Supporting information

A dual-mode colorimetric/photoelectrochemical sensing platform derived from the decomposition of CuHPT for glutathione detection

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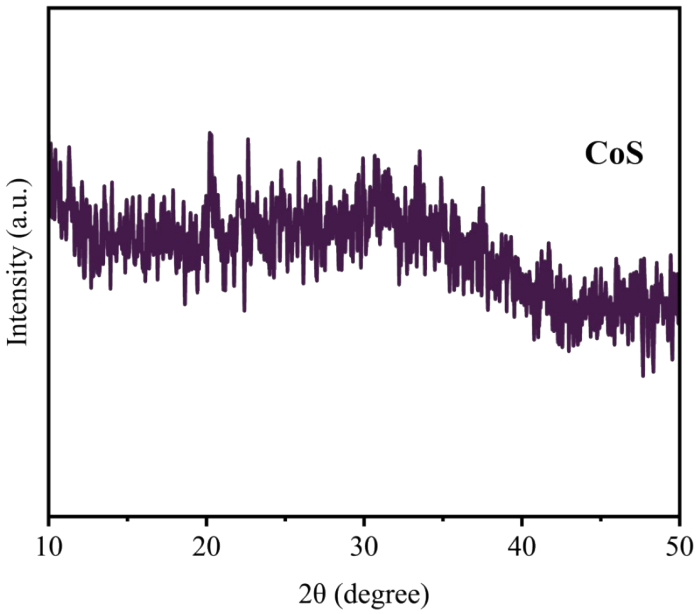

Fig. S1 XRD pattern of CoS.

