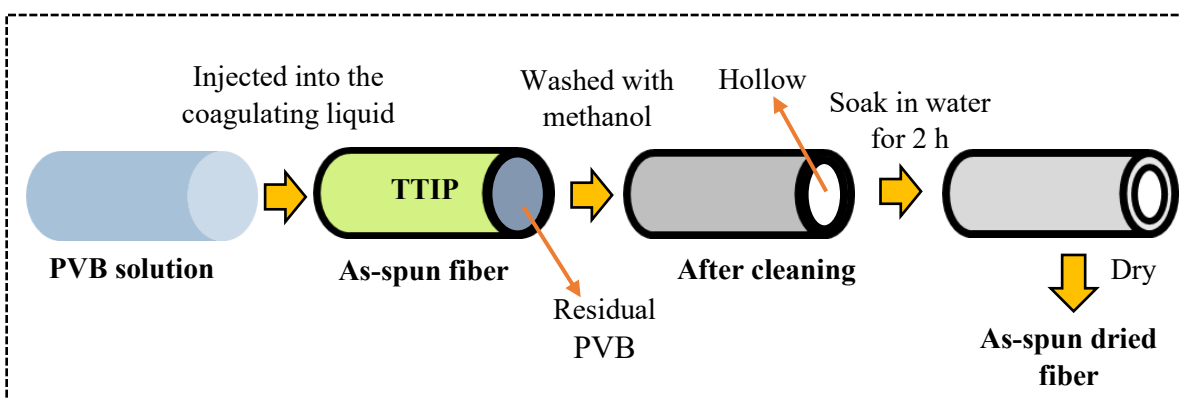


Fig. S1 Schematic principle of as-spun fiber preparation.

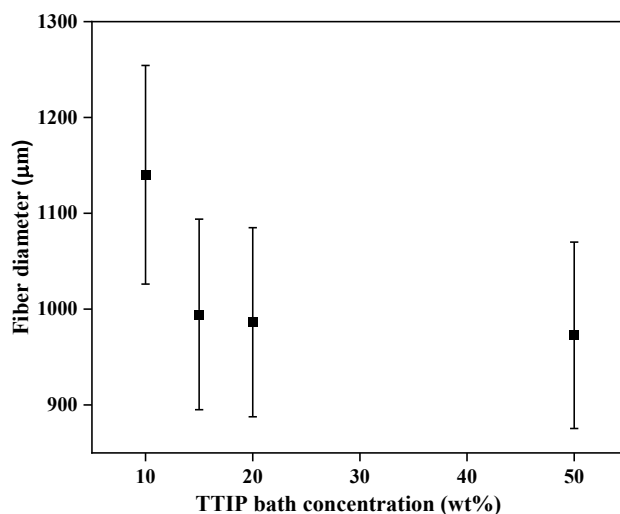


Fig. S2 Effect of TTIP bath concentrations on the PVB-amTiO<sub>2</sub>F diameters.

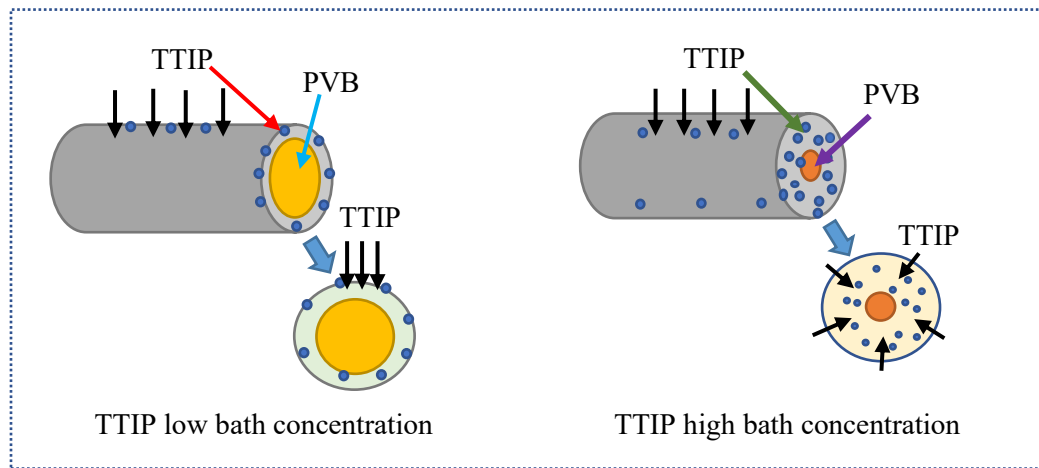


Fig. S3 Proposed structural representation of PVB-amTiO<sub>2</sub>F as a function of the TTIP bath concentration.

