Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Quantum Dot Sensitized Electrospun Mesoporous Titanium Dioxide Hollow Nanofibers for Photocatalytic Applications

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EDX of TiO_2 solid, hollow and CdS sensitized TiO_2 hollow nanofibers

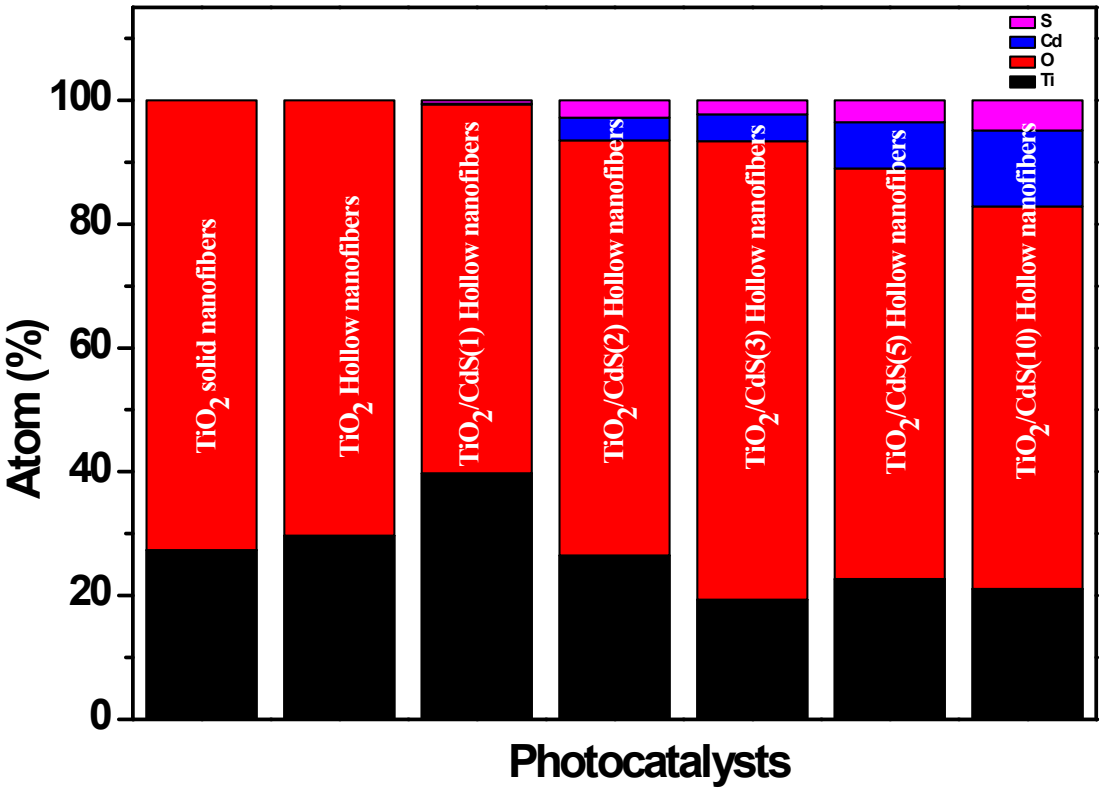

Fig. S1 EDX of different photocatalyst.

