Supporting Information

Fe_2O_3/g-C_3N_4/CdS photocatalyst for complete sunlight-active detoxification of tetracycline antibiotic

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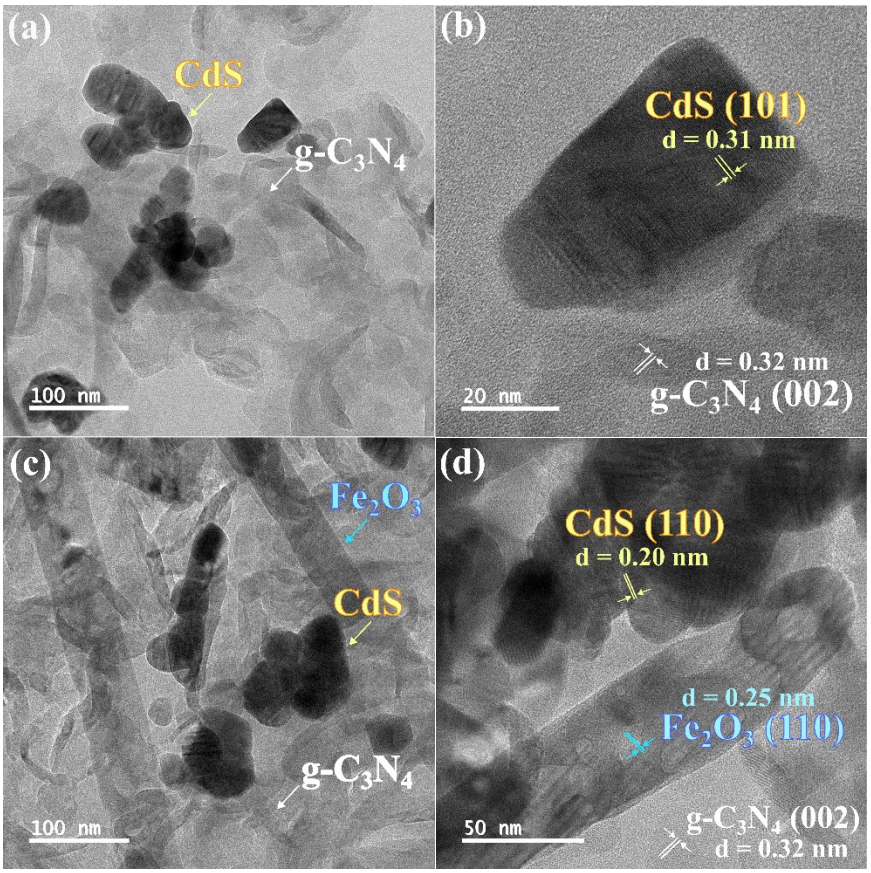

Fig. S1. TEM and HR-TEM images of g-C_3N_4/CdS (a-b) and 0.10Fe_2O_3/g-C_3N_4-CdS photocatalyst (c-d).

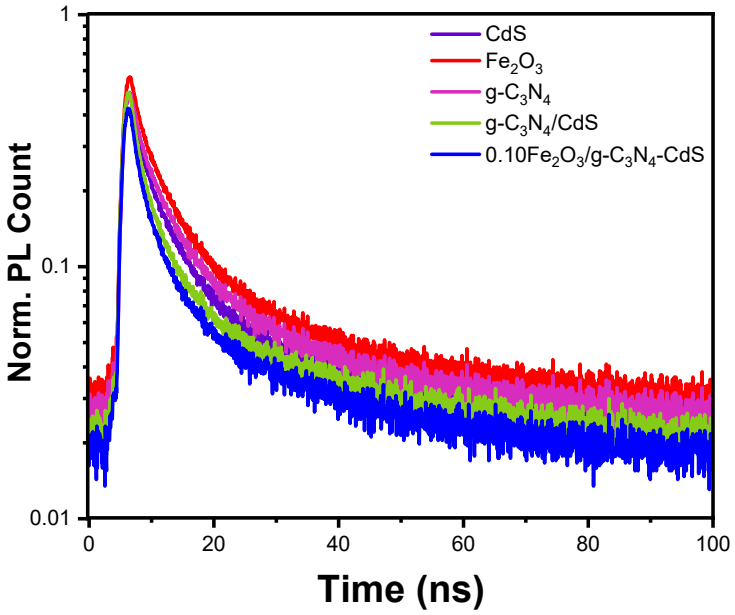

Fig. S2 TRPL spectra of the prepared photocatalysts.

The amplitude-weighted average lifetime (τ_{Ave}) for charge carriers generated on the photocatalyst upon light illumination, and such value is calculated based on the following equation via substitution with the fitting parameters deduced from the TRPL results:

$$\tau_{Ave} = \frac{A_1\tau_1 + A_2\tau_2}{A_1 + A_2}$$

Where τ_1 and τ_2 are the lifetimes of radiative and non-radiative actions that occurred after the excitation process, respectively, and A_1 and A_2 are the pre-exponential factors.

Table S1 Kinetic parameters derived from the Time-resolved PL decay spectra.

Photocatalyst	τ_1 (ns)	τ_2 (ns)	τ_{ave} (ns)
CdS	1.8358	9.3138	5.26
Fe_2O_3	2.9806	12.3053	6.40
g-C_3N_4	2.6285	12.5369	5.48
g-C_3N_4/CdS	1.9806	9.3053	4.89

0.10Fe_2O_3/g-C_3N_4/CdS	1.6285	10.5369	4.78

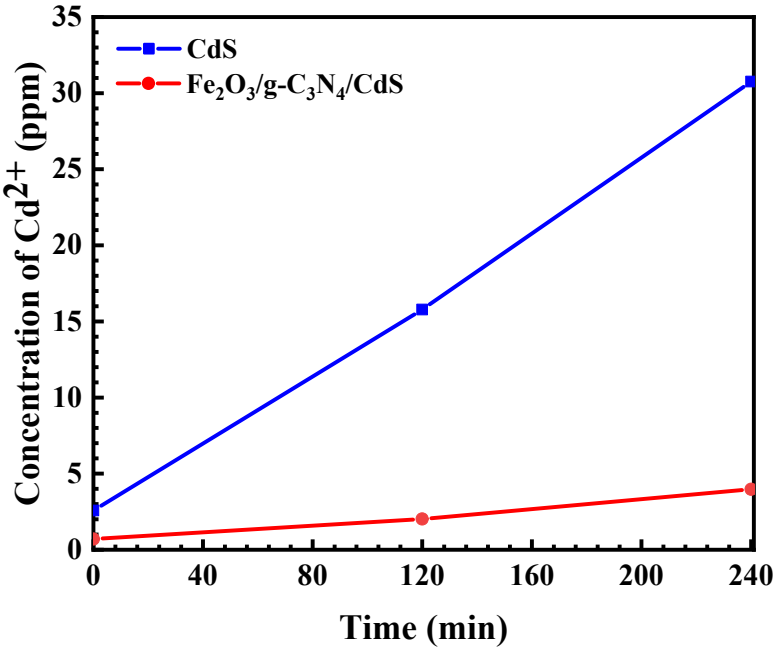

Fig. S3 Monitoring the Cd^{2+} detected in the TC solution in the presence of the prepared photocatalysts.