Ligand Surface Density Decreases with Quantum Rod Aspect Ratio

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SUPPORTING INFORMATION

SUPPORTING TABLE

Table S1. Summary of nanomaterial morphological dimensions, emission wavelength, and the extracted 2D NMR values.

Systems		Aspect Ratio (*l*/*w*)	Length (nm)	Width (nm)	log D_{ave} (m^2/s)	LD (nm^{-2})	log $T_{1,\,ave}$ (s)	ΔT_1 (s)	Emission Wavelength (nm)
CdSe	*(d)*	1.0	3.0 ± 0.4		-10.03	2.21	-0.43	0.85	550
	(r)	1.7 ± 0.3	10.1 ± 1.8	5.9 ± 0.9	-10.29	4.81	-0.32	0.41	660
	(r)	2.4 ± 0.5	8.5 ± 1.7	3.5 ± 0.5	-9.56	4.92	-0.38	0	611
	(r)	4.8 ± 0.7	27.5 ± 2.4	5.8 ± 0.7	-9.36	1.27	-0.42	0	656
	(r)	5.2 ± 1.0	26.7 ± 3.4	5.2 ± 0.6	-9.35	0.57	-0.19	0.06	645
CdSe/CdS	(*r/r*)	7.5 ± 1.5	33.0 ± 4.9	4.7 ± 0.6	-9.69	0.24	-0.23	0.04	663
	(*d/r*)	11.7 ± 2.7	34.0 ± 3.9	3.0 ± 0.5	-9.32	0.23	-0.01	-0.08	589

d = dot, *r* = rod, *r/r* = rod-in-rod, *d/r* = dot-in-rod

SUPPORTING FIGURES

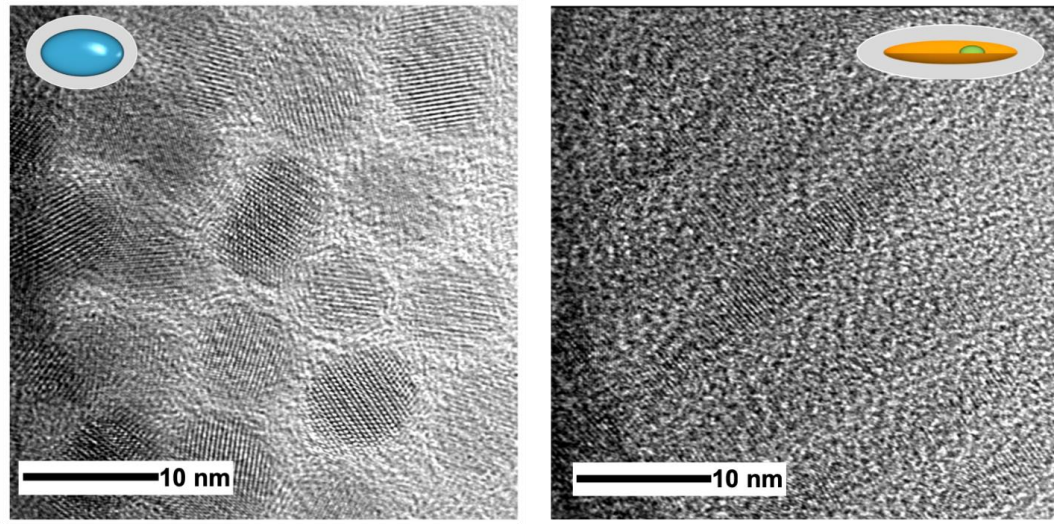

Figure S1. HRTEM micrographs of CdSe at *l*/*w* = 1.7 and *d*/*r*-CdSe/CdS at *l*/*w* = 11.7.

