

Synergetic effect of N, S-codoped carbon and CoO_x nanodots derived from ZIF-67 as highly efficient cocatalyst over CdS nanorods

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The two authors contribute the same.

Table S1. Elemental compositions of C, S, N, O and Co elements in the CoO_x@N, S-C

Element	C	S	N	O	Co
Atomic Concentration %	43.0	14.7	25.6	6.8	9.9

Table S.2 Biexponential decay parameters for emission decay of CdS and CoO_x@N, S-C/CdS

Samples	a1	τ1(ns)	a2	τ2(ns)	<τ>(ns)
CdS	0.056	0.519	0.0027	7.827	3.6089
CoO _x @N, S-C/CdS	0.066	0.443	0.0015	5.545	1.5753

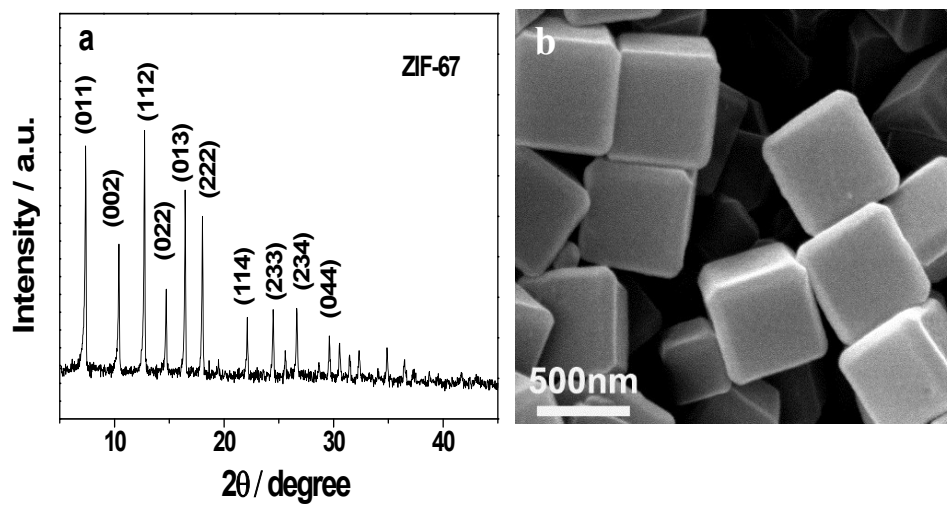


Fig. S1 XRD patterns and SEM images of as-prepared ZIF-67

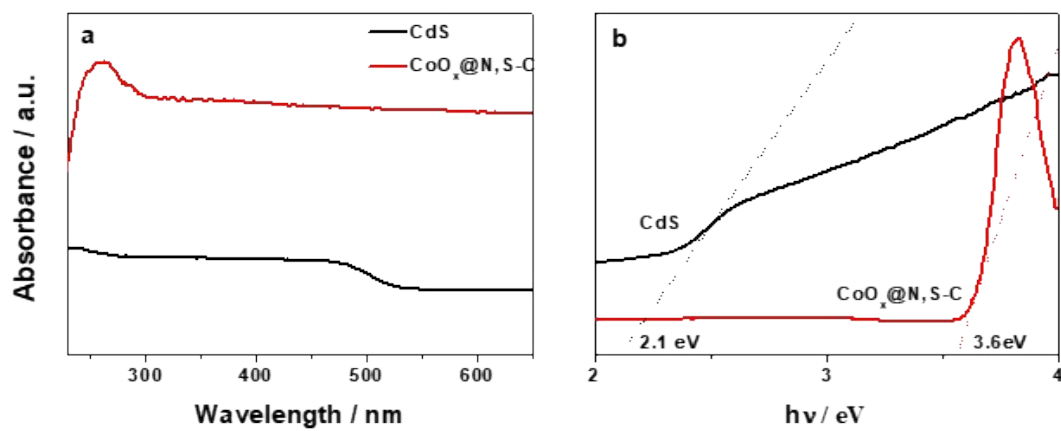


Fig. S2 UV-Vis spectra (a) and corresponding Tauc plots (b) of CoO_x@N, S-C and CdS

