Electronic supplementary information

Hierarchical nanofibrous anatase-titania/cellulose composite and its photocatalytic property

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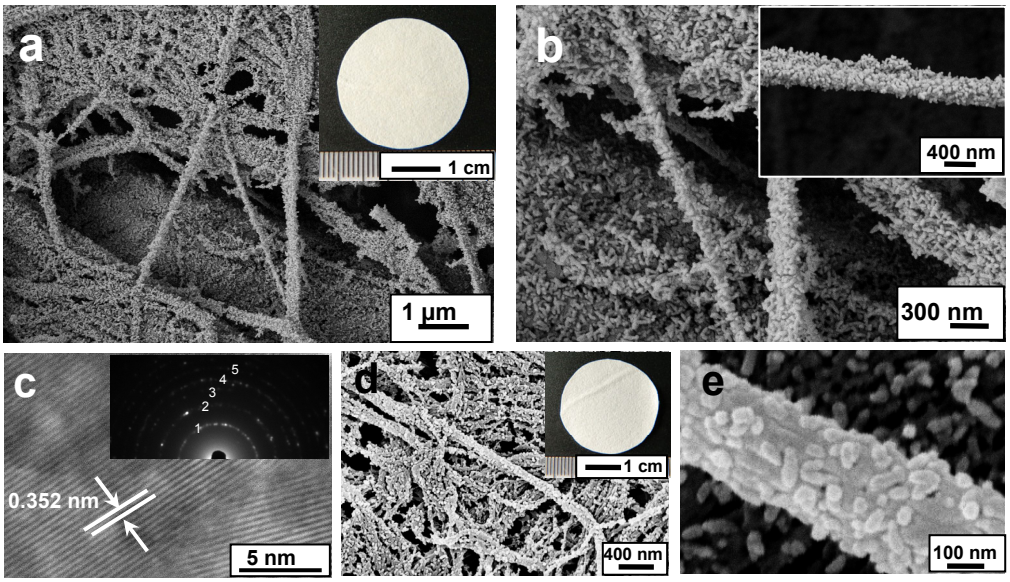

Fig. S1 The anatase-titania/cellulose composite sheet obtained by hydrothermal treatment of filter paper deposited with 10-layer titania gel films (sample anatase-titania/cellulose B) (a-c) and 5-layer titania gel films (sample anatase-titania/cellulose C) (d, e). a) Low-magnification FE-SEM of the sample showing nanofibre assemblies, the inset is a photograph of the composite sheet; b) high-magnification FE-SEM image of the sample, the inset is an individual anatase-titania/cellulose composite nanofibre isolated from the assembly; c) HR-TEM image of an individual anatase-titania/cellulose composite nanofibre, the inset is the SAED pattern of the sample. d) FE-SEM image of an individual anatase-titania/cellulose composite nanofibre, the inset is a photograph of the composite sheet; e) TEM image of an individual anatase titania/cellulose composite nanofibre.

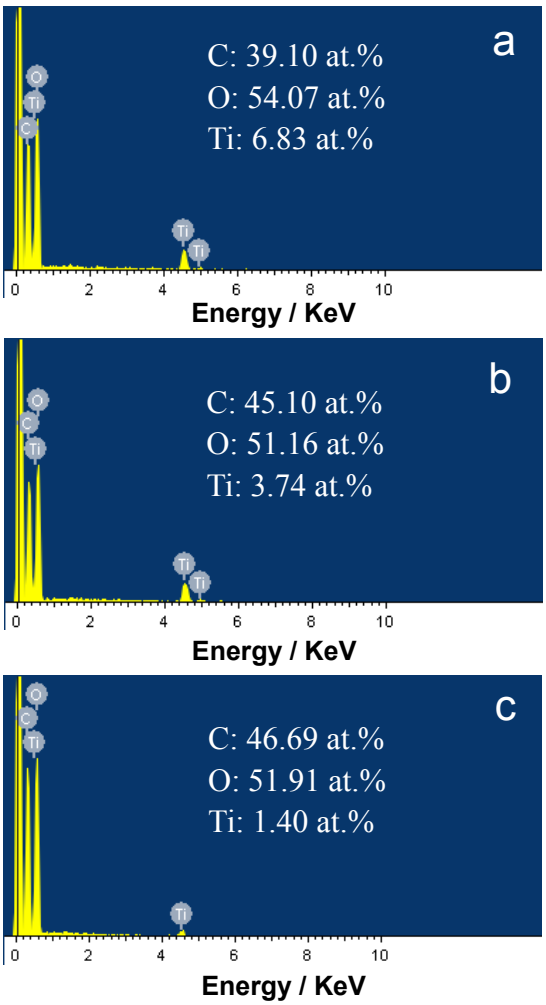

Fig. S2 EDX spectra of a) sample anatase-titania/cellulose A, b) sample anatase-titania/cellulose B, and c) sample anatase-titania/cellulose C.

