

Supporting Information

**Nickel nitride modified cadmium sulfide nanorods with
enhanced visible light photocatalytic H₂ evolution**

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Sample	Ni (wt%)/ ICP-AES data	Ni₃N (wt%)/ Calculated based on Cu
N1	1.07	1.15
N2	1.50	1.62
N3	4.50	4.86
N4	7.56	8.16
N5	10.71	11.56

Table S1. Nickel and Ni₃N contents in Ni₃N/CdS photocatalyst samples.

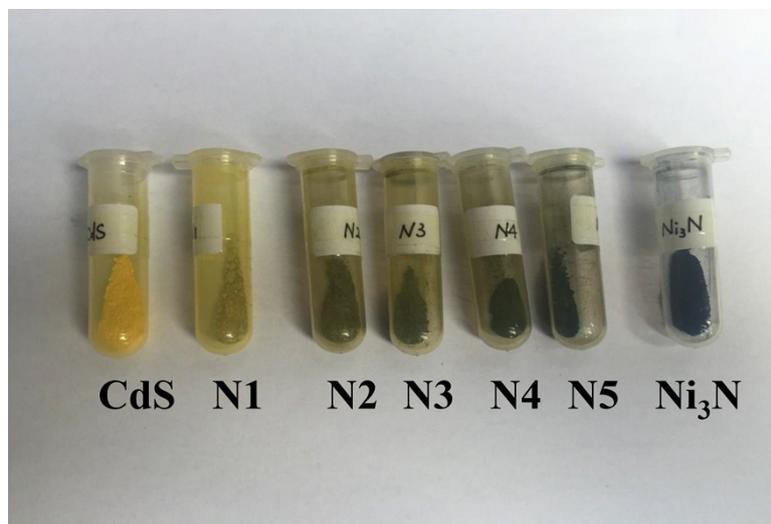


Figure S1. The picture of CdS, Ni₃N/CdS and Ni₃N samples.

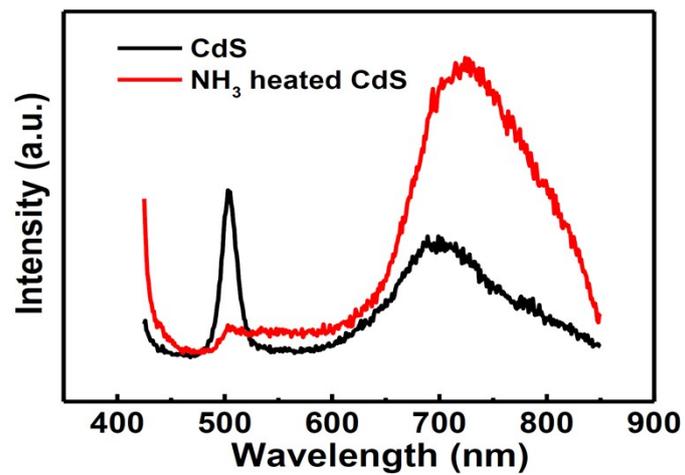


Figure S2. PL spectra of CdS and CdS heated under NH₃.

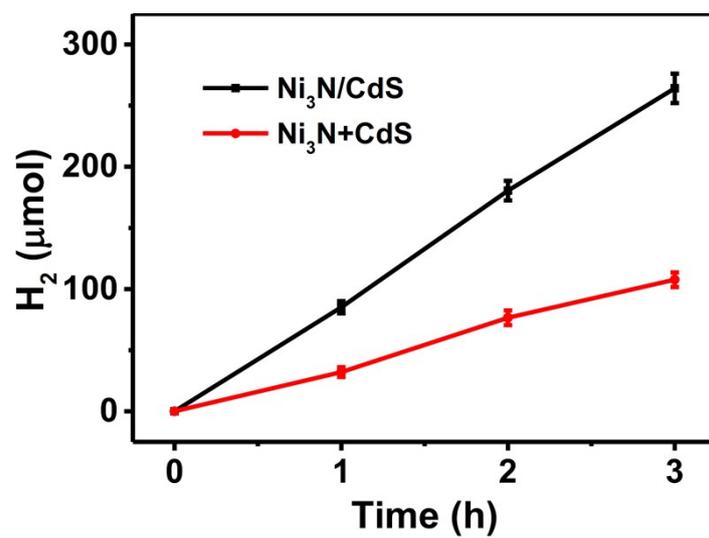


Figure S3. Comparison of photocatalytic H₂ production activity of mixed Ni₃N+CdS and N3 sample in 0.25 M Na₂S/0.35 M Na₂SO₃ solution.

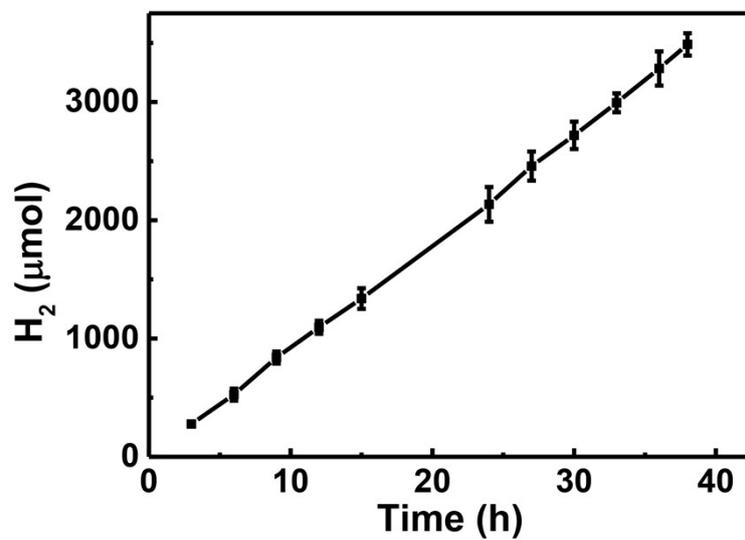


Figure S4. Long-term visible light irradiation using 1.0 mg N3 sample in 0.25 M Na₂S/0.35 M Na₂SO₃ solution.