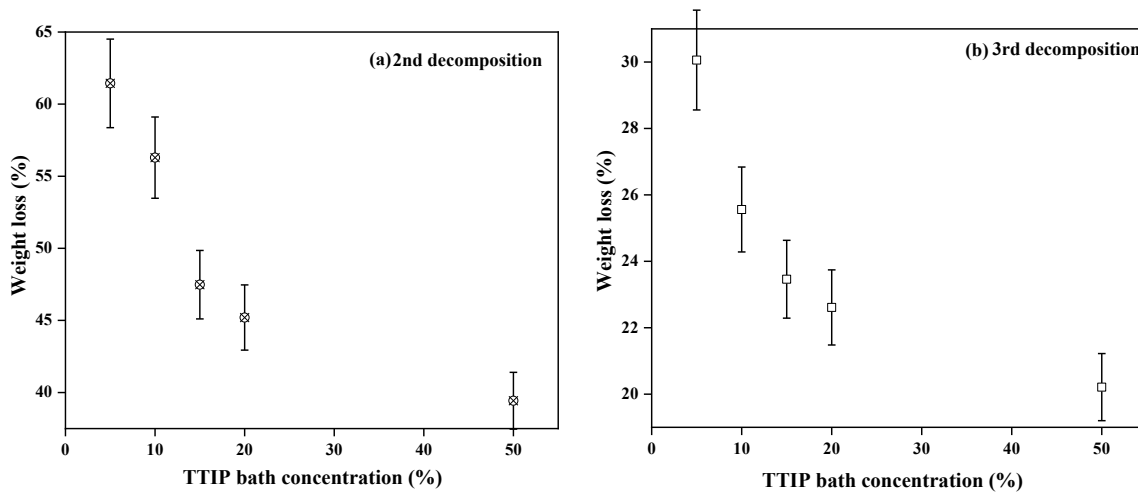


Fig. S4 Variation of the weight loss at (a) 2nd decomposition and (b) 3rd decomposition stage as a function of the TTIP bath concentration.

Table S1 Atomic wt% of the elements (C, O, Ti) observed from EDS analysis

Name of the Fiber	Points	Elements	wt%
10 wt% PVB-amTiO <sub>2</sub> F	1	C	63.17
		O	27.03
		Ti	8.17
	2	C	23.51
		O	10.19
		Ti	Nil
	3	C	64.67
		O	28.02
		Ti	4.8
50 wt% PVB-amTiO <sub>2</sub> F	1	C	3.85
		O	8.15
		Ti	49.31
	2	C	Nil
		O	1.32
		Ti	94.33
	3	C	16.11
		O	26.14
		Ti	50.82

Table S2 Effect of TTIP bath concentration on specific surface area of PVB-amTiO<sub>2</sub>F fibers

10	15.30
15	14.12
20	16.75
50	12.40

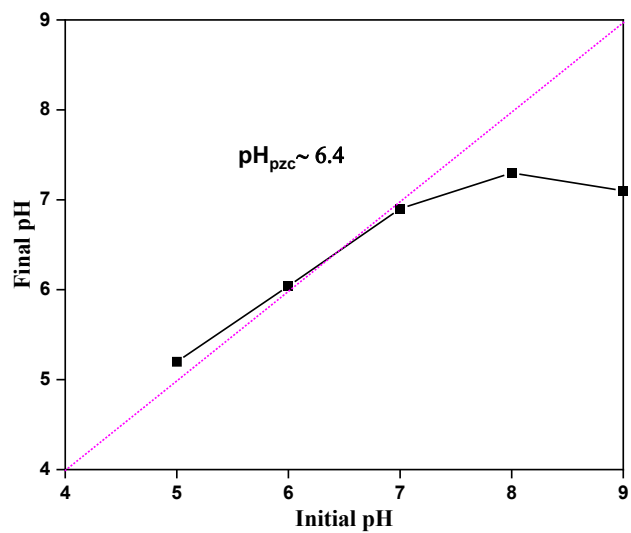


Fig. S5 Determination the  $\text{pH}_{\text{pzc}}$  of PVB-amTiO<sub>2</sub>F from the initial pH vs final pH cross-over point.

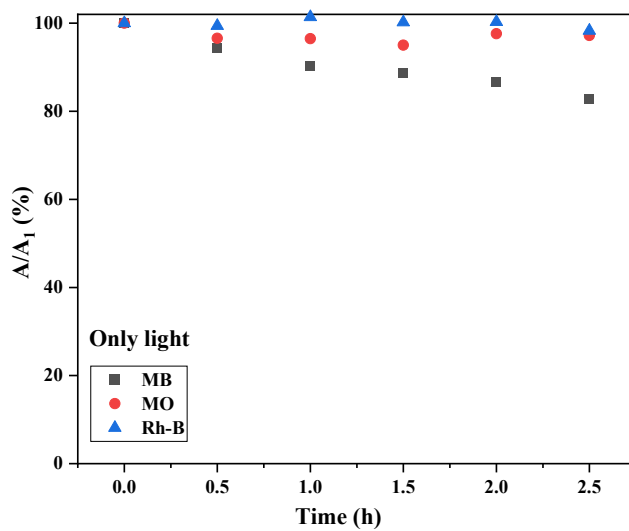


Fig. S6 Variation of dye absorbance in visible light, where no PVB-amTiO<sub>2</sub>F was added.

