Supporting Information for:

Suppressed Carrier Scattering in CdS-encapsulated PbS Nanocrystal Films.

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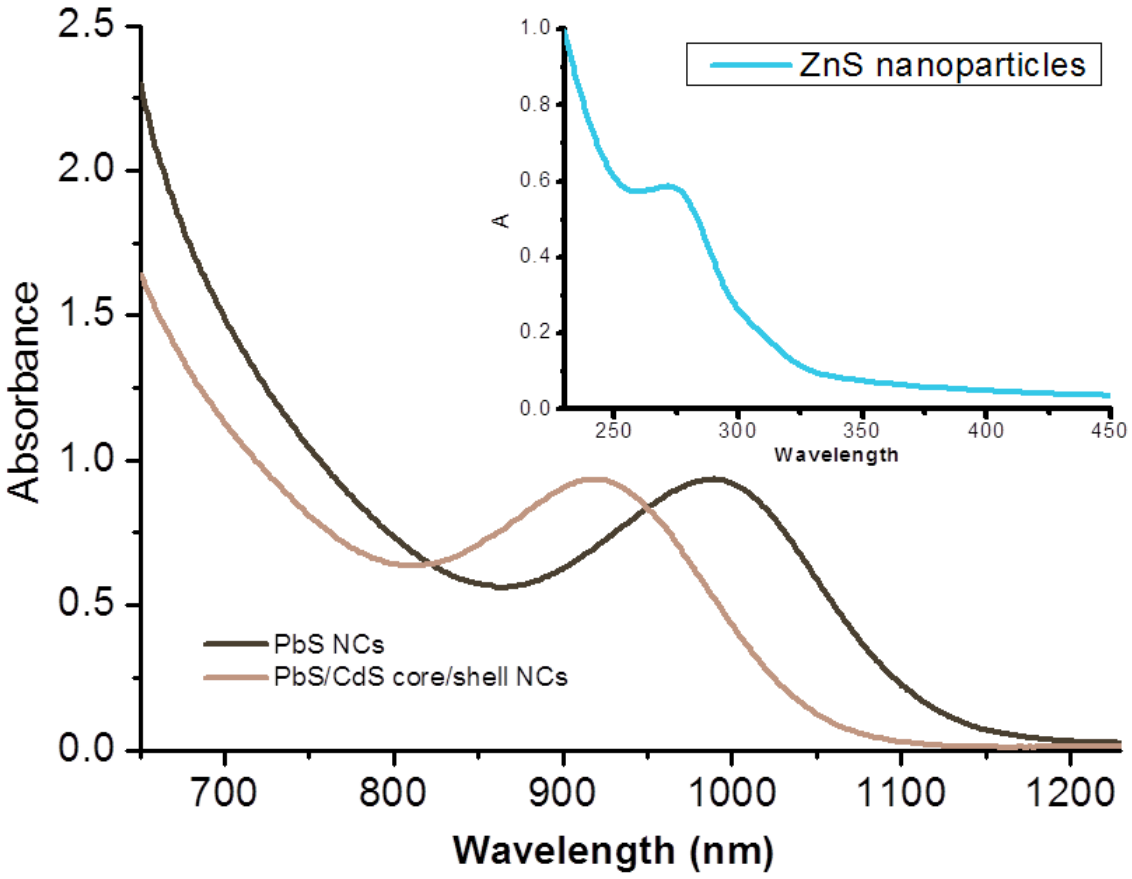

Figure SF1: Absorbance of the 3.2-nm PbS NCs (black) and 3.2-nm PbS/CdS core/shell NCs (brown curve) featuring 3.0 nm core diameter. The insert shows the absorbance of ZnS NCs in octane.