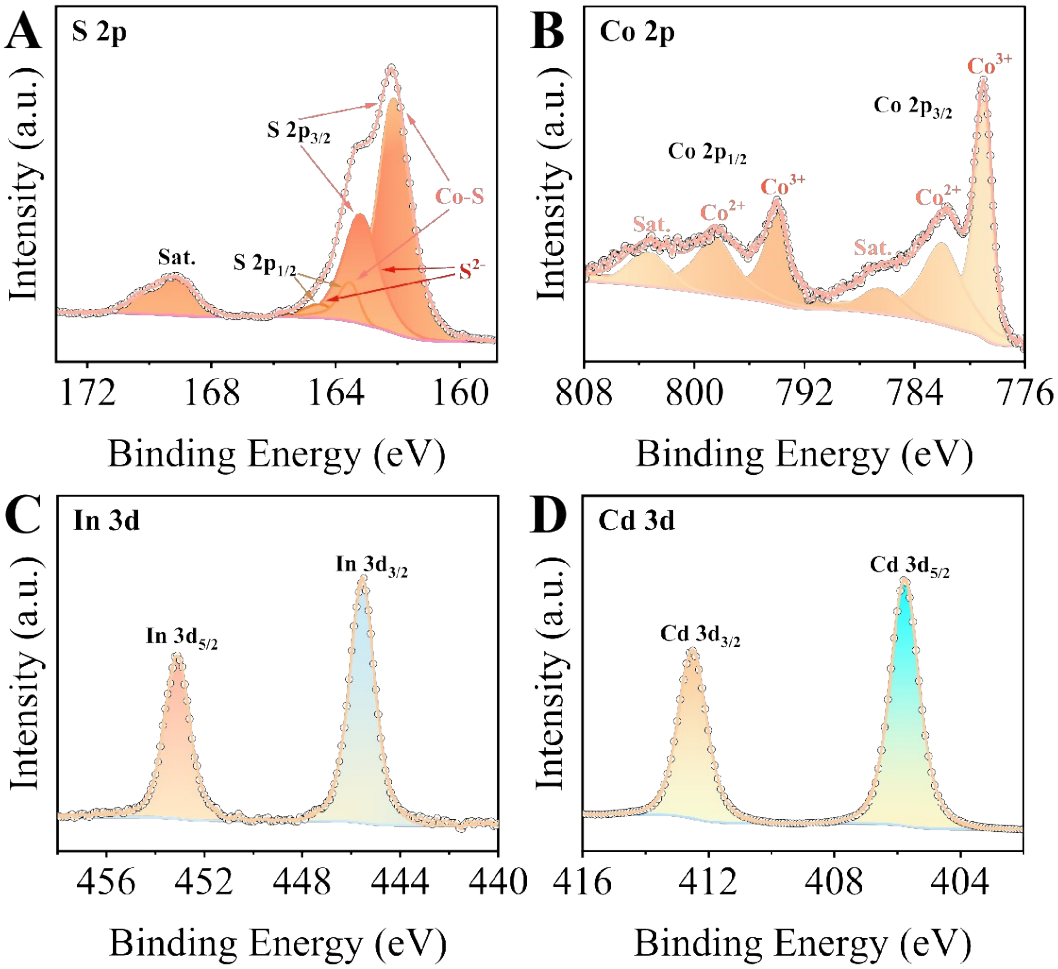

Fig. S2 High-resolution XPS spectrum of (A) S 2p, (B) Co 2p, (C) In 3d and (D) Cd 3d in the prepared samples, respectively.

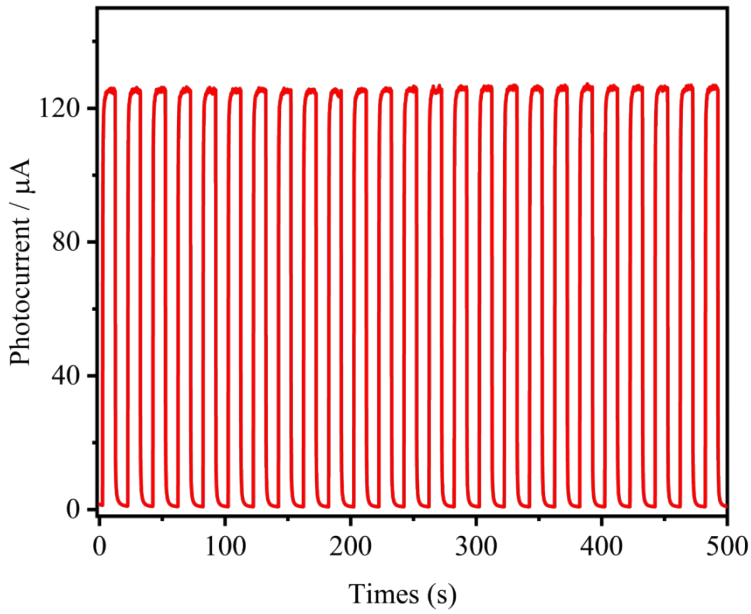

Fig. S3 Photocurrent response curve of CoS/In-CdS (2 mg/mL) with 500s.

