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多组分纳米纤维体系中载流子动力学的有效级联调制及其高效光催化产氢性能研究

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Effective Cascade Modulation of Charge-Carriers Kinetics in the Well-Designed Multi-Component Nanofiber System for Highly-Efficient Photocatalytic H_2 Generation

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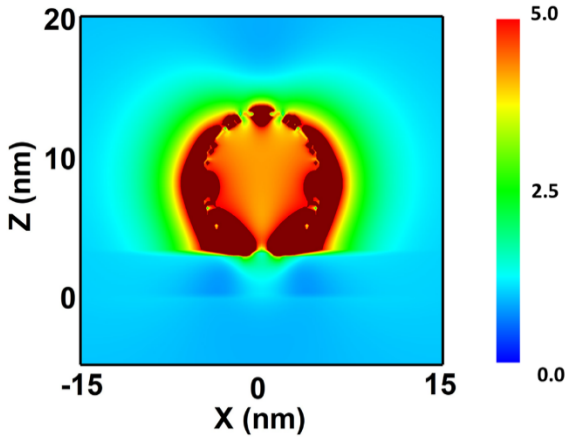

Fig. S1 Electric field distribution between the interface of Ag NP and g-C_3N_4 NS.

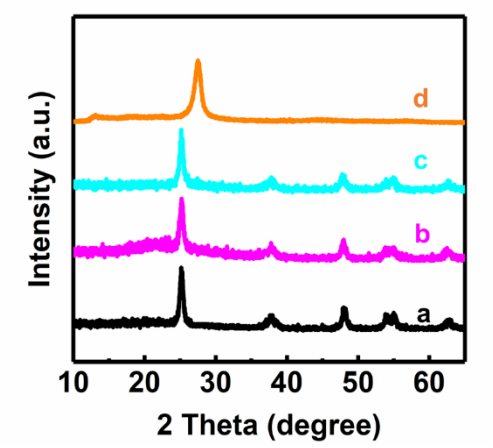

Fig. S2 XRD patterns of the as-synthesized samples: (a) TiO_2 NFs, (b) Ag/Ag_2S/g-C_3N_4/ TiO_2-5 HNFs, (c) Ag/Ag_2S/g-C_3N_4/TiO_2-30 HNFs and (d) C_3N_4 NSs.

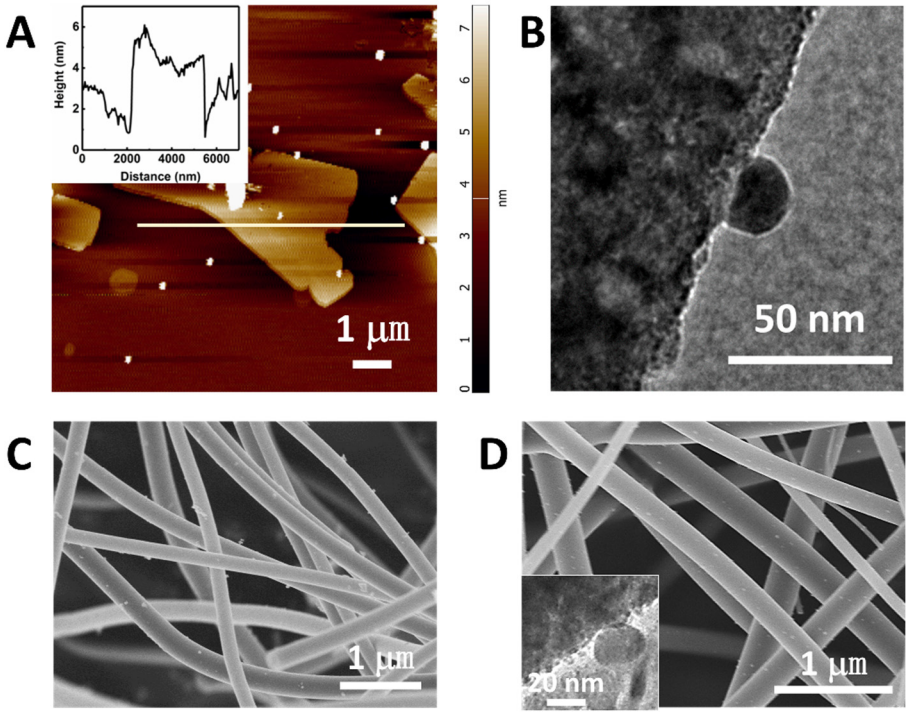

Fig. S3 (A) Atomic force microscopy (AFM) image of g-C_3N_4 NSs; TEM and SEM images of (B) Ag/g-C_3N_4/TiO_2 HNFs; (C) Ag/Ag_2S/g-C_3N_4/TiO_2-5 HNFs and (D) Ag/Ag_2S/g-C_3N_4/TiO_2-30 HNFs.

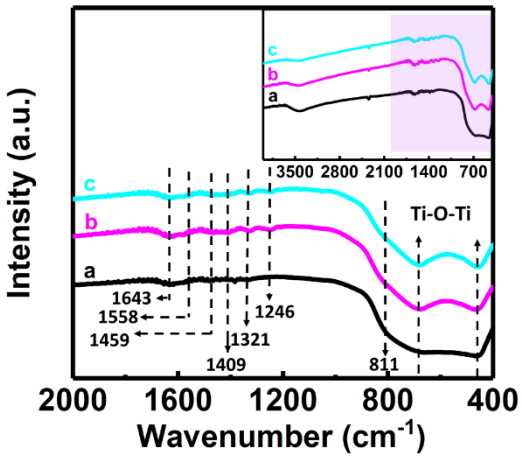

Fig. S4 FT-IR spectra of the as-synthesized samples: (a) TiO_2 NFs, (b) Ag/Ag_2S/g-C_3N_4/TiO_2-5 HNFs and (c) Ag/Ag_2S/g-C_3N_4/TiO_2-30 HNFs.