Element mapping

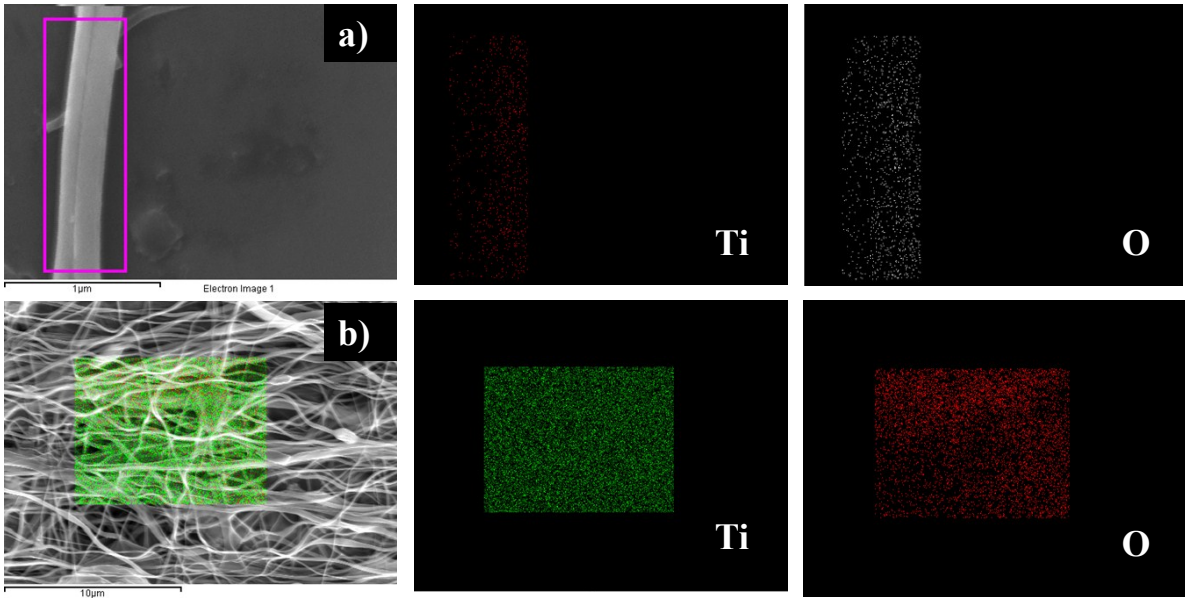

Fig. S2 Element mapping of (a) TiO_2 solid nanofibers (b) TiO_2 hollow nanofibers

