

Energy Transfer between Inorganic Perovskite Nanocrystals

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SUPPORTING INFORMATION

Additional figures.

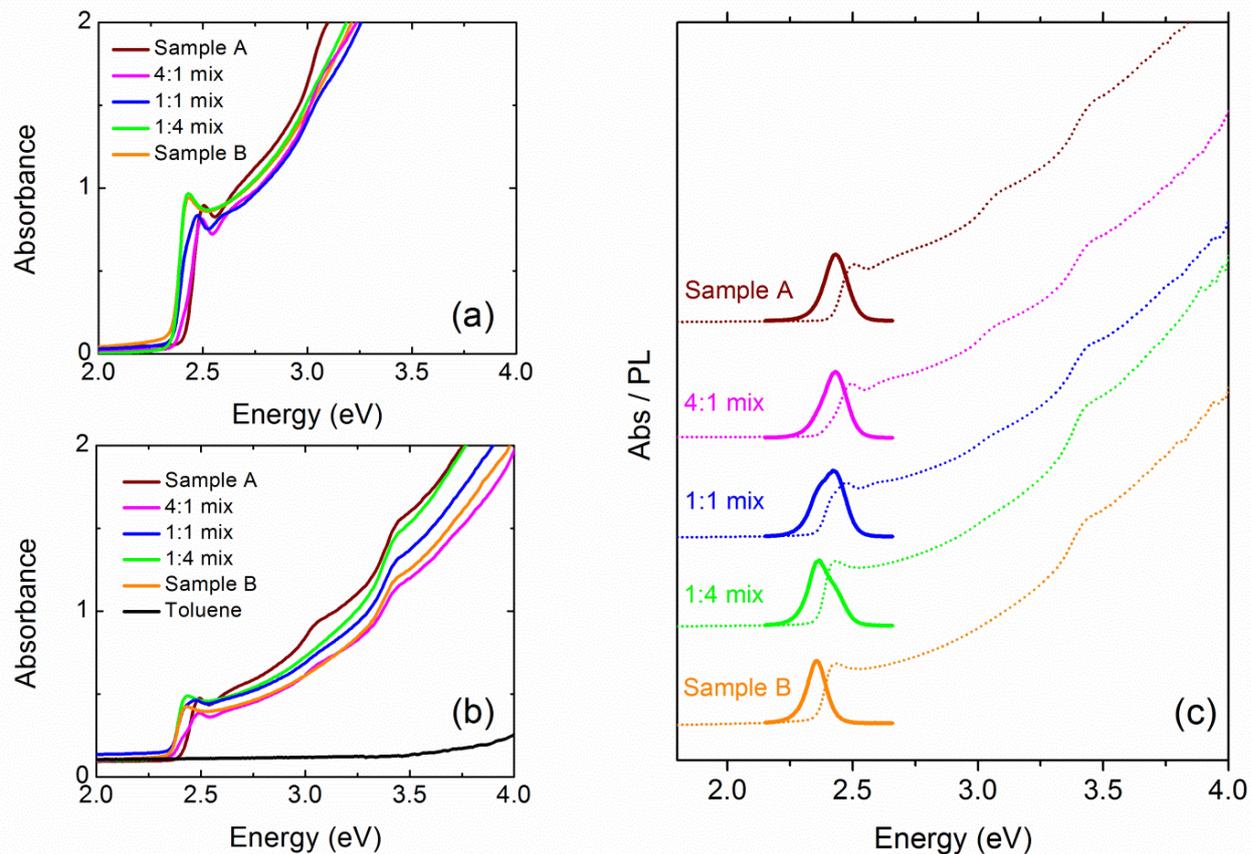


Figure S1. Absorption spectra of all samples with (a) and without (b) correction for the absorption of the solvent and plotted together as a comparison with the PL spectra (c).

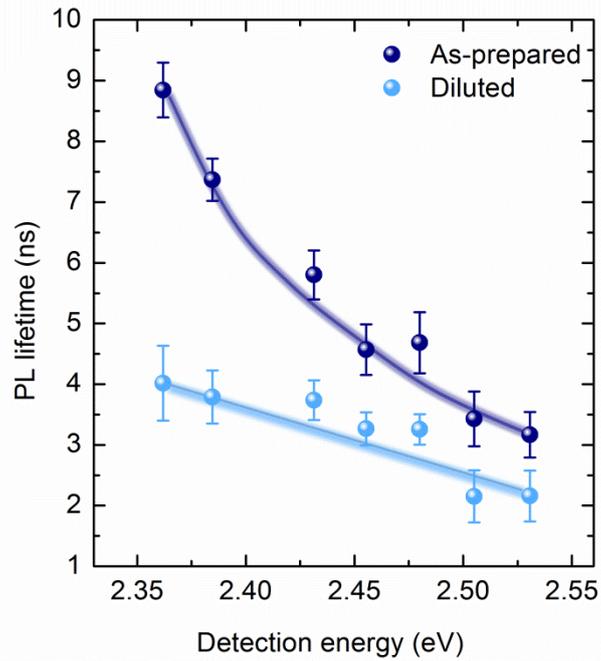


Figure S2. PL lifetimes at different detection energies for sample A as-prepared (dark blue) and diluted (light blue). The error-bars indicate the statistical error as obtained from the fitting procedure. A double-exponential function has been used to fit the data. All transients are dominated (99% of the total amplitude) by a fast component (indicating a contribution of the slow component to the PL decay to be negligible). In addition, we note that the PL lifetime strongly increases with concentration. This indicates the ET taking place from smaller to larger NCs which becomes more efficient with increasing NC density.