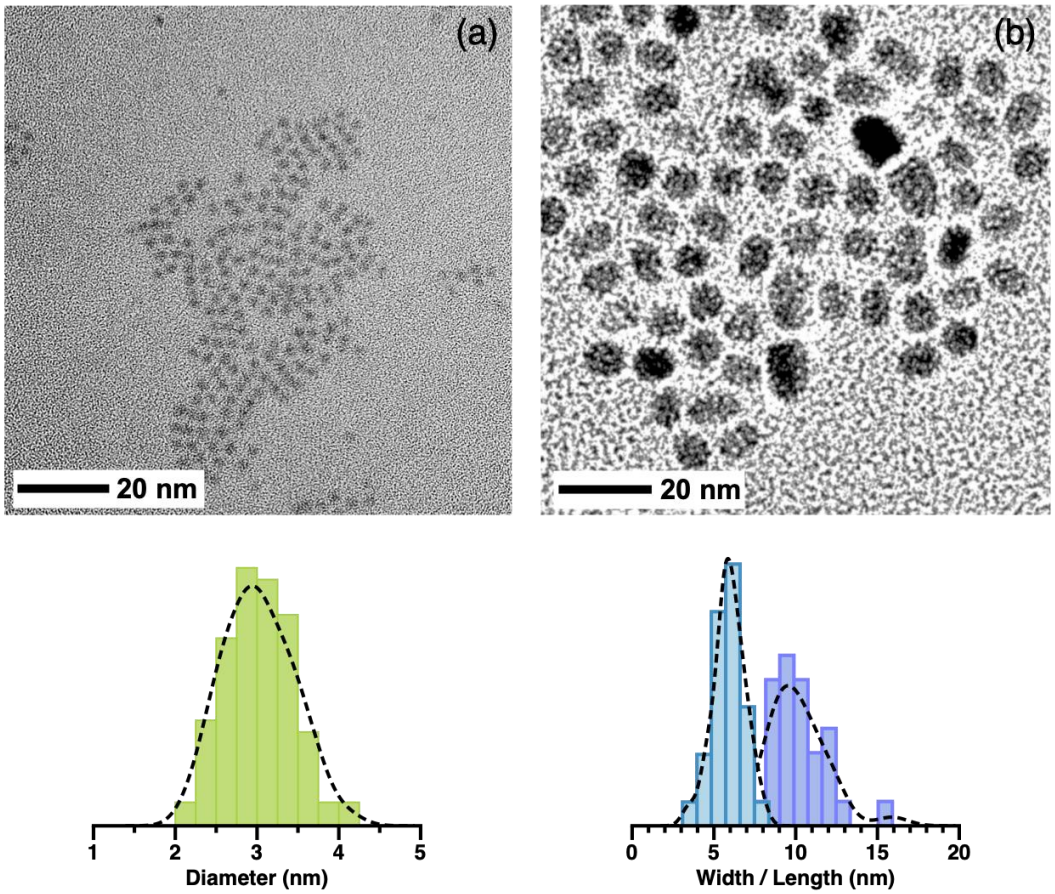

Figure S2. Additional TEM micrographs (top) of CdSe at *l*/*w* = 1.0 (a) and 1.7 (b) with statistical analysis (bottom).