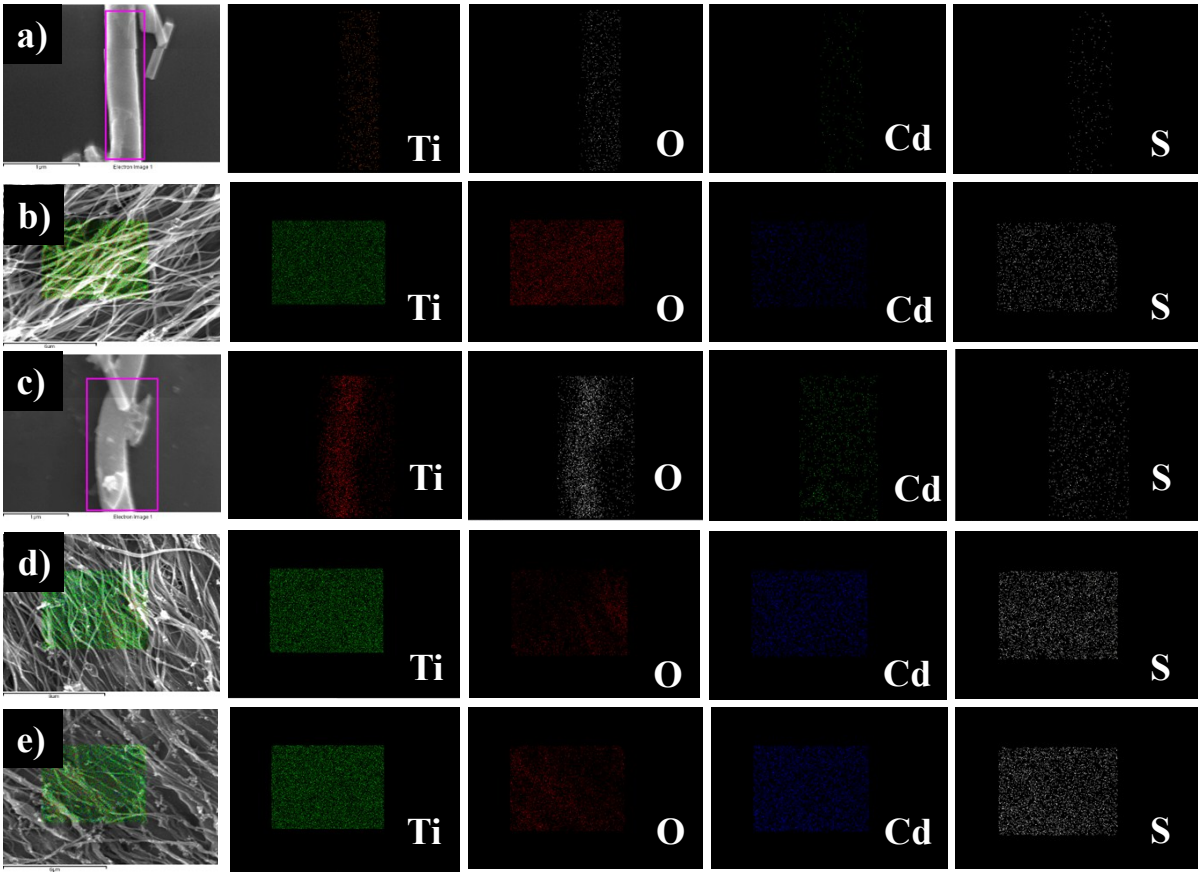

Fig. S3 Element mapping (a, b, c, d and e) of CdS sensitized TiO_2 hollow nanofibers after 1, 2, 3, 5 and 10 SILAR cycles, respectively.

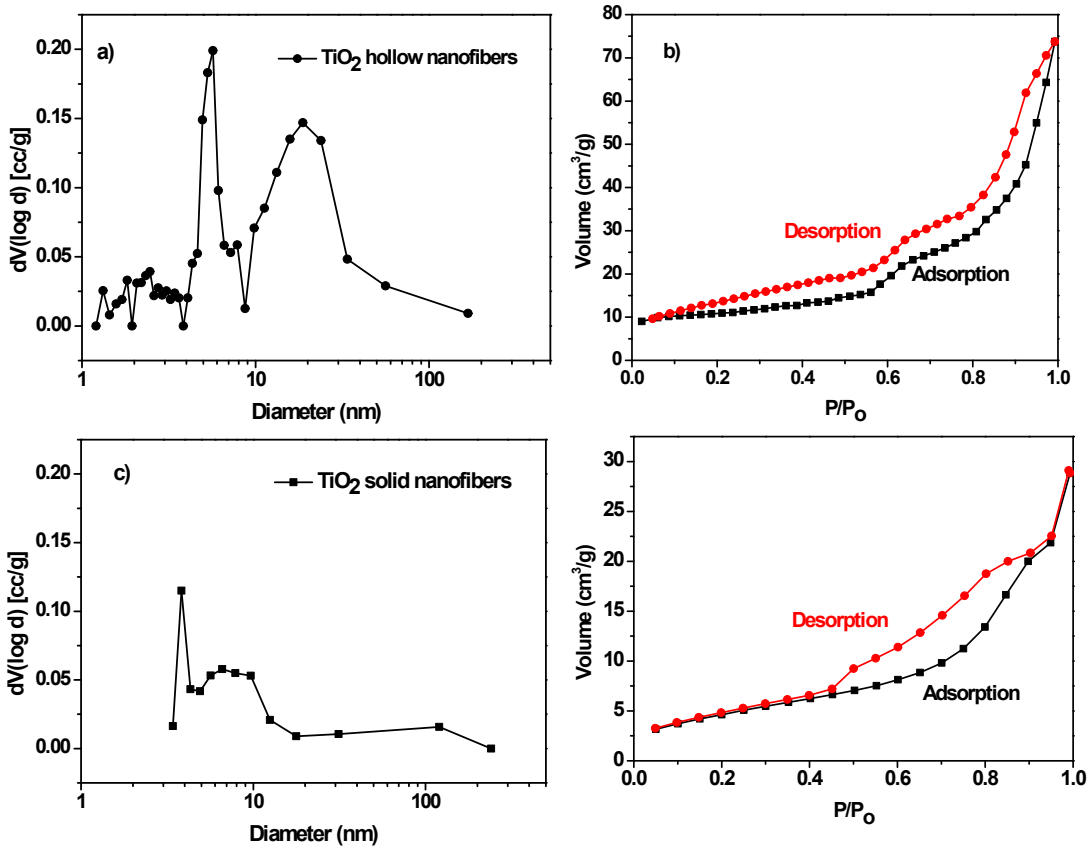

Fig. S4 a) Pore size distribution curve and b) nitrogen-sorption isotherm of TiO_2 hollow nanofibers; c) pore size distribution curve and d) nitrogen-sorption isotherm of TiO_2 solid nanofibers.