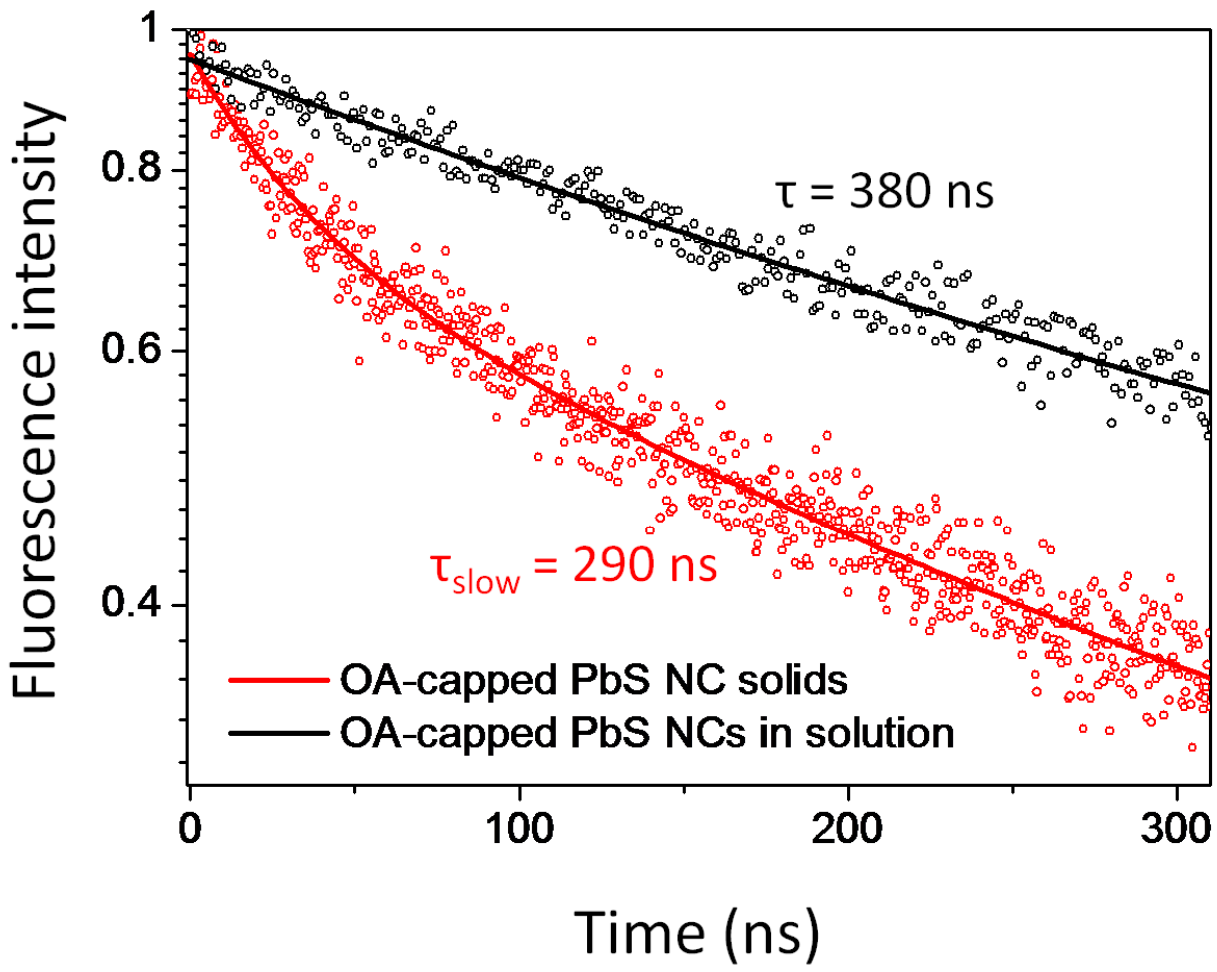

Figure SF2: FL intensity decay of oleic acid-capped PbS nanocrystals in solution (black) and in a solid (red) forms.