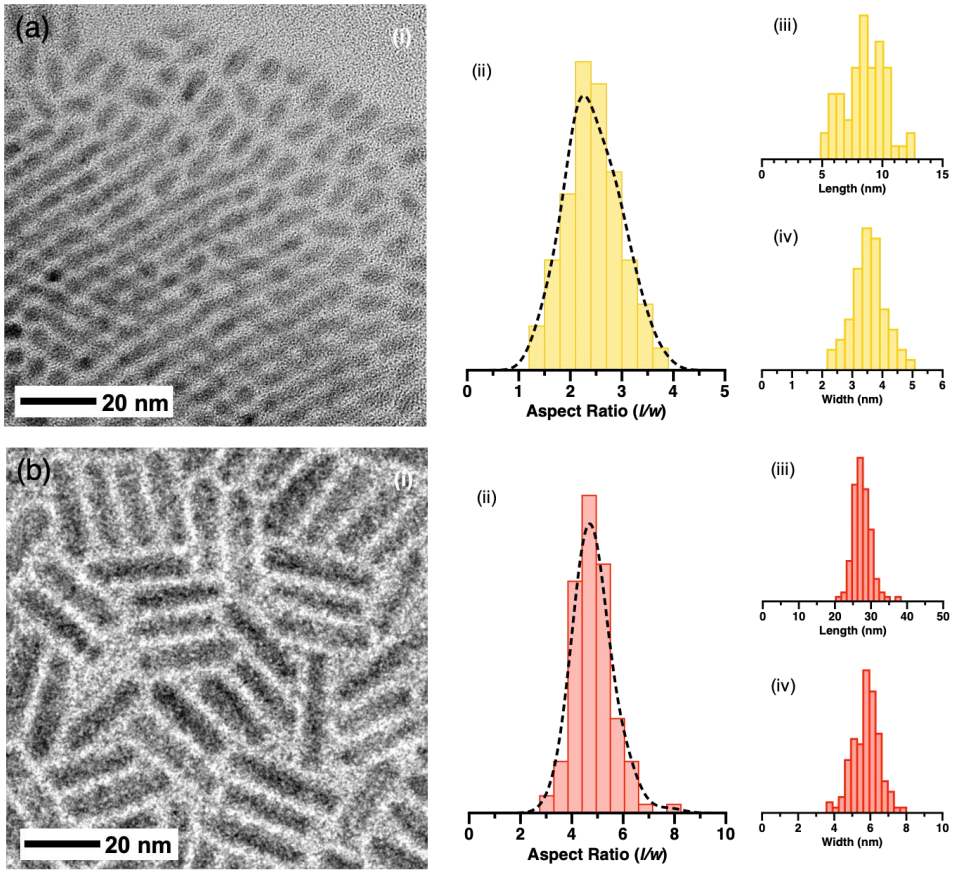

Figure S3. Additional TEM micrographs (i) of CdSe at *l*/*w* = 2.4 (a) and 4.8 (b) with statistical analysis (ii-iv).

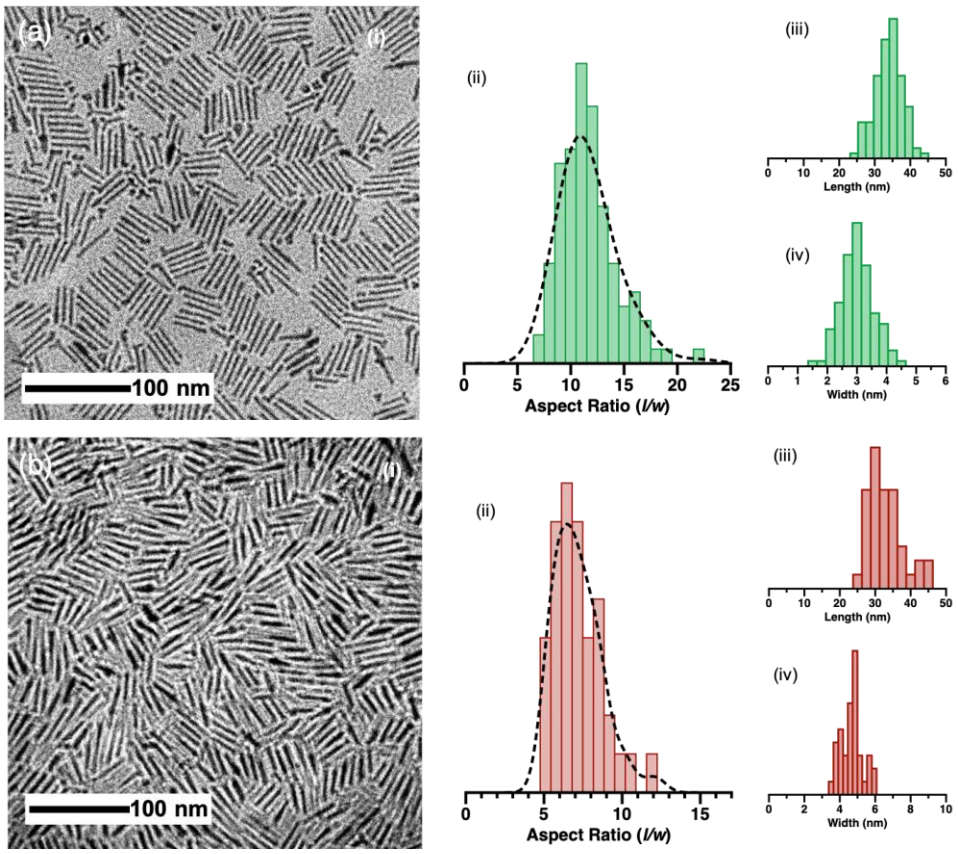

Figure S4. Additional TEM micrographs (i) of *d/r*-CdSe/CdS (a) and *r/r*-CdSe/CdS (b) with statistical analysis (ii-iv).