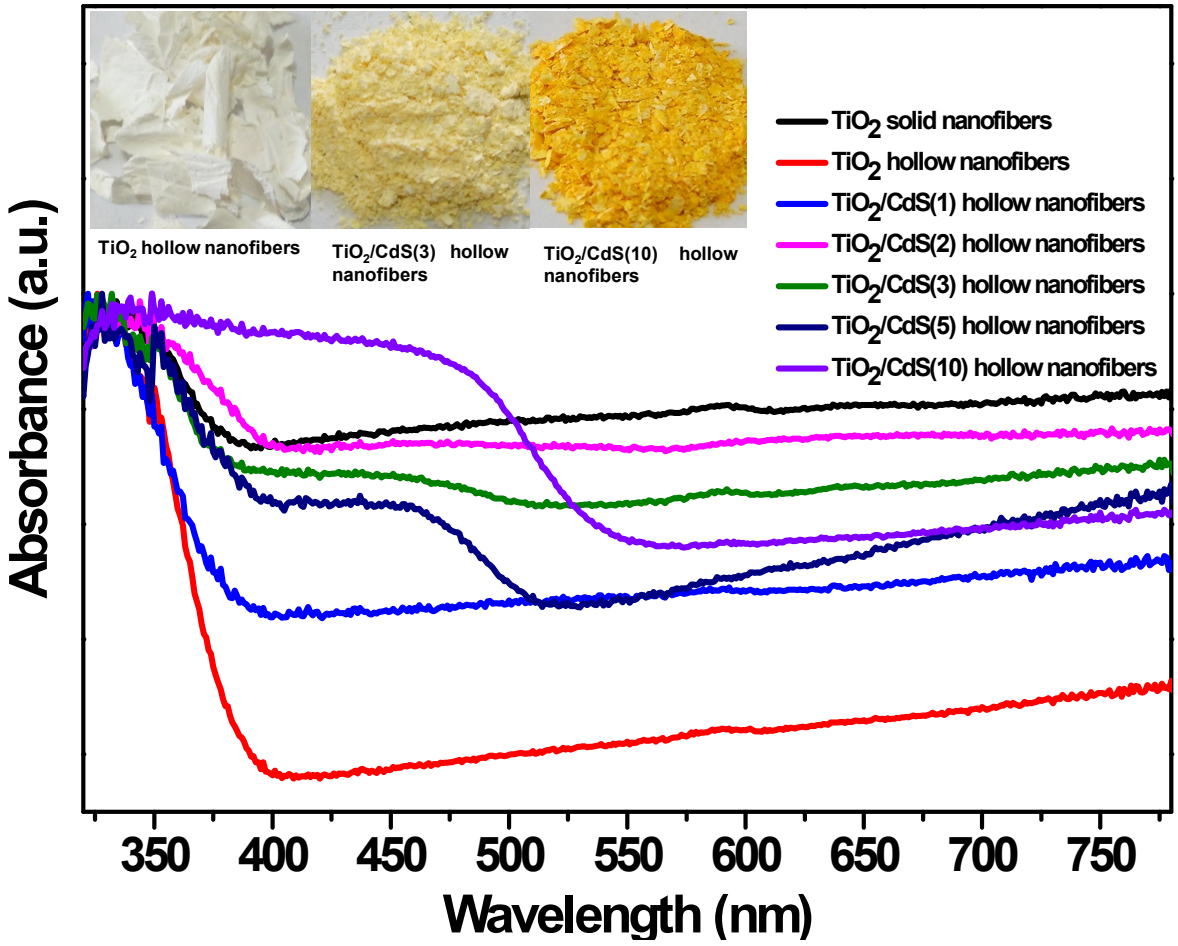

Fig. S5 UV-vis absorption spectra of solid, hollow and CdS sensitized hollow TiO_2 nanofibers; number in the parenthesis denotes number of SILAR cycles; inset shows digital photographs for different photocatalyst.

