

Supporting information

Ligand exchange and stability of CdTe nanoplatelets under mild conditions

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Difference in precursors	Cd(prop), mmol	Cd(pr op), g	OA, μmol	OA, μl	ODE, ml	Degassing		Injection				Time of synth., min
						Temp.	Time, min	Top-Te, mkl	ODE, ml	V, total	Temp. Inj.=synth.	
Standard	0.5	0.13	0.25	80	10	110 ⁰ C	30	100	0.5	600	170 ⁰ C	20
+50% Cd	0.75	0.195	0.25	80	10	110 ⁰ C	30	100	0.5	600	170 ⁰ C	20
-50% Cd	0.25	0.065	0.25	80	10	110 ⁰ C	30	100	0.5	600	170 ⁰ C	20
+50% Te	0.5	0.13	0.25	80	10	110 ⁰ C	30	150	0.5	650	170 ⁰ C	20
-50 % Te	0.5	0.13	0.25	80	10	110 ⁰ C	30	50	0.5	550	170 ⁰ C	20

Table S1. Protocol for the synthesis of CdTe nanoplatelets

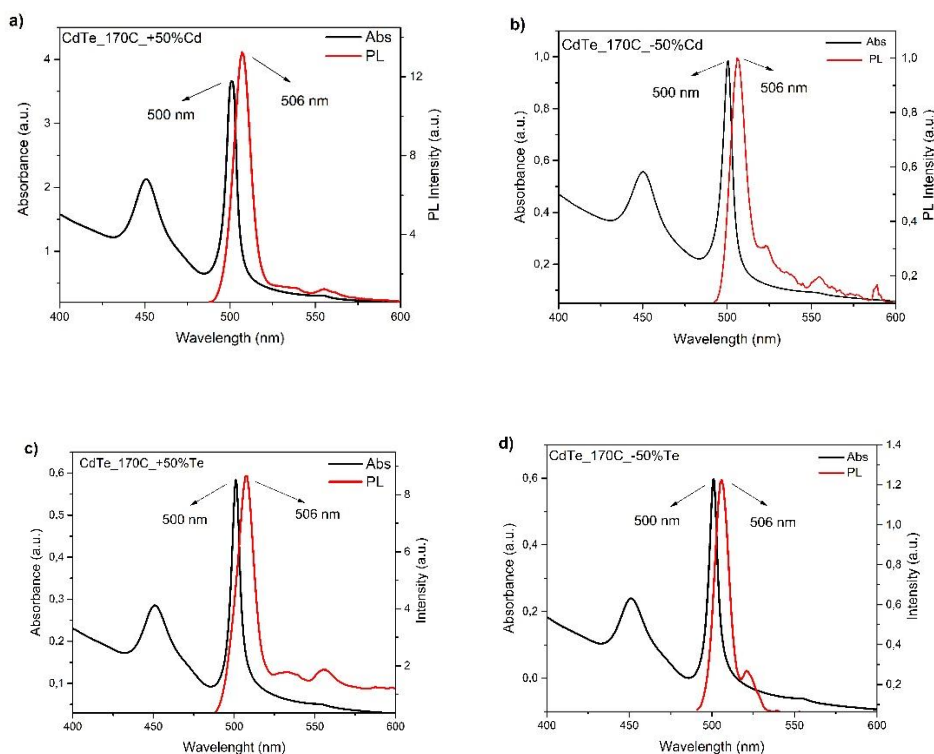


Figure S1. Absorption and luminescence spectra obtained on a Solar CM2203 and Jasco V770 spectrophotometer

The spectra in Fig. S1 indicate that the measurements performed one year earlier were reliable and reproducible, compare with newly repeated measurements on FLS1000 (except instrumental artefact observed near 525 nm).

In Fig. S2 the absorption spectrum of the another stage of ligand exchange experiments which was conducted using zinc diethyldithiocarbamate is shown.

