

Electronic Supplementary Information:

**Seedless growth of ZnO nanorods on TiO₂ fibers by chemical bath
deposition**

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Synthesis of organotitanium compound

Typically, DI water (20.94 g), Hacac (38.80 g), TEA (156.84 g) were added into $TiCl_4$ (73.50 g) under ice-water bath in turn. Before reaction, all reactants were diluted by methanol that 200 ml, 100 ml, 112 ml, and 202 ml methanol solution were added respectively. A gold solution was obtained after mixing these species. The mixture was evaporated into dry powders using vacuum evaporator under a condition of -0.1 mbr, 50 °C. The powders were resolved by THF (800 ml), and the unresolved component was filtrated. Aurantia powders (65.05 g, yield 85 %) which could be used as precursor to force-spinning were acquired after evaporating the THF solution. The main chemical reaction could be simplified as the following equation.

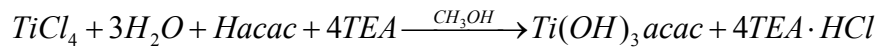


Table S1. Parameters of force-spinning process

Temperature	32 °C
Relative Humidity	42 %
Rotating speed	23000 rpm
Viscosity	88.85 Pa•s

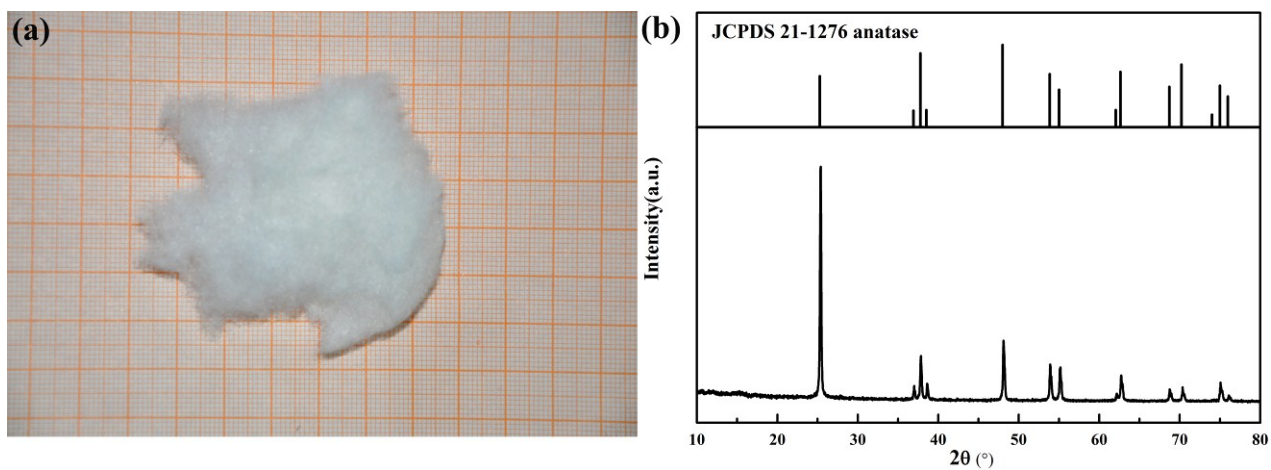


Fig. S1. (a) Photo image and (b) XRD pattern of TiO₂ fibers heat-treated at 500 °C

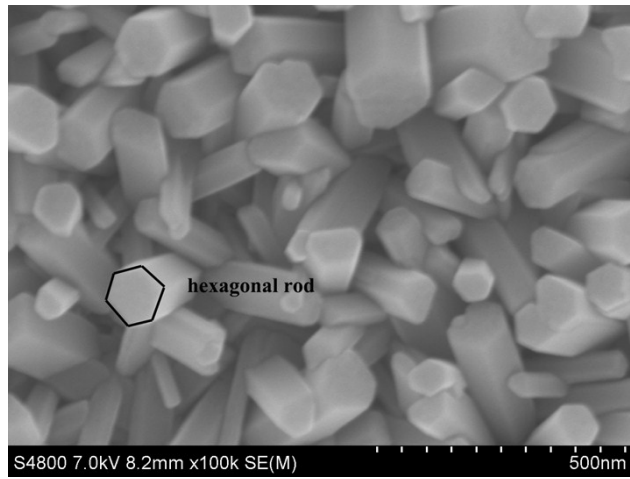


Fig. S2. Magnified SEM image of ZnO NRs anchored on TiO₂ fibers

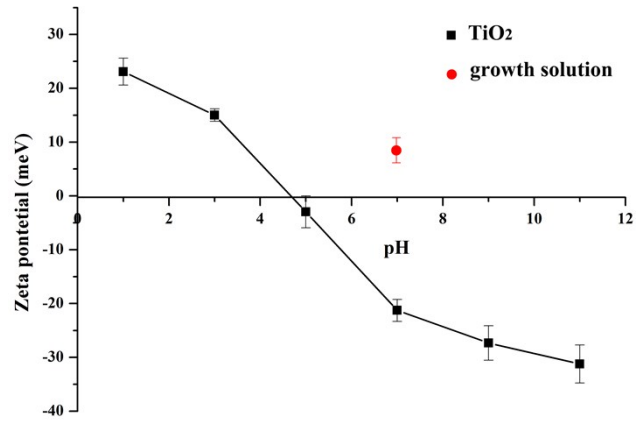


Fig. S3. Zeta potential of ZnO growth solution and TiO₂ fiber aqueous solution at various pH value

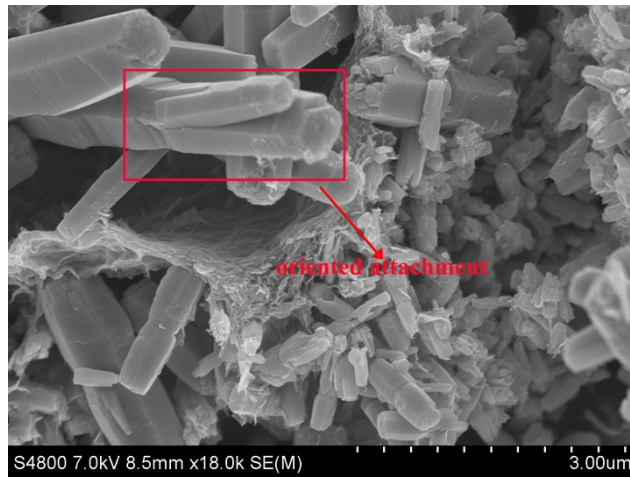


Fig. S4. Oriented attachment growth found in the ZnO NRs homogeneously grown in growth solution