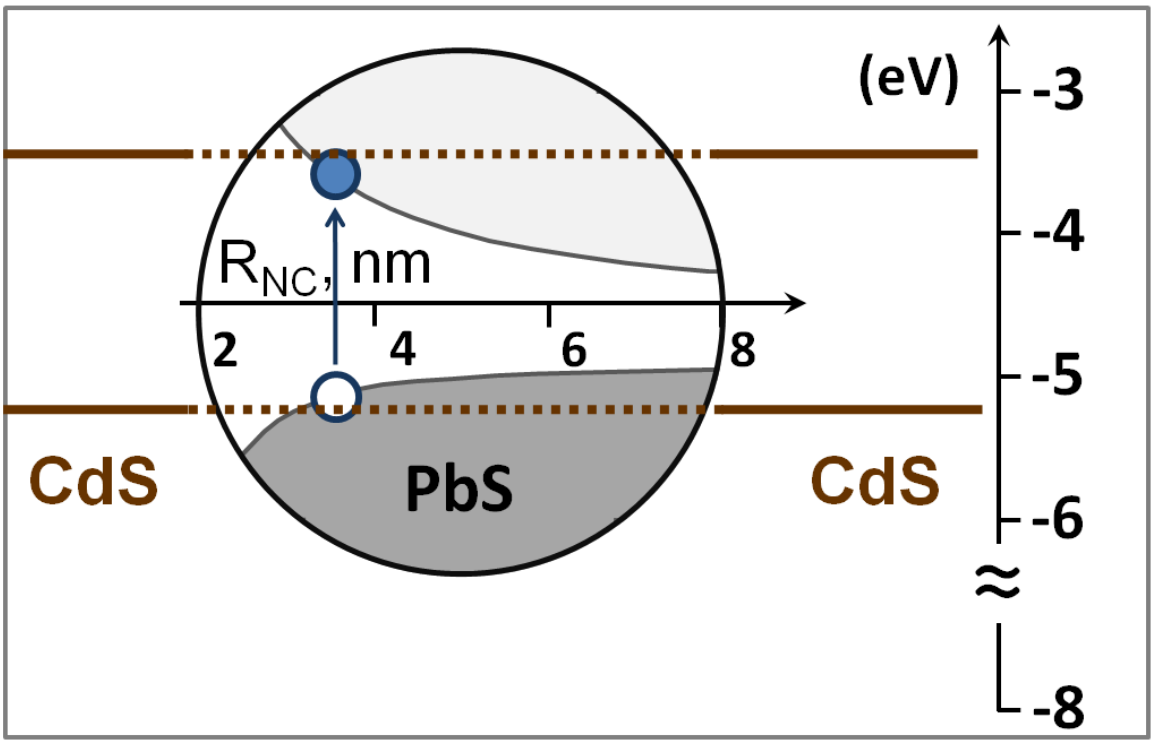

Figure SF3: Relative positions of the excited energy levels for PbS NCs and bulk CdS.

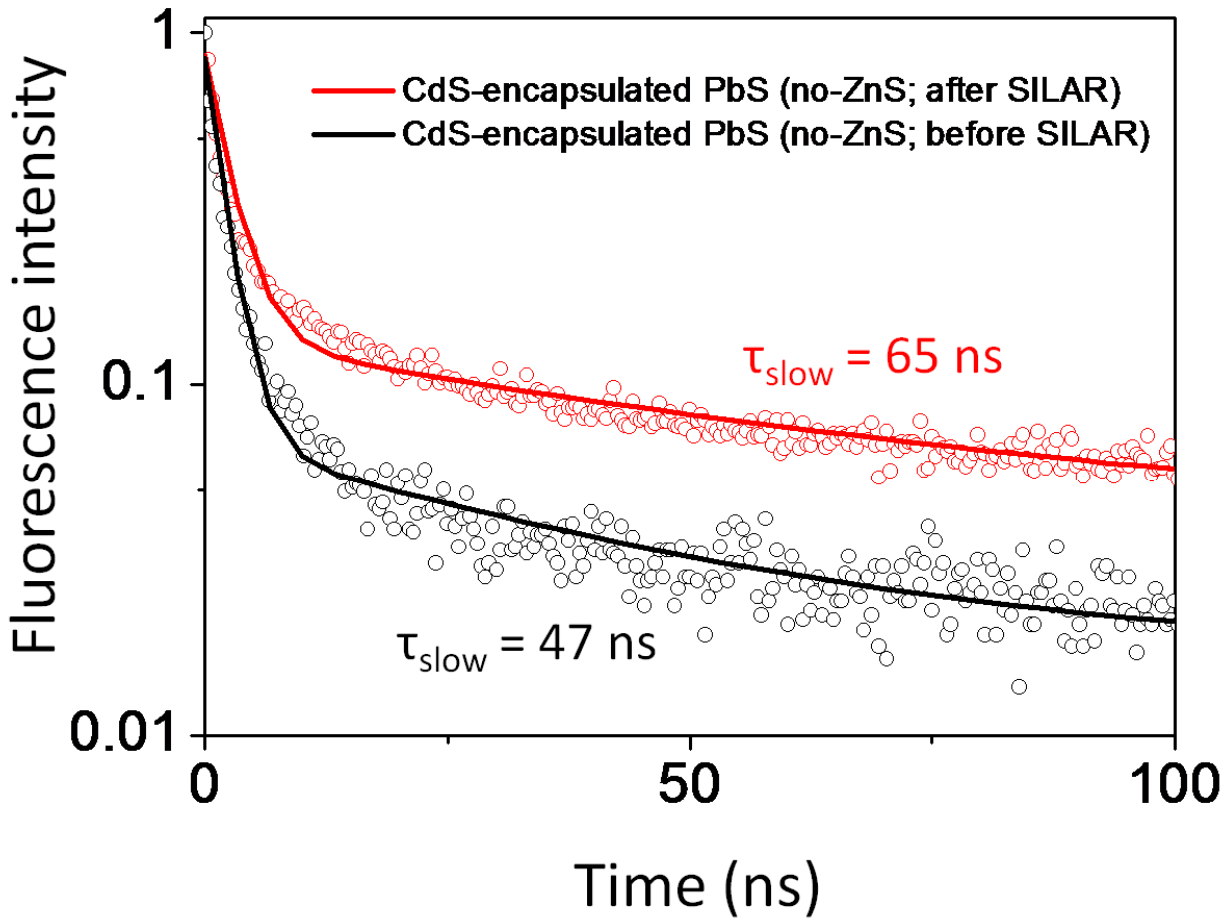

Figure SF4: FL intensity decay of CdS-encapsulated PbS NC films (R_{edge} = 0.64 nm) before (black) and after (red) the in-filling step. The solids did not contain any "insulating" ZnS nanocrystals.