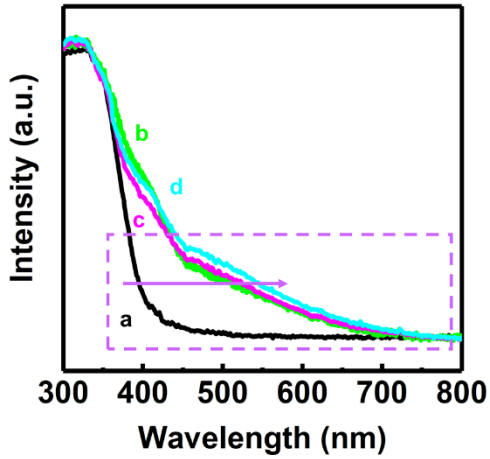

Fig. S5 UV-Vis absorption spectra of the as-synthesized samples: (a) TiO_2 NFs, (b) Ag/g-C_3N_4/TiO_2 HNFs, (c)Ag/Ag_2S/g-C_3N_4/TiO_2-5 HNFs and (d) Ag/Ag_2S/g-C_3N_4/TiO_2-30 HNFs.

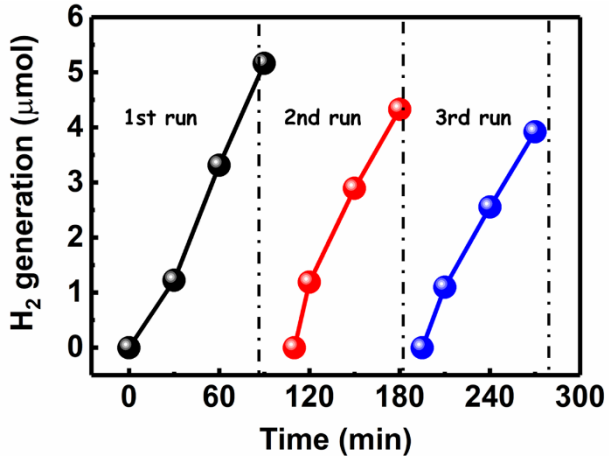

Fig. S6 Cycling test of photocatalytic H_2 generation for the Ag/Ag_2S/g-C_3N_4/TiO_2-15 NFs.

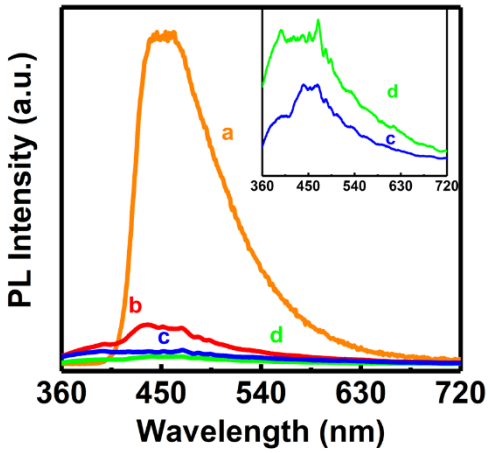

Fig. S7 Steady-state PL spectra of the as-synthesized samples: (a) g-C_3N_4 NSs, (b) g-C_3N_4/TiO_2 HNFs, (c) Ag/g-C_3N_4/TiO_2 HNFs and (d) Ag/Ag_2S/g-C_3N_4/TiO_2-15 HNFs.

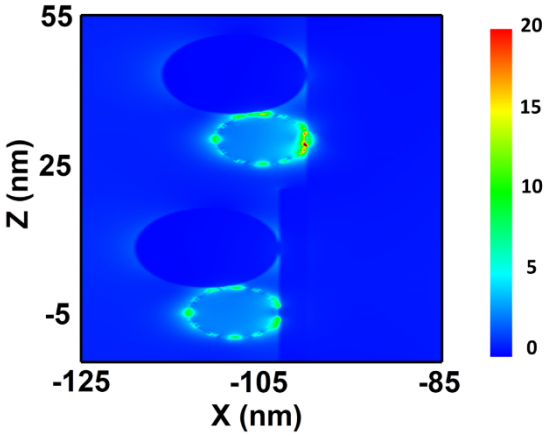

Fig. S8 Electric-field distribution of the Ag/Ag_2S/g-C_3N_4/TiO_2 HNFs

Table S1 The atomic ratios of Ti, Ag and S in the as-synthesized samples.

Sample	Element (%)				
	Ti	Ag	S	Ag/Ti	S/Ag
Ag/g-C_3N_4/TiO_2	22.65	0.21	–	0.93	–
Ag/Ag_2S/g-C_3N_4/TiO_2-5	23.30	0.18	0.04	0.77	22.22
Ag/Ag_2S/g-C_3N_4/TiO_2-15	28.69	0.19	0.07	0.66	36.84
Ag/Ag_2S/g-C_3N_4/TiO_2-30	28.34	0.21	0.13	0.74	61.90