Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Surface Plasmon Resonance Enhanced Direct Z-Scheme TiO_2/ZnTe/Au Nanocorncob Heterojunctions for Efficient Photocatalytic Overall Water Splitting

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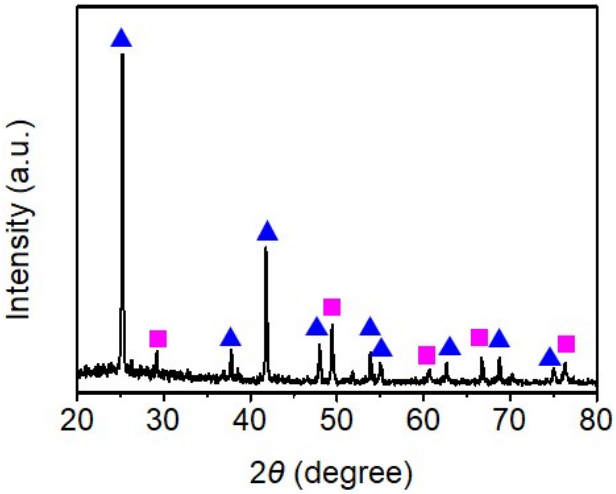

Fig. S1. XRD pattern of TiO_2/ZnTe/Au nanocorncobs after the photocatalytic water splitting of 72 h (Blue triangle and pink square signs represent TiO_2 and ZnTe, respectively).

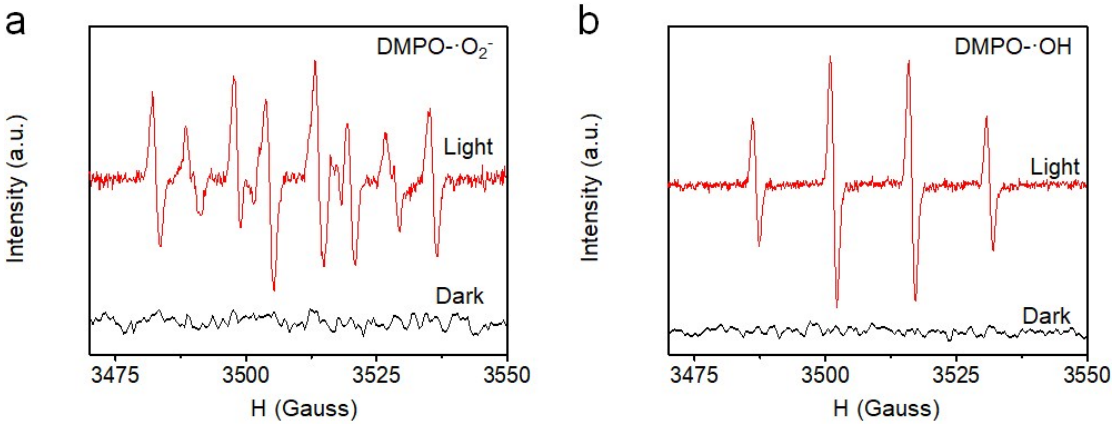

Fig. S2. ESR spectra of TiO_2/ZnTe/Au nanocorncobs with DMPO obtained under both dark and light illumination (a) in methanol to detect DMPO-·O_2^- radical species; (b) in aqueous suspension to detect DMPO-·OH radical species.

Table S1. Performance comparison of TiO_2/ZnTe/Au nanocorncobs for solar-to-hydrogen (STH) efficiency in photocatalytic water splitting testing with other nanostructural photocatalysts in the literatures.[S1−S6]

Ref.	Electrocatalyst	Incident light	STH efficiency (%)
This work	TiO_2/ZnTe/Au nanocorncobs	Solar simulator (AM 1.5)	0.98
S1	Te/SnS_2/Ag nanoleaves	Solar simulator (AM 1.5)	0.49
S2	NCN/CDs-1000	Solar simulator (AM 1.5)	0.1
S3	CDots-C_3N_4	Solar simulator (AM 1.5)	2.0
S4	Mesoporous carbon nitride	Natural sunlight irradiation	0.12
S5	$SrTiO_3$:La,Rh/C/BiVO_4:Mo	Simulated sunlight irradiation	1.0
S6	SrTiO3:La,Rh/Au/BiVO4:Mo sheet	Visible light (419 nm)	1.1

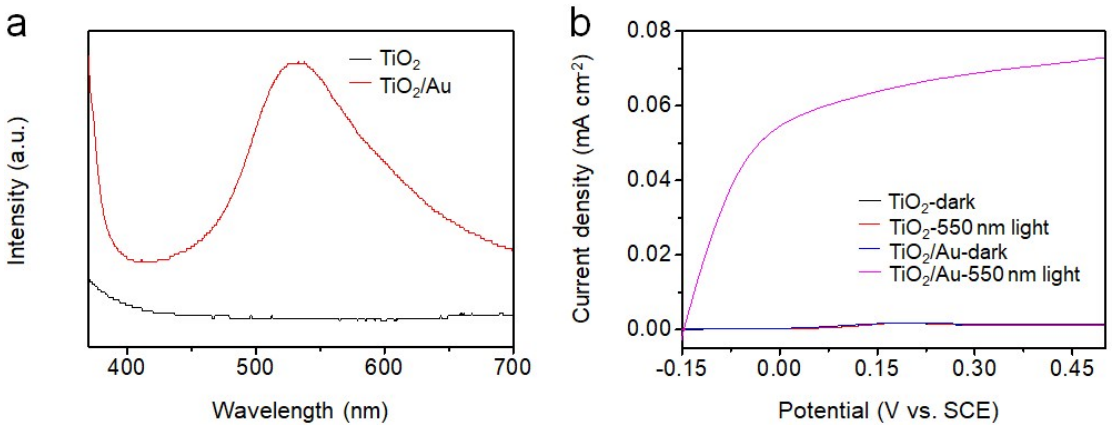

Fig. S3. (a) UV-Vis spectra of TiO_2 nanowires and TiO_2/Au nanowires at the range of 370-700 nm, respectively. (b) Linear sweep voltammetry measurements of TiO_2 nanowires and TiO_2/Au nanowire photoanodes under dark and light illumination of a 300 W Xe-lamp irradiation (350-800 nm, 96 mW·cm^{-2}) coupled with a 550 nm monochromatic light optical filter at a scan rate of 50 mV s^{-1}.

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