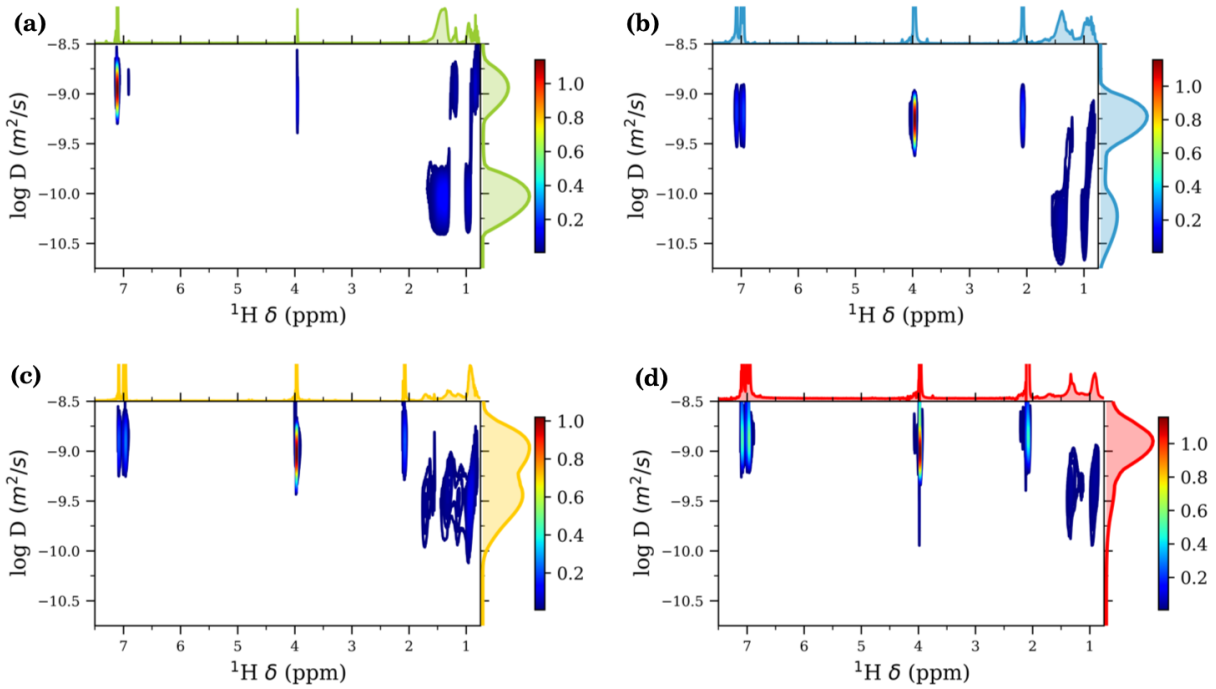

Figure S5. Full DOSY results for PA-capped CdSe at *l*/*w* = 1.0 (a), 1.7 (b), 2.4 (c), and 4.8 (d).

