Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supplementary Information:

ZnO long fibers: large scale fabrication, precursor and the transformation process, microstructure and catalytic performance

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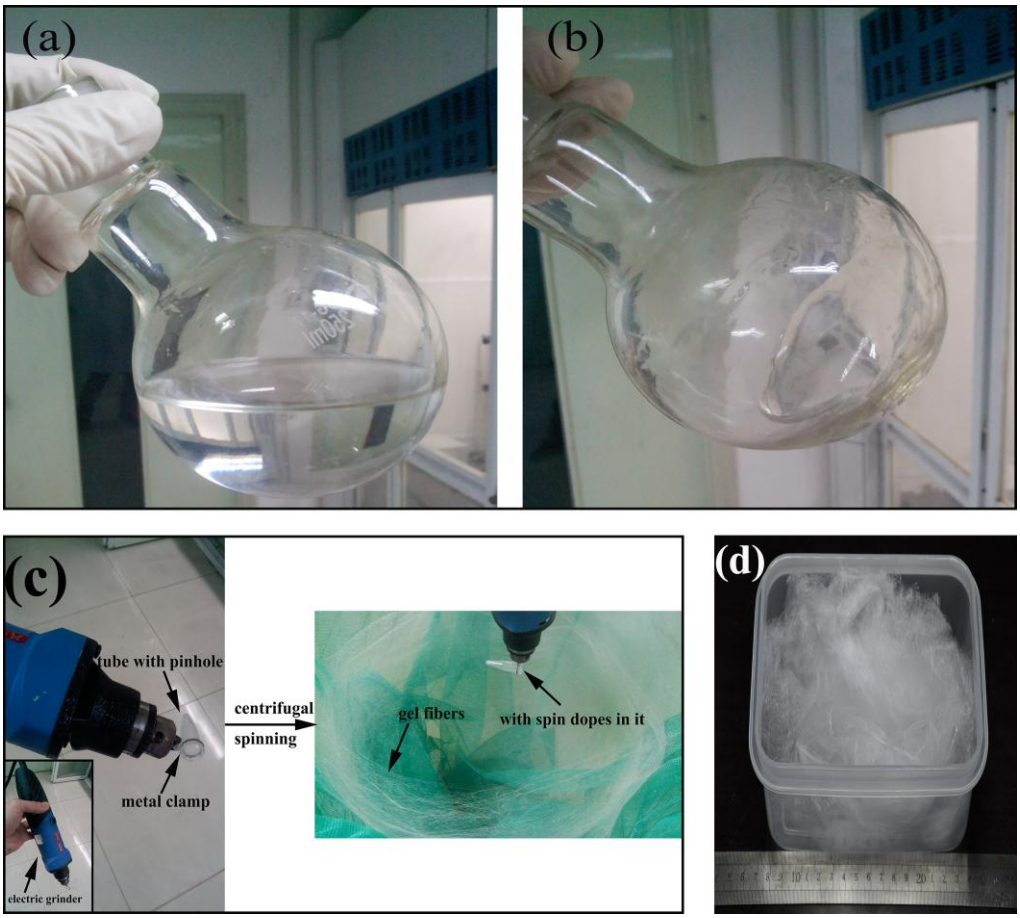

Figure S1. Digital images of (a) precursor solution (b) spin dopes (c) configuration of centrifugal-spinning device (d) precursor fibers in large scale

Table S1. the parameters of centrifugal process

Temperature	25 ℃
RH	50 %
Rotating speed	6000 rpm
Volume of spin tube	1.5 ml
Length of spin tube to collector	~20 cm
Diameter of tube pinhole	375 um
Viscosity	24024 mPa˙s