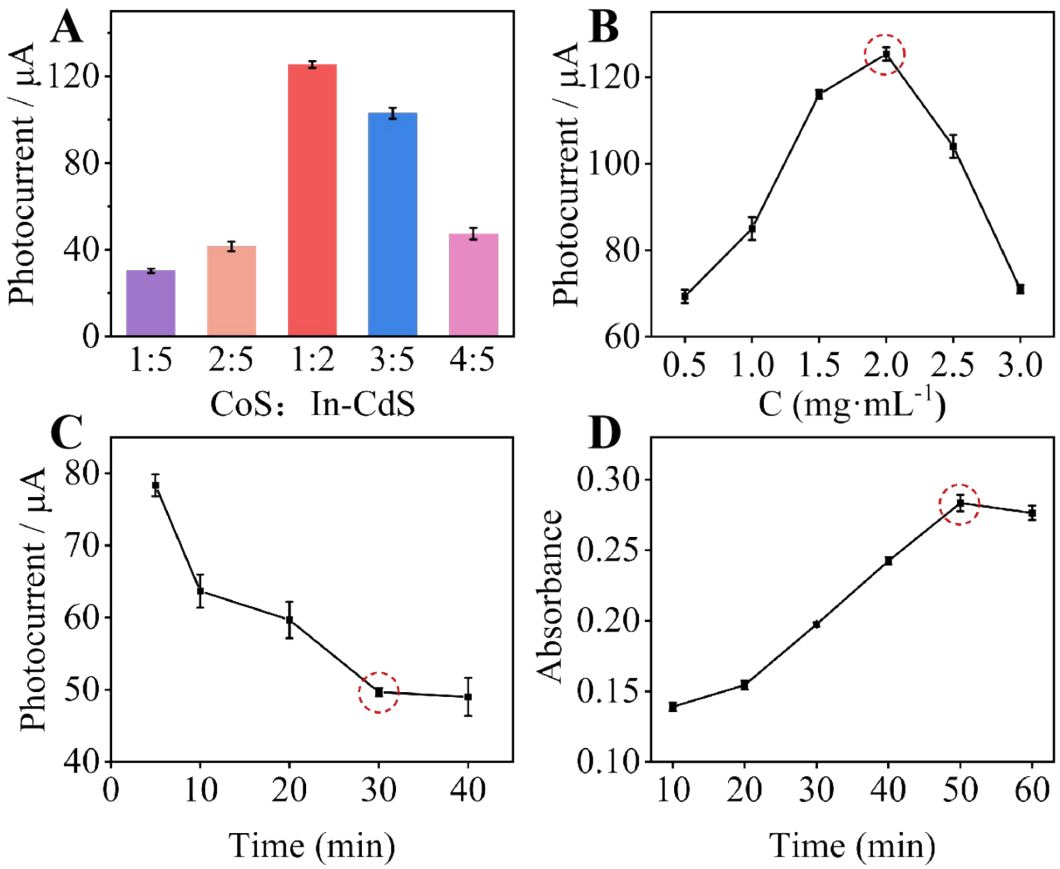

Fig. S4. Effects of (A) weight ratio between CoS and In-CdS on the photocurrent response, The optimization of (B) the CoS/In-CdS concentration, (C) 100 μM GSH incubation time on the PEC sensor. (D) The optimization of TMB + H_2O_2 + CuHPT + GSH (1 mM) absorbance at different incubation times. Error bars represented standard deviations (n = 3).

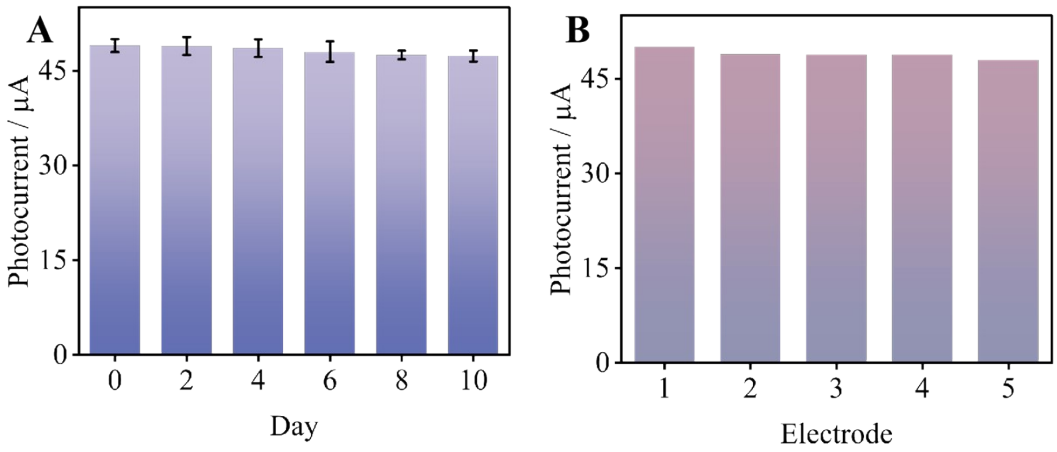

Fig. S5 (A) Storage stability of PEC sensor, (B) Reproducibility of PEC sensor. Error bars represented standard deviations (n = 3).

Table S1 Comparison of different GSH detection methods.

Method	Detection limit (μM)	Liner range (μM)	Reference
PEC	3.21	5-80	[1]
PEC	2.83	5-200	[2]
PEC	0.82	1-100	[3]
ECL	0.9	5-200	[4]
ECL	0.44	1-200	[2]
Colorimetric	7.00	20-460	[5]
Colorimetric	0.23	0.5-60	[6]
Fluorometric	0.48	1-300	[7]
Fluorometric	0.20	10-25	[8]
PEC	0.11	0.5-800	This work
Colorimetric	18	50-1200	This work

Table S2 Colorimetric determination of GSH content in human serum..

Samples	Added (μM)	Found (μM)	Recovery (%)	RSD (%)
1	200	202.73	101.4	3.5
2	300	288.43	96.1	3.0
3	400	412.70	103.2	4.5

Table S3 Photoelectrochemical determination of GSH content in human serum

Samples	Added (μM)	Found (μM)	Recovery (%)	RSD (%)
1	0	6.36		2.2
2	10	15.74	93.8	2.0
3	25	31.76	101.6	1.6
4	50	54.62	96.5	1.2

References

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