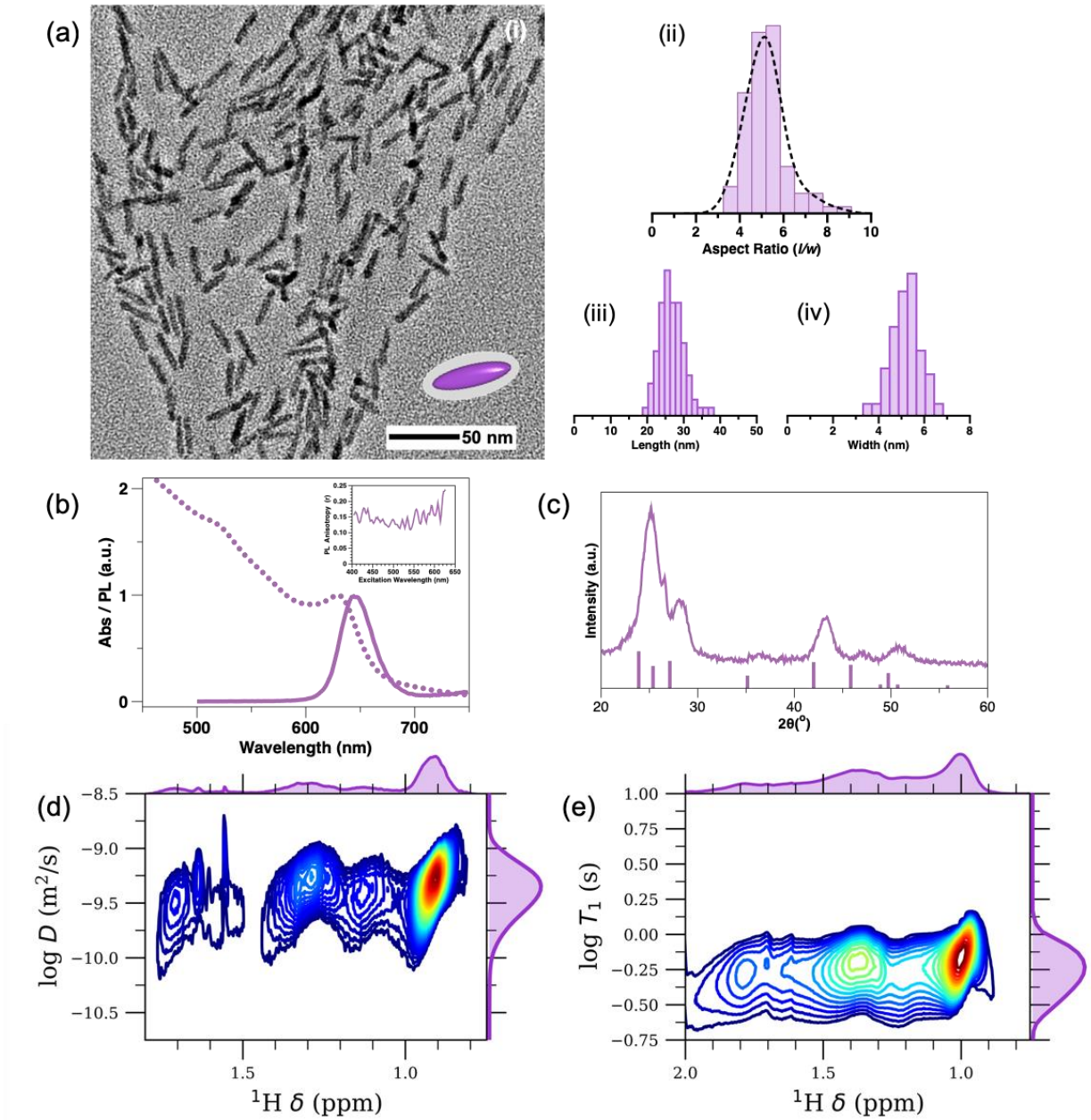

Figure S6. Representative TEM micrograph (a) with statistical analysis (ii-iv)., normalized UV-Vis absorption, PL emission and PL anisotropy spectra (b), XRD (c), 2D DOSY (d) and ROSY (e) NMR plots for CdSe with higher *l/w* of 5.2 (l = 26.7 ± 3.4 nm, w = 5.2 ± 0.6 nm).