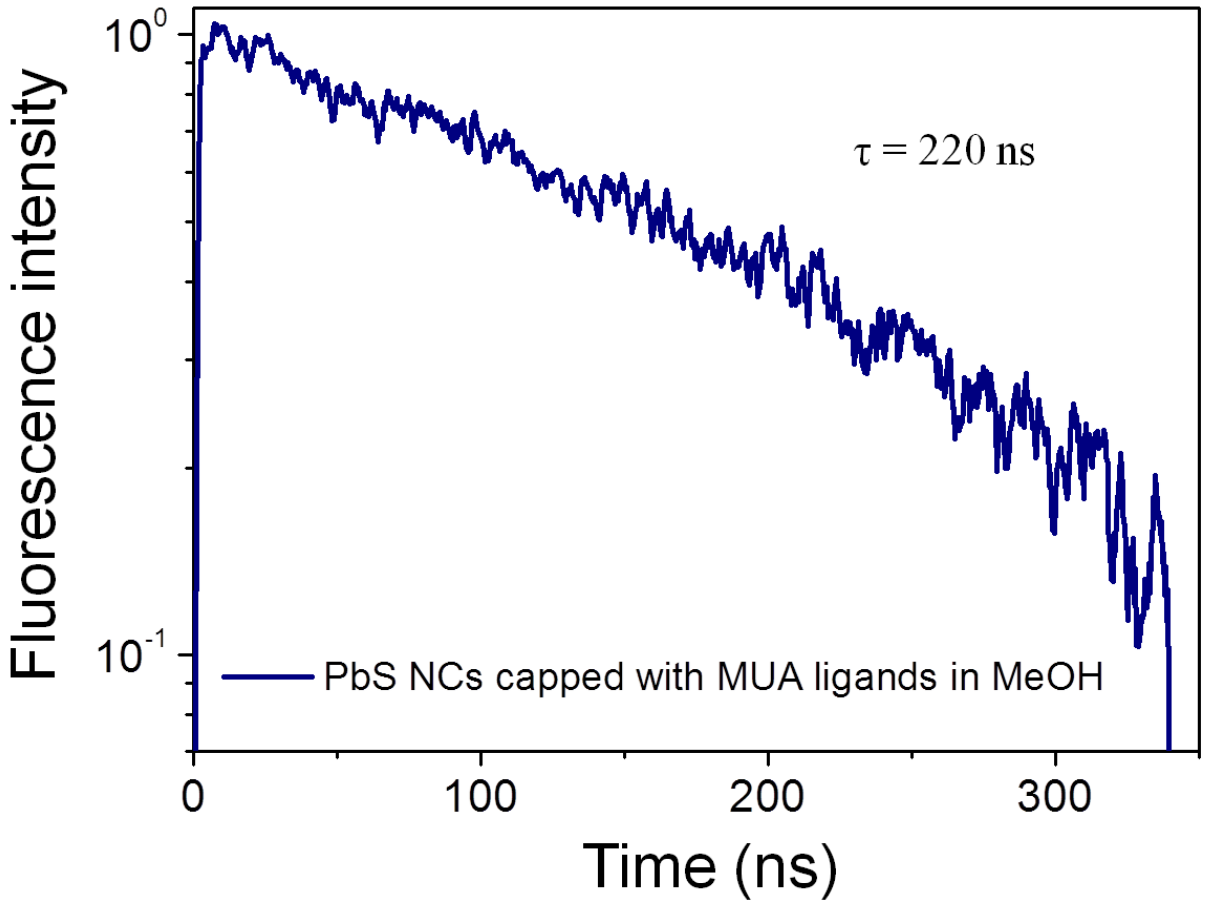

Figure SF5: Fluorescence intensity decay of MUA-capped PbS NCs in methanol.

Type of NC film	**l_{drift} (local +global traps) (nm*10^{-3}*E (V/cm))**	**l_{drift} (local traps only) (nm*10^{-3}*E (V/cm))**
CdS-encapsulated PbS NCs (R_{edge} = 0.5 nm)	19.0	75.04
CdS-encapsulated PbS NCs (R_{edge} = 1.5 nm)	9.4	20.3
MPA-linked PbS NCs	15.0	25.9
EDT-linked PbS NCs	1.9	3.5
Hybrid (MPA/Cl)-linked PbS NCs	6.6	38.7

Table TF1: Estimated drift scattering lengths for matrix-encapsulated and ligand-linked PbS nanocrystal solids