Electronic Supporting Information Available.

Immobilization of Nano-TiO_2 (P25). Nano-TiO_2 powder (1.0 g) was first suspended with sonication in 20.0 mL of ethanol. Then 5.0 g of polyethylene glycol (PEG) aqueous solution (65 wt %) were added under violent stirring to obtain the suitable viscosity for next immobilization adhesive ability. The mixture was slowly pasted on a circle glass sheet (Φ100 mm) with a soft brush and then dried at 120 °C for 30 min in an oven. Nextly, the immobilized TiO_2 film was anneal at 450 °C in air for 2 h to purify the TiO_2 phase. The final amount of nano-TiO_2 immobilized on the glass sheet was 85±5 g/m^2. Finally, the immobilized nano-TiO_2 photocatalyst was introduced into the reactor for the comparative photocatalytic experiments.

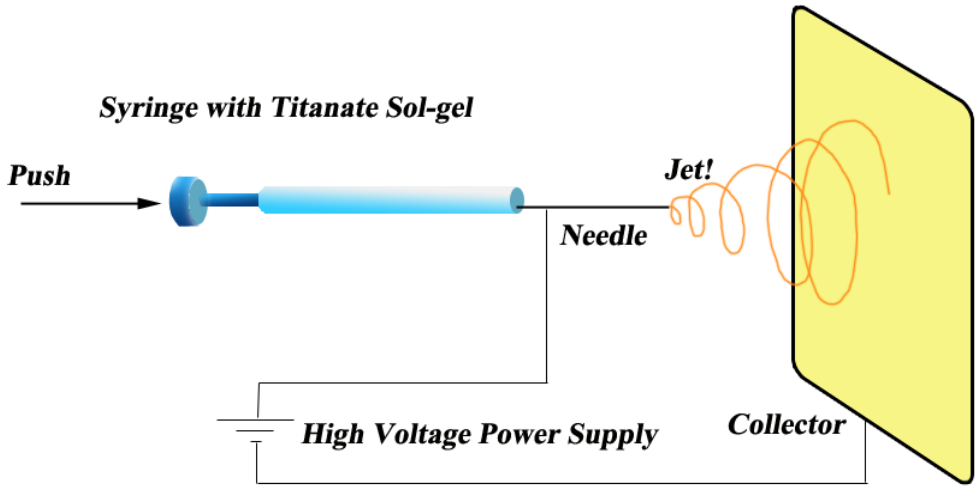

Fig. S1. Electrospinning device composed by high voltage power supply, injector, needle, and collector (covered with aluminum foil).

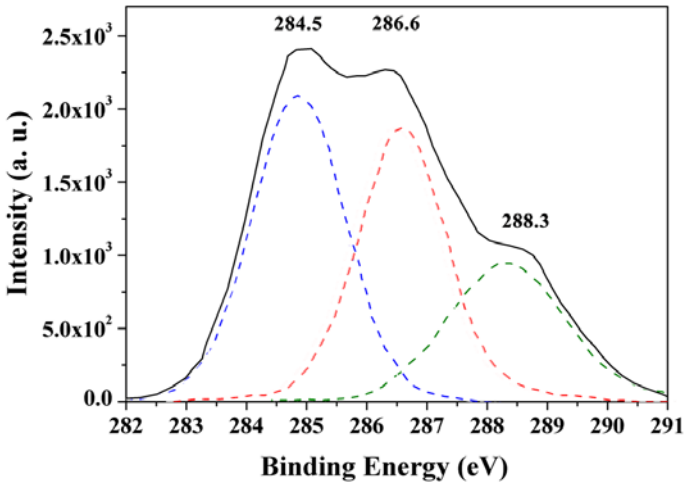

Fig. S2. XPS pattern of C 1s and fitted regression lines for C doped TiO_2 fibers.