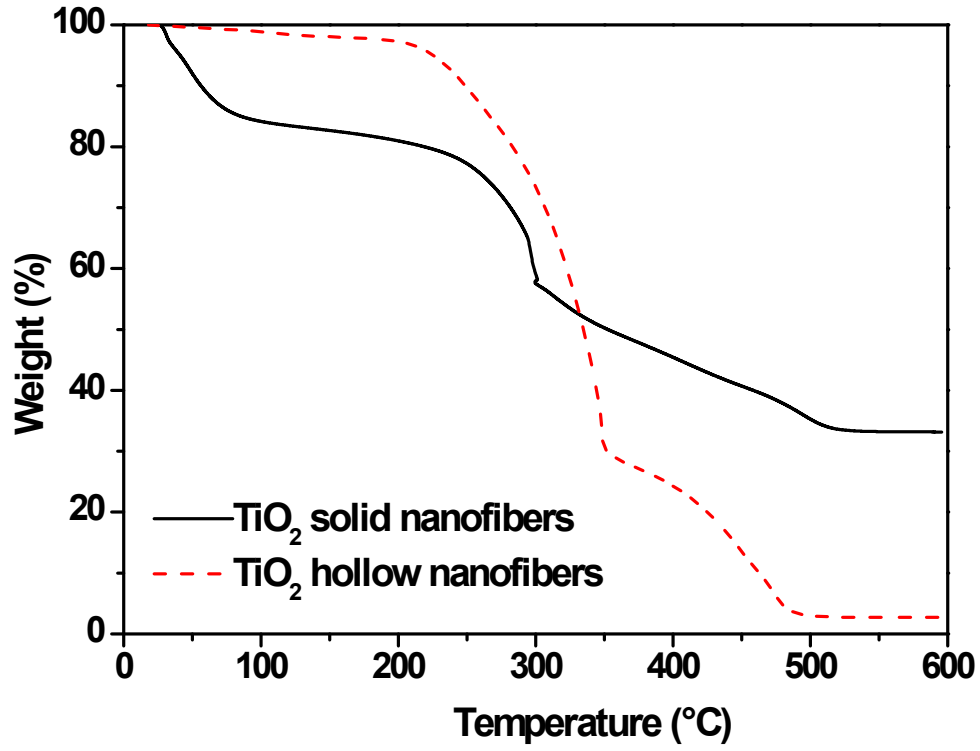

Fig. S6 TGA analysis curves of as electrospun solid and hollow TiO_2 nanofibers.