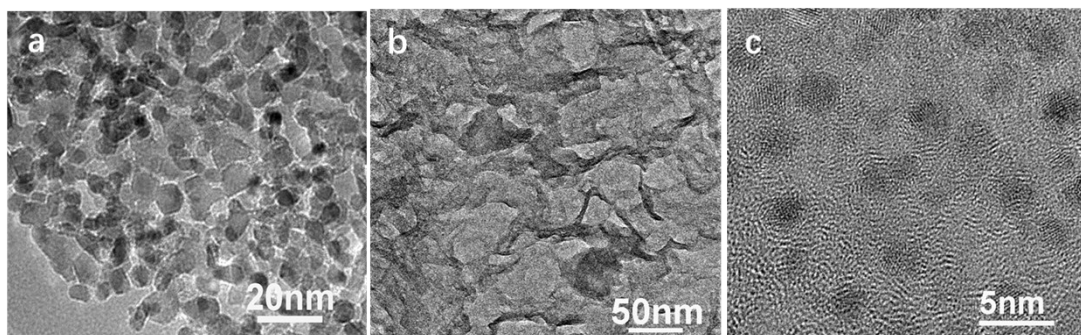


Fig. S3 TEM images of (a) CoO_x , (b) N, S-C and (c) $\text{CoO}_x@\text{N}$, S-C

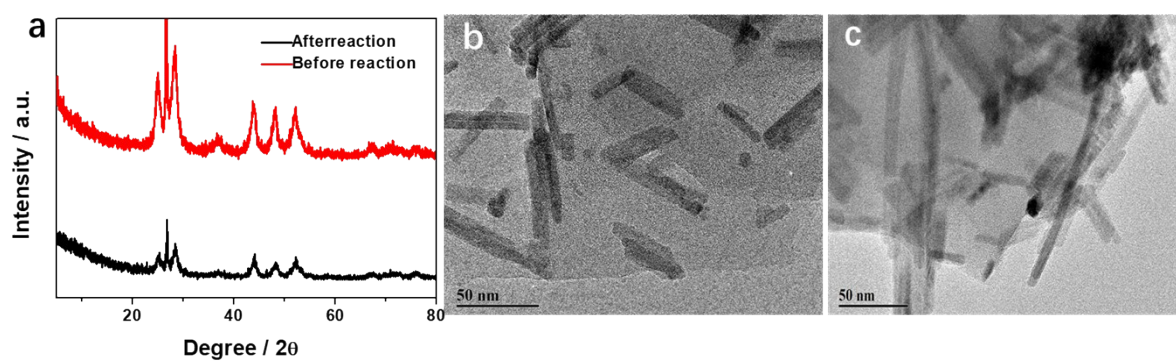


Fig. S4 Comparison of (a) XRD patterns and (b, c) TEM images of $\text{CoO}_x@\text{N}$, S-C/CdS photocatalyst before and after photocatalytic experiment reaction

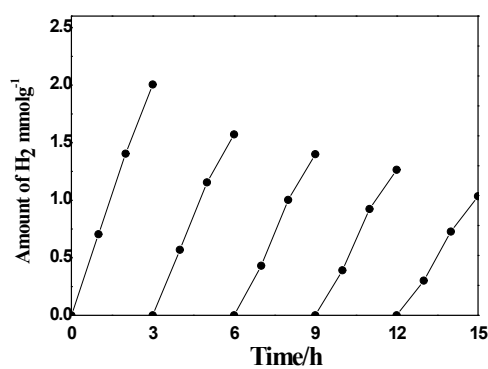


Fig. S5 Cycle test on pure CdS suspended in 50 mL water containing lactic acid (10 % V/V) aqueous solution bubbled with Ar per 3h under irradiation of visible light