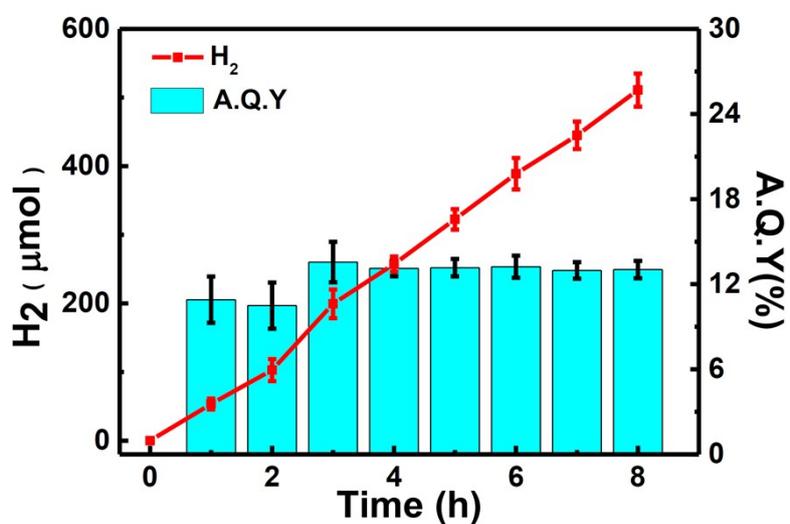


Figure S5. Time courses of H₂ production and apparent quantum yield on 1.0 mg N3 samples in 0.75 M Na₂S/1.05 M Na₂SO₃ aqueous solution under 420 nm monochromatic light irradiation.

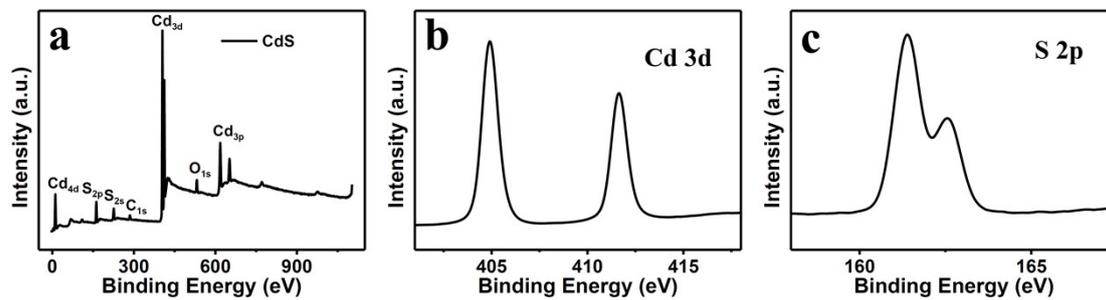


Figure S6. (a) XPS survey spectrum and high-resolution XPS spectra of (b) Cd 3d, (c) S 2p of the CdS sample.

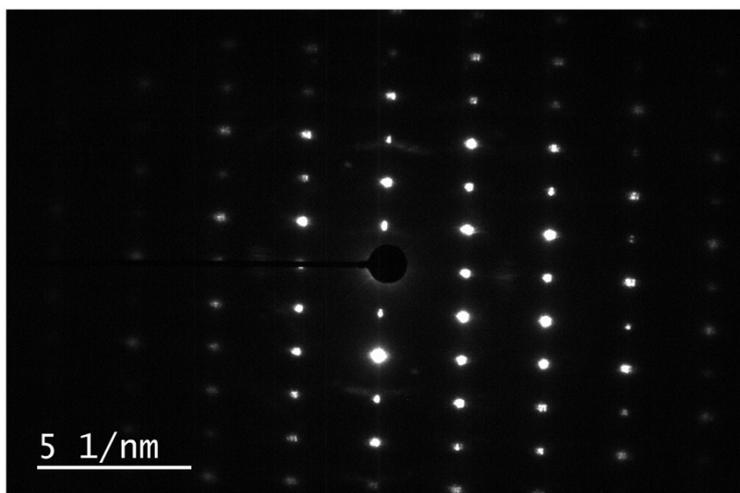


Figure S7. Selected area electron diffraction (SAED) data of the N3 samples.

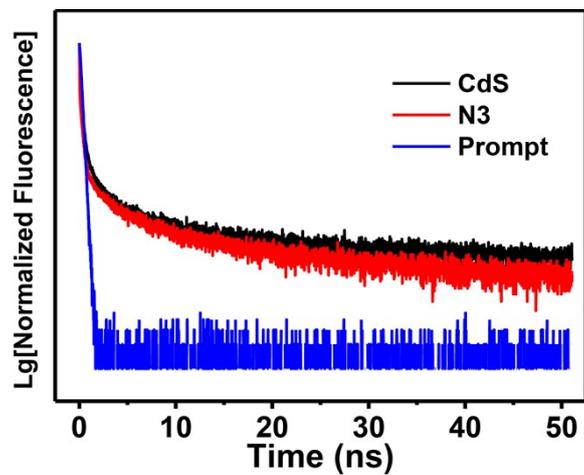


Figure S8. TRPL spectra of the CdS and N3 samples.