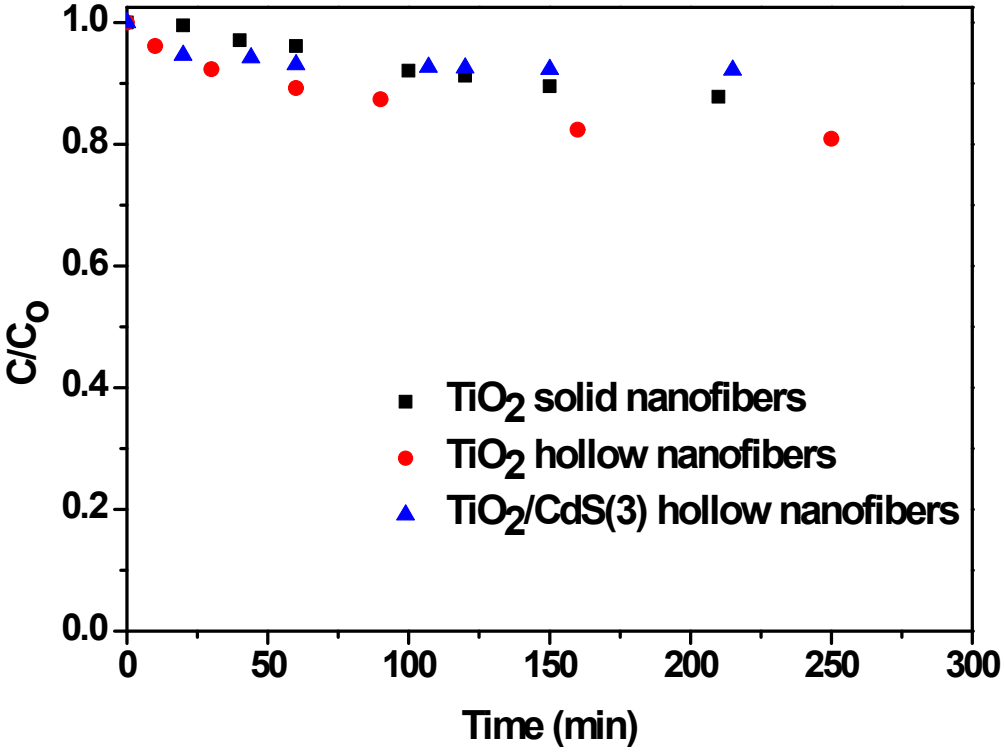

Fig. S7 Adsorption study of solid, hollow and CdS sensitized hollow TiO_2 nanofibers; number in the parenthesis denotes number of SILAR cycles under dark.

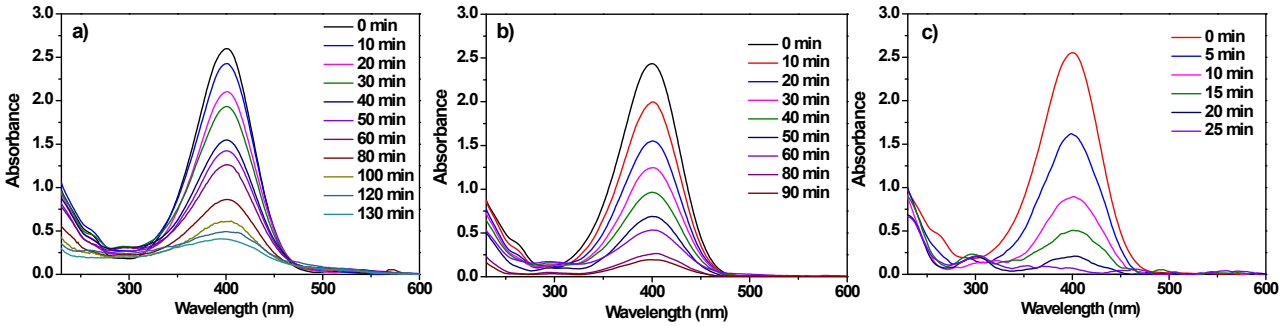

Fig. S8 UV-vis absorption spectra of 4-NP at different time interval with photocatalyst (a) TiO_2 solid nanofibers, (b) TiO_2 hollow nanofibers and (c) TiO_2/CdS(3) hollow nanofibers.