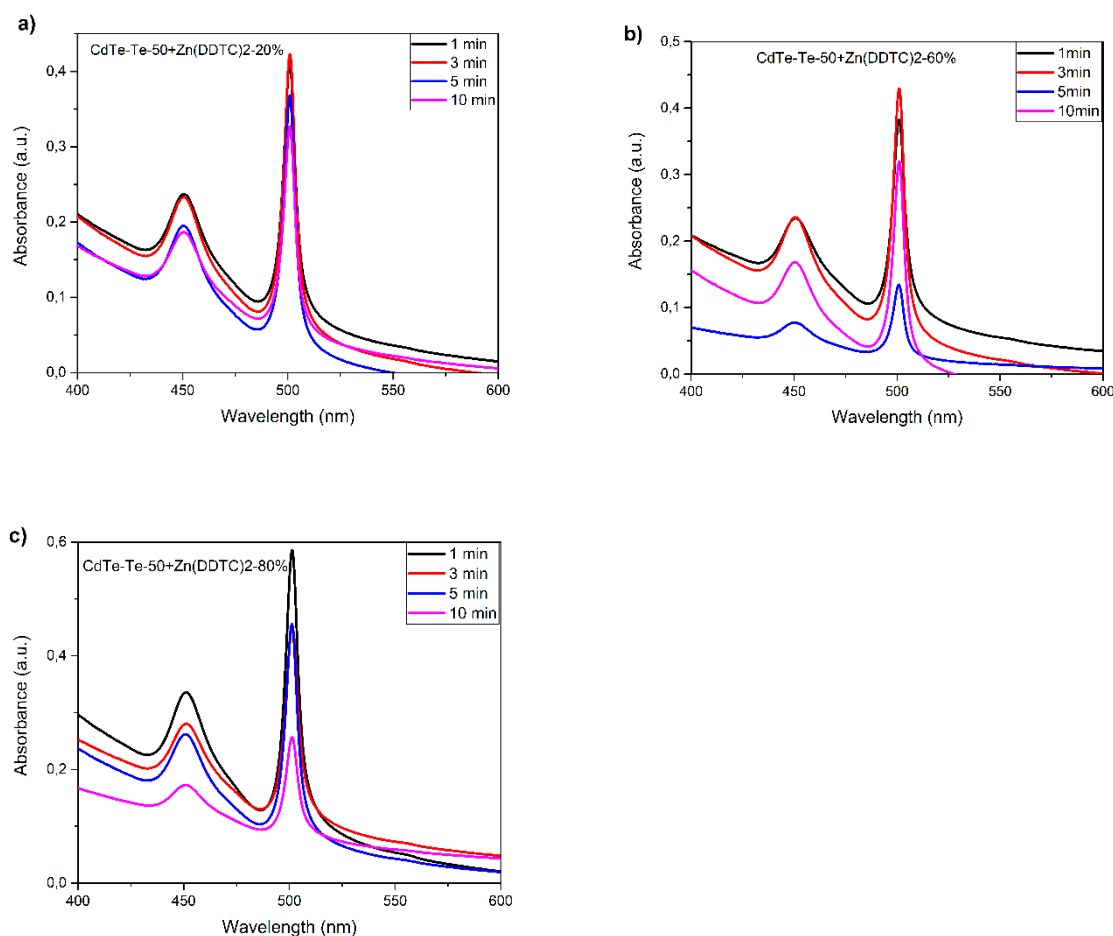


Figure S2. Absorption spectra of nanoplatelets with zinc diethyldithiocarbamate ligand in different ratios: a) 20%; b) 60%; c) 80%.

Figure S2 shows the absorption spectra of CdTe NPLs before and after the introduction of a $\text{Zn}(\text{DDTC})_2$ solution at different time intervals. A pair of exciton maxima in the 450–500 nm range exhibits stability in their position and intensity over time, indicating the absence of significant changes in the band structure and thickness of the nanoplatelets. The lack of a noticeable effect on exciton transitions, even with increasing ligand concentration, suggests that, under mild organic conditions, $\text{Zn}(\text{DDTC})_2$ barely replaces the initial cadmium-carboxylate ligands on the CdTe NPL surface and is unable to form a durable X-type dithiocarbamate coating.

Purification	Mass (Cd), ng	Mass (Te), ng	Ratio of elemets
1 stage	260.77	283.05	0.92
2 stage	327.0	356.7	0.92

Table S2. TXRF data table after first and second purification stages