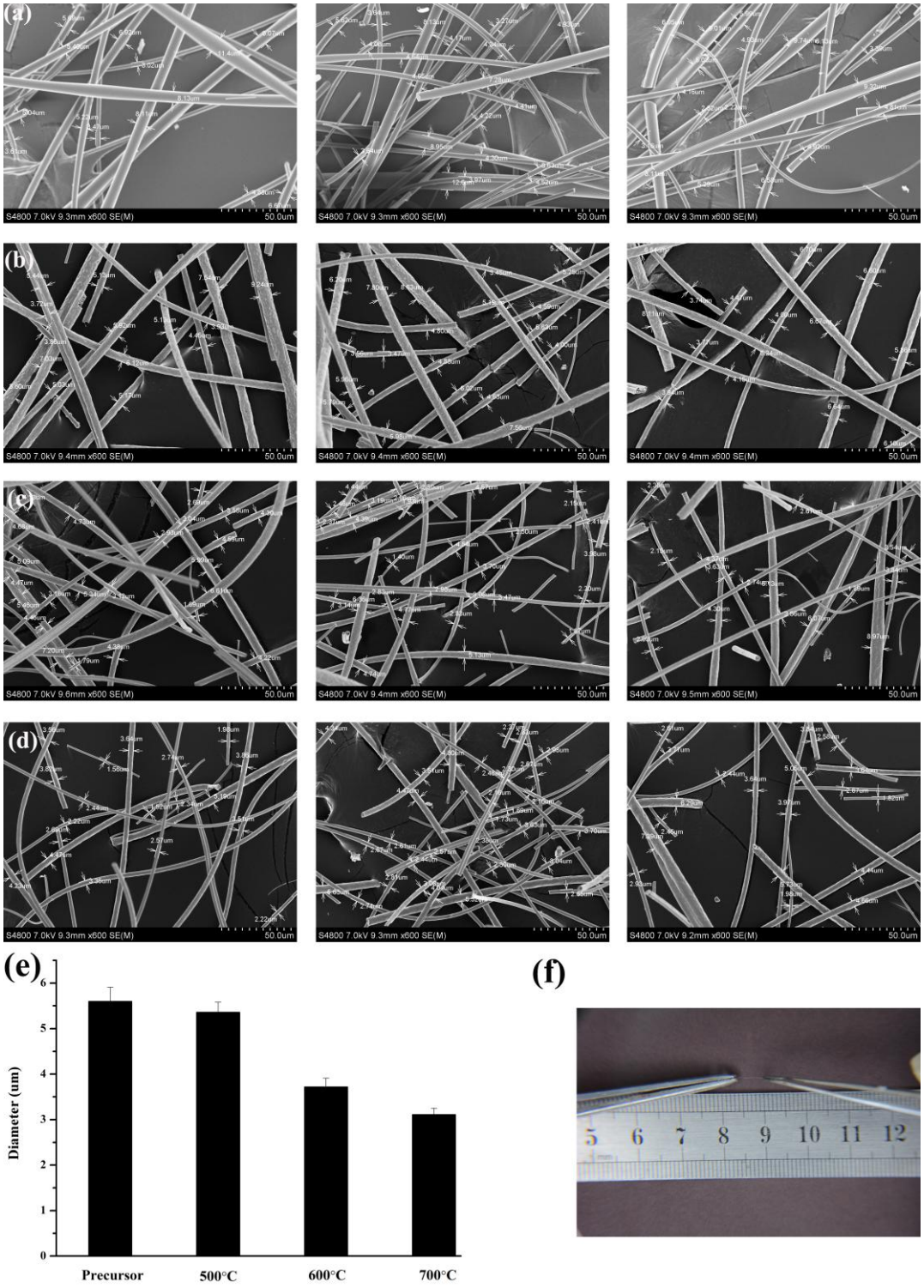

Figure S2. Diameter measurement of (a) precursor fibers, (b) fibers heat-treated at 500 ℃, (c) 600 ℃, (d) 700 ℃, (e) statistics of diameter distribution, (f) length measurement of a single fiber heat-treated at 500 ℃

For each sample, 50 diameter data were chose to analyze average diameter and standard error.