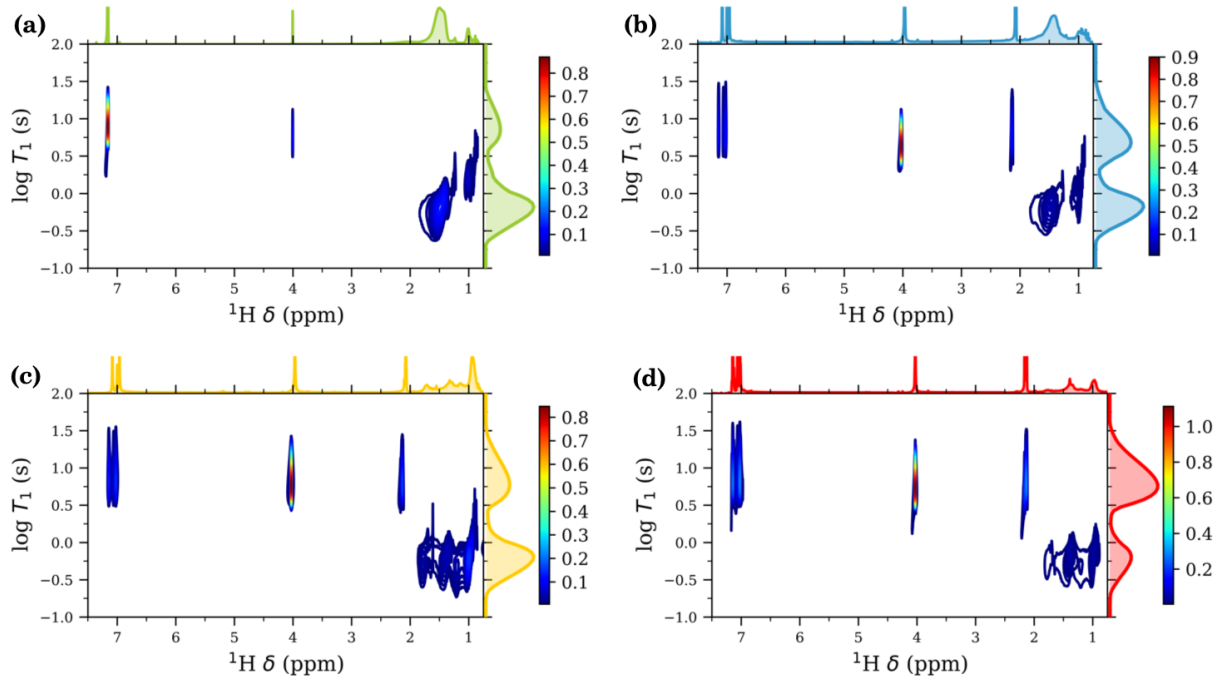

Figure S7. Full ROSY results for PA-capped CdSe at *l*/*w* = 1.0 (a), 1.7 (b), 2.4 (c), and 4.8 (d).

