Supplementary Information

Nanoparticles enwrapped with nanotubes: A unique architecture of CdS/titanate nanotubes for efficient photocatalytic hydrogen production from water

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Table S1. CdS crystallite sizes for CdS-h, CdS-p, CdS/TNTs and CdS@TNTs.

sample	CdS crystallite size (nm)
CdS-h	64
CdS-p	16
CdS/TNTs	36
CdS@TNTs	8

Table S2. CdS crystallite sizes and BET surface areas for TNTs, CdS-h, and CdS/TNTs samples with different Cd/Ti molar ratios.

sample	CdS crystallite size (nm)	BET surface area ($m^2 g^{-1}$)
TNTs	——	103
CdS/TNTs-0.01	32	91
CdS/TNTs-0.03	40	88
CdS/TNTs-0.05	36	87
CdS/TNTs-0.1	50	70
CdS/TNTs-0.2	50	67
CdS-h	64	7

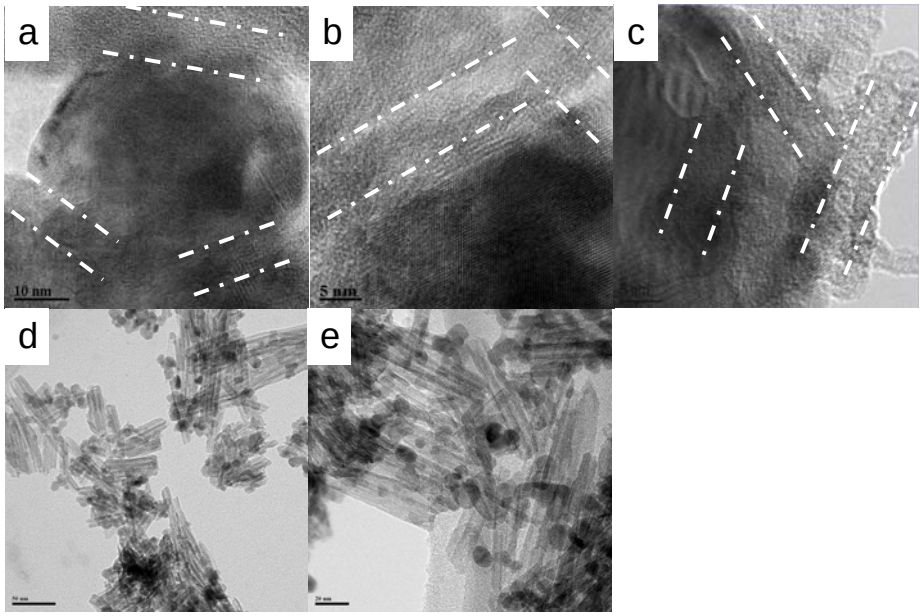

Fig. S1 TEM images of various samples: (a-c) the intimate multipoint contacts between the CdS nanoparticle and surrounding TNTs in CdS/TNTs; (d), (e) CdS@TNTs.

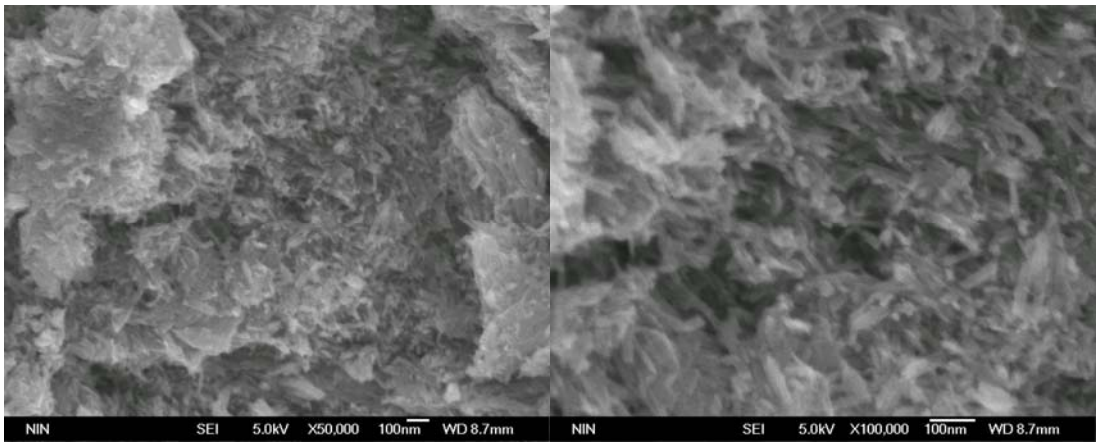

Fig. S2 SEM images of CdS/TNTs prepared by the one-step hydrothermal method.

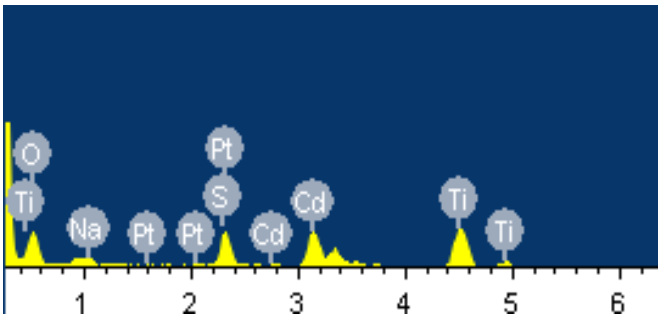

Fig. S3 EDX spectrum of 2.0 wt % Pt-loaded CdS/TNTs-0.05 sample.

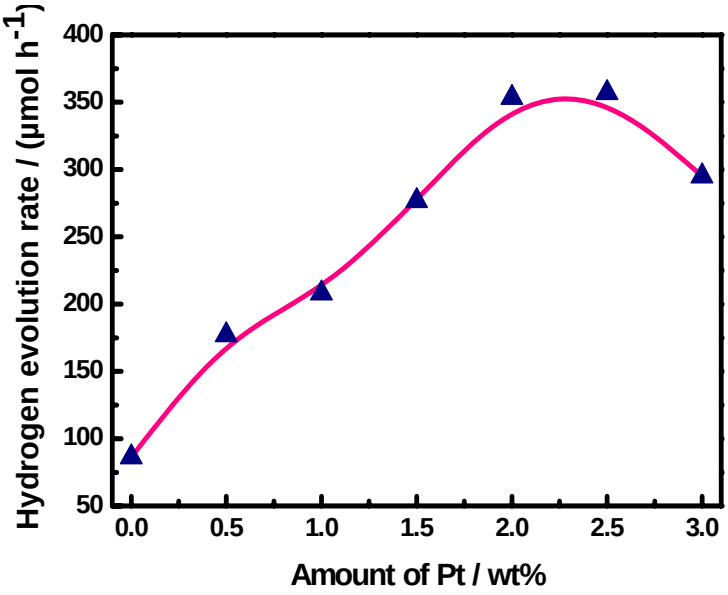

Fig. S4 Hydrogen evolution rates over CdS/TNTs-0.05 photocatalysts with different amounts of loaded Pt. Reaction conditions: catalyst, 0.2 g; 190 mL of aqueous solution containing 0.25 M Na_2SO_3/0.35 M Na_2S as sacrificial reagents; light source, 500 W Xe lamp equipped with a cutoff filter ($\lambda \geq 430$ nm).