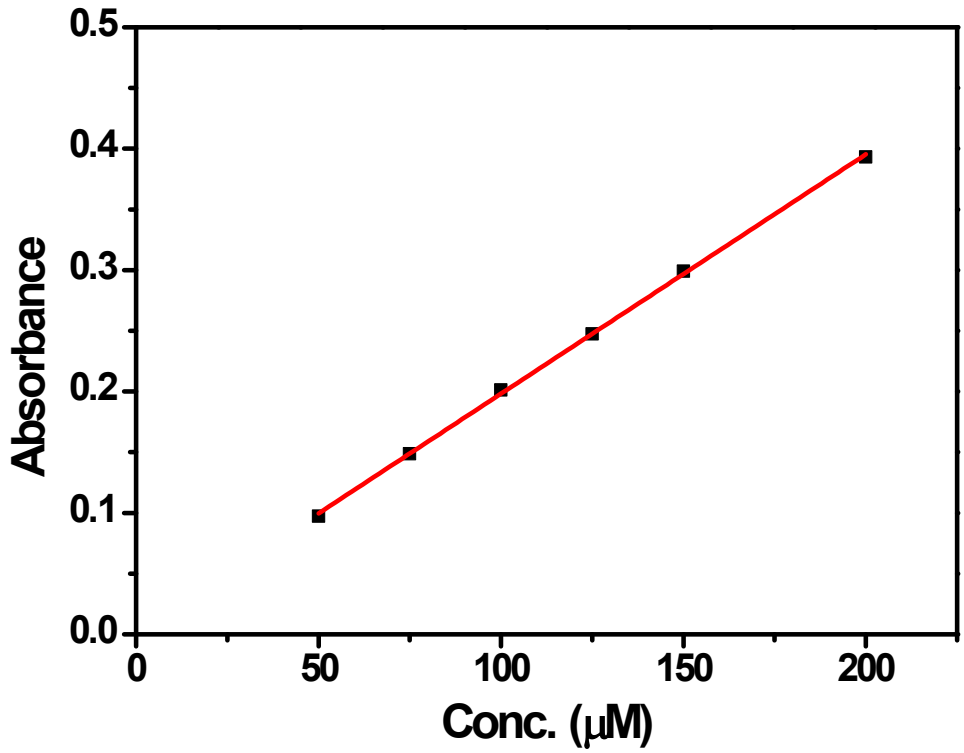

Fig. S9 The calibration curve for the 4-AP.

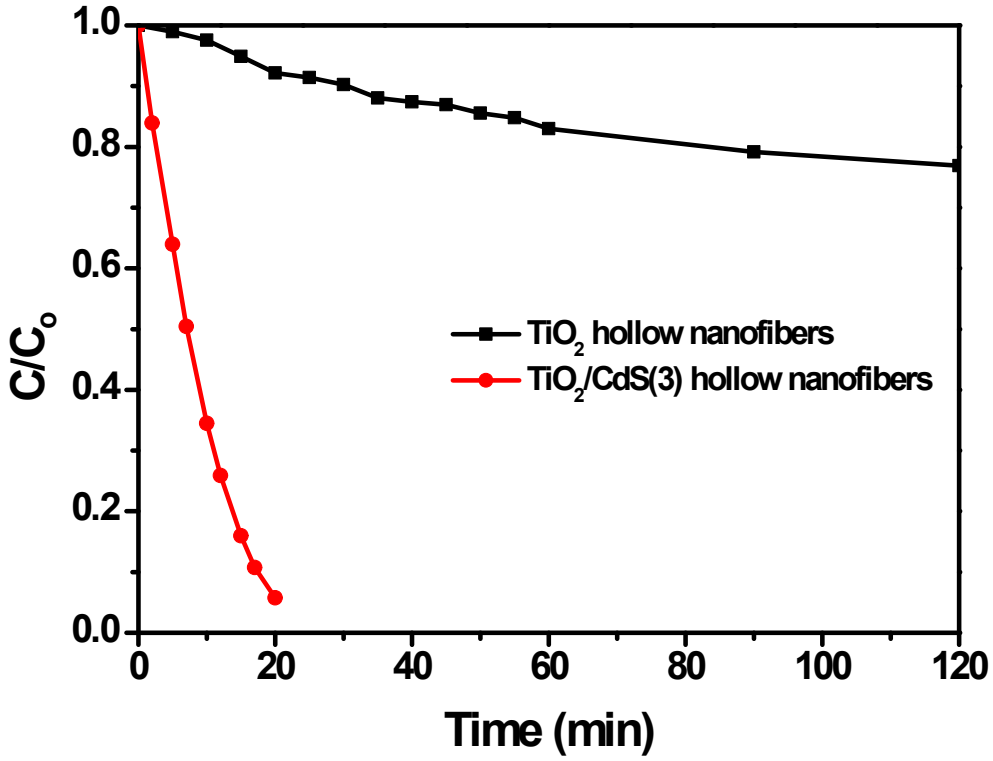

Fig. S10 Photocatalytic activity of TiO_2 hollow nanofibers and TiO_2/CdS(3) hollow nanofibers for degradation of 4-NP in the presence of $NaBH_4$ (Photocatalyst loading = 1 mg/mL of 10^{-4} M 4-NP) under solar light irradiance.

K (TiO_2 hollow nanofibers) = 0.0027 min^{-1}

K (TiO_2/CdS(3) hollow nanofibers = 0.1269 min^{-1}