Supporting Information:

Molecule-Like CdSe Nanoclusters Passivated with

Strongly Interacting Ligands: Energy Level

Alignment and Photoinduced Ultrafast Charge

Transfer Processes

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Figure S.1: Absorption spectrum of PDTC in water.

Figure S.2: TA spectrum of DDA-coated CdSe SCNCs in DCM pumped at 388 nm. Upper left panel: decay dynamics at 540 nm probe wavelength. Red curve shows a fit to biexponential decay. Lower right panel: TA spectrum at 0.5 ps delay time.

Figure S.3: Absorption spectra of 2.9 nm diameter CdSe QDs before (blue, λ_{max} = 541 nm) and after PDTC exchange (red, λ_{max} = 578 nm). The spectra were taken at room temperature. The red-shift and broadening of the absorption spectrum indicates exciton delocalization from the QD to the ligand monolayer.¹

References

- (1) Koole, R.; Liljeroth, P.; de Mello Donegá, C.; Vanmaekelbergh, D.; Meijerink, A. Electronic coupling and exciton energy transfer in CdTe quantum-dot molecules. *J. Am. Chem. Soc.* **2006**, *128*, 10436–10441.