Fig. S3 Water contact angel measurement of the sample anatase-titania/cellulose A.

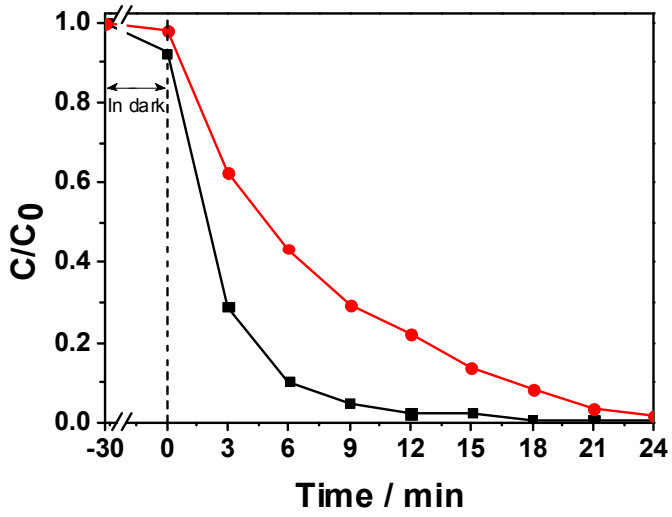

Fig. S4 Variations in the concentrations of methylene blue (black curve) and methyl orange (red curve) in an aqueous suspension as a function of the irradiation time for P25.

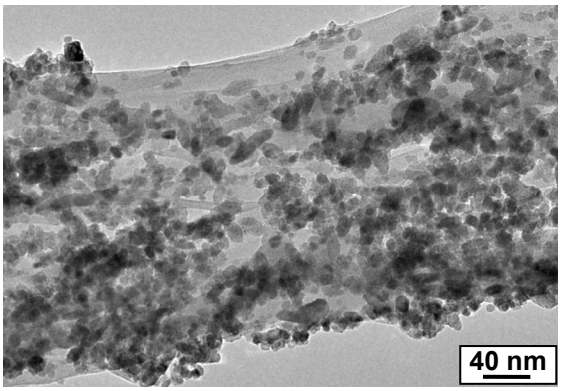

Fig. S5 The TEM image of anatase-titania/cellulose A after photodegradation of organic dyes.

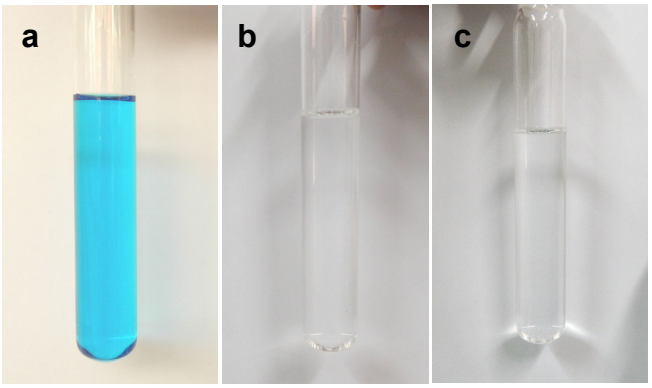

Fig. S6 Photographs of a) MB aqueous solution before photodegradation; b) MB aqueous solution after photodegradation; c) MB aqueous solution after photodegradation followed by bubbling with oxygen into it.

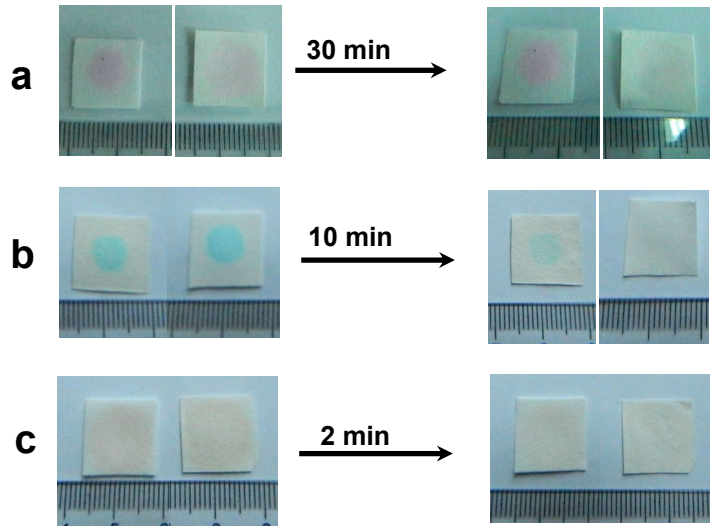

Fig. S7 Degradation of a) rhodamine B under sunlight irradiation, degradation of b) methylene blue and c) methyl orange under mercury-lamp irradiation by using sample anatase-titania/cellulose A (right); and the pure filter paper was used as a compassion (right).