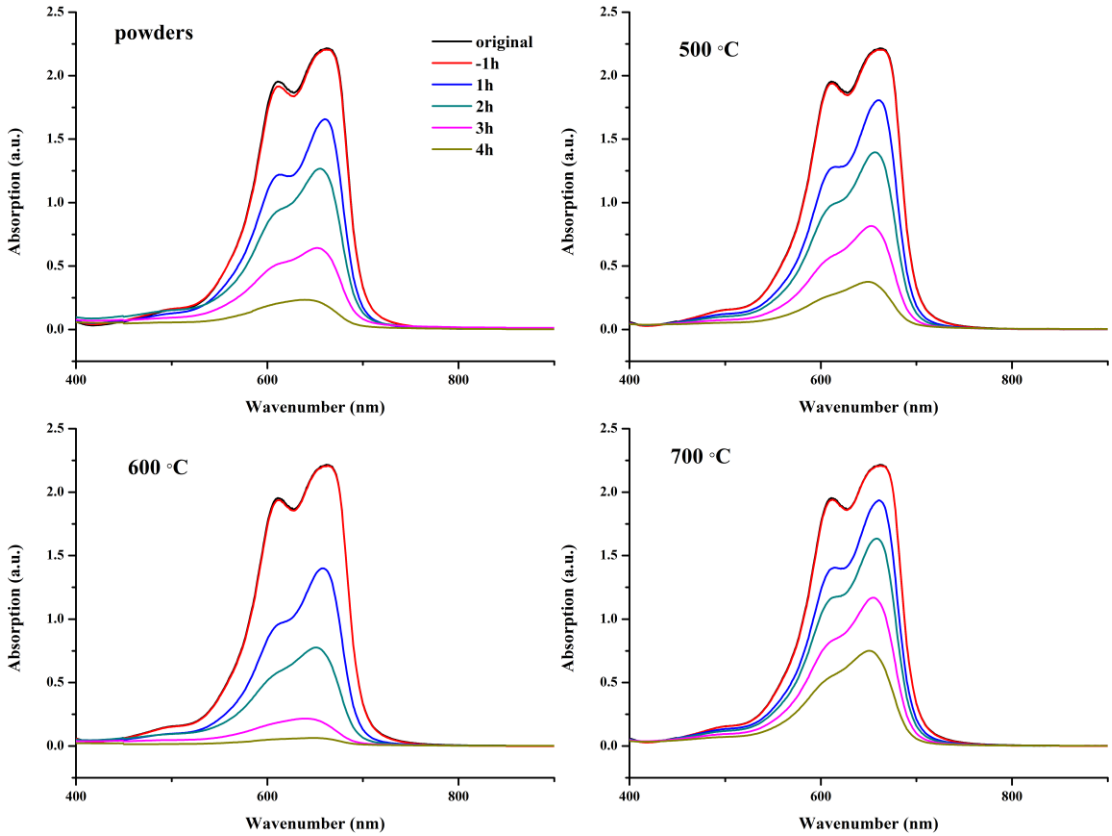

Figure S3. UV-Vis spectra recorded during the photocatalytic degradation of MB by using different catalysts.

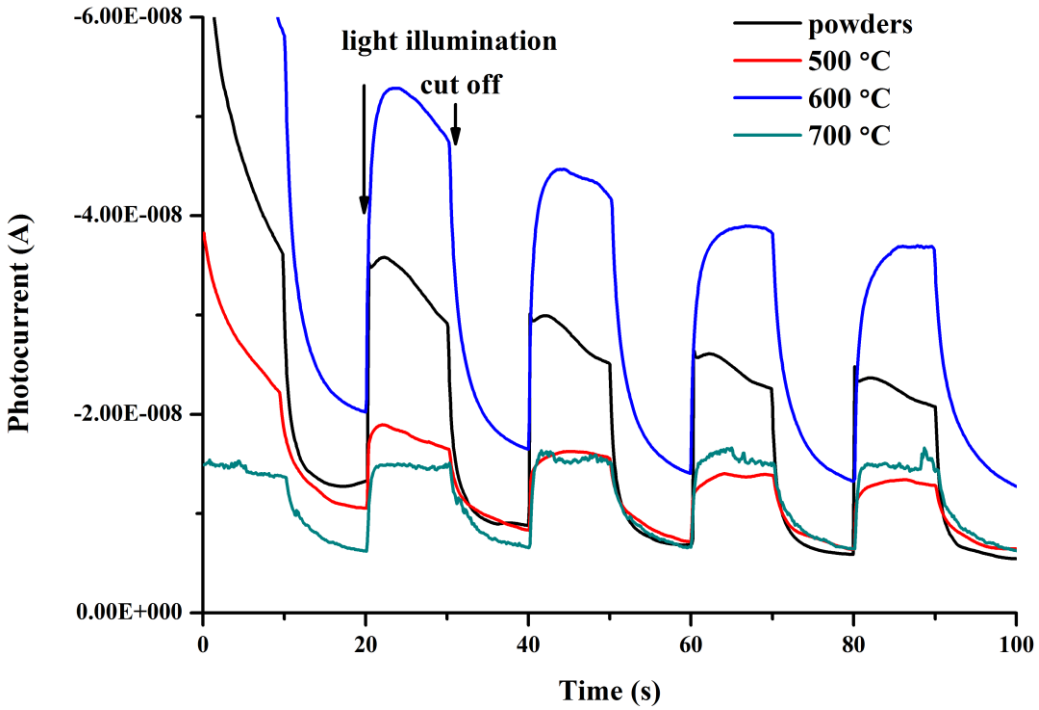

Figure S4. Photocurrent of powders and fibers heat-treated at different temperatures.

For photocurrent experiment, 10 mg of as-prepared fibers and ZnO powders were added into 0.5 ml of isopropanol. A uniform suspension was obtained after 20 min of ultrasonic treatment. The suspension was spin coated on a piece of ITO glass at a speed of 300 rps (10 s) and 800 rps (20s). The specimen was dried at room temperature for 1 h. The ITO glasses coated with fibers and powders were used as working electrode. A platinum sheet and an Ag/AgCl electrode were used as counter and reference electrodes, respectively. A Xe lamp (300 W) was used as the light source. The electrolyte solution was a Na_2SO_4 aqueous solution (0.2 mol/L^{-1}).

Table S2. BET surface area of powders and fibers

sample	BET surface area (m^2/g)	Pore volume (cm^3/g)	Pore size(Å)
powders	1.29	0.002	-
500 ℃	10.96	0.054	197.50
600 ℃	0.33	0.023	2719.40
700 ℃	-	0.002	-

The minus indicates the value is very low that the instrument can not give a credible analysis.