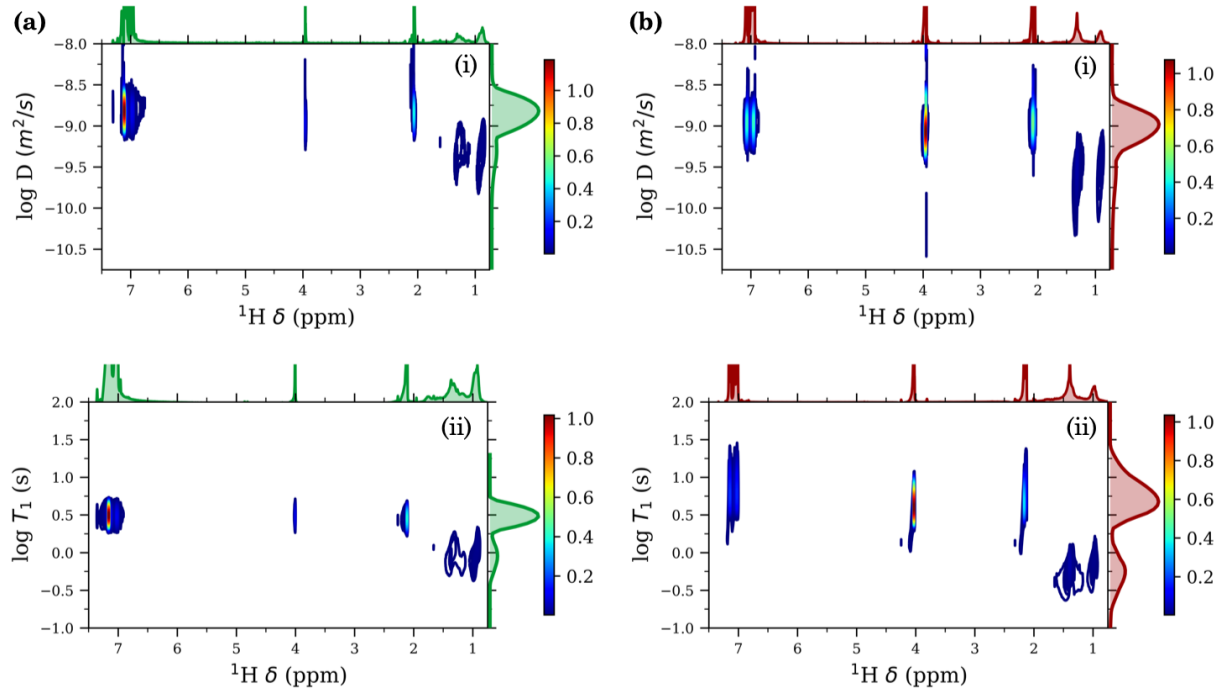

Figure S8. Full DOSY (i) and ROSY (ii) results for *d*/*r*-CdSe/CdS at *l*/*w* = 11.7 (a) and *r*/*r*-CdSe/CdS at *l*/*w* = 7.5 (b).

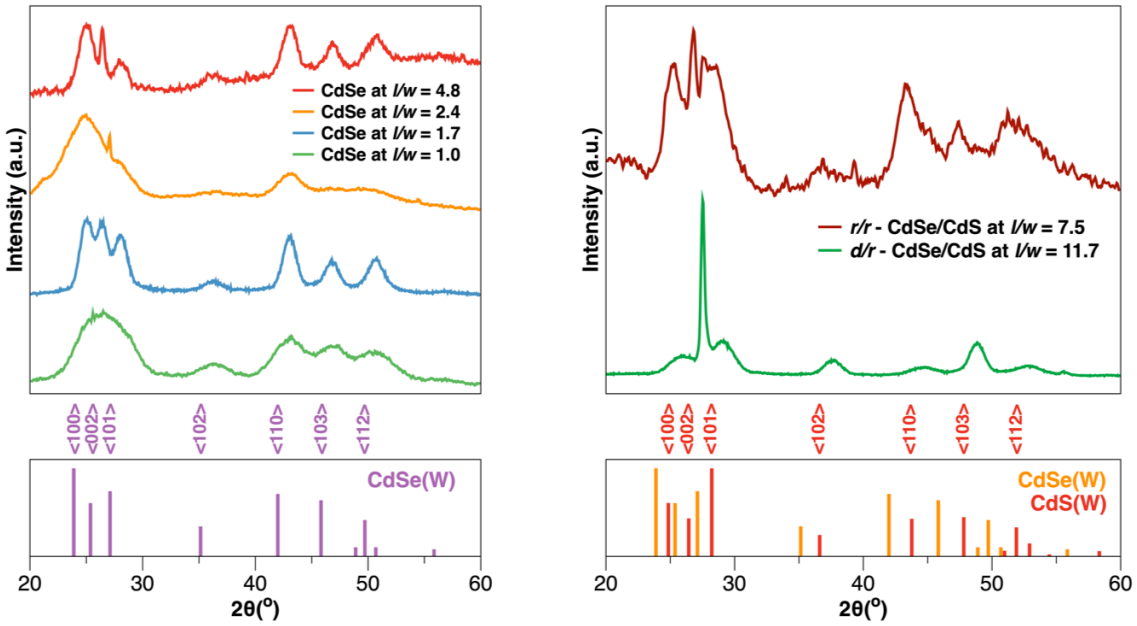

Figure S9. Representative XRD spectra for CdSe at *l*/*w* = 1.0, 1.7, 2.4, and 4.8, *d*/*r*-CdSe/CdS at *l*/*w* = 11.7 and *r*/*r*-CdSe/CdS at *l*/*w* = 7.5 with standards of Wurtzite CdSe and CdS.