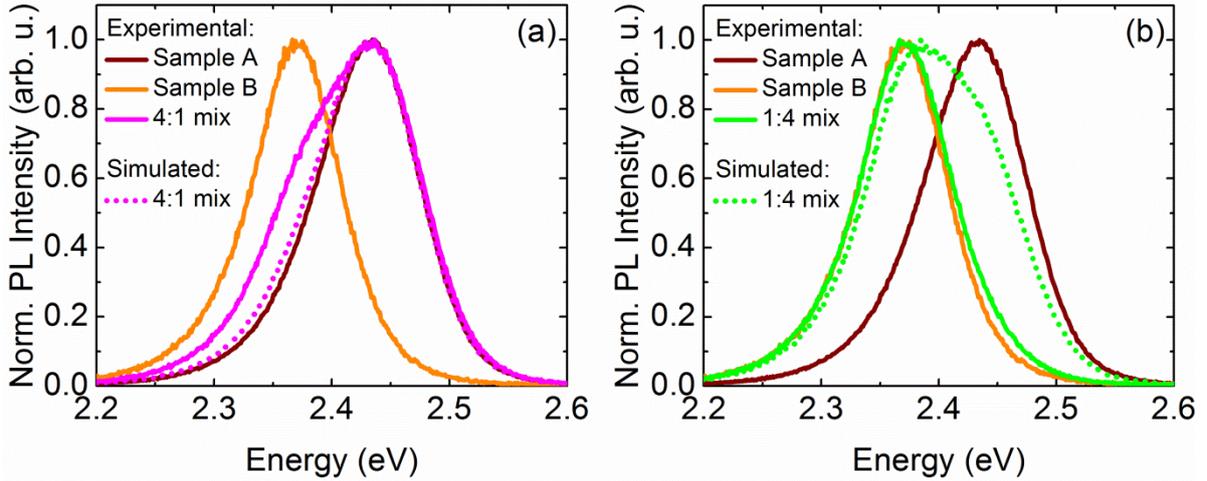


Figure S3. Comparison of the normalized PL spectra as experimentally measured (solid lines) and simulated (dotted lines) with nominal composition for the 4:1 (a) and 1:4 (b) mixed samples. For good reference, also the PL spectra of sample A and B are given. A clear discrepancy between the measured and modeled spectrum of the mixed samples is observed.

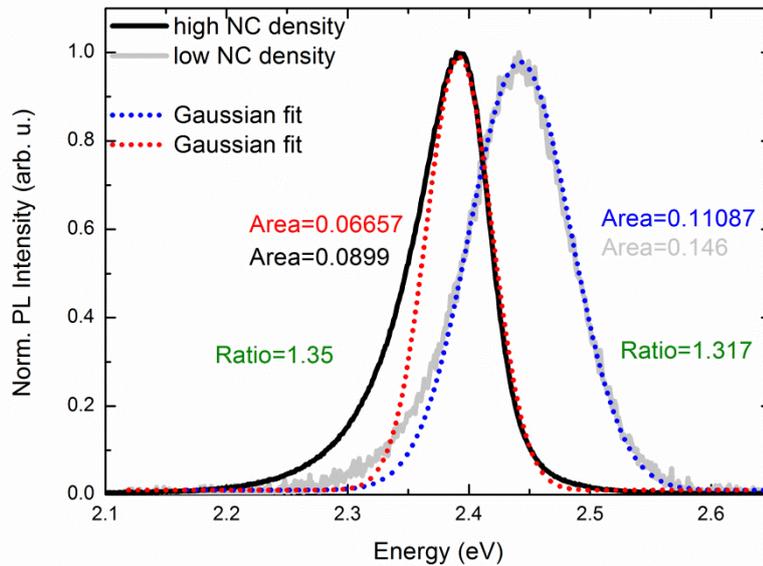


Figure S4. Normalized PL spectra of sample A with a high (black) and low (grey) NC density. The spectra are corrected for reabsorption. Both spectra are fitted with a Gaussian distribution that shows a discrepancy on the low-energy side which is explained by an energy transfer. By comparing the area under the curve of the sample with a high NC density, the minimum transfer in this sample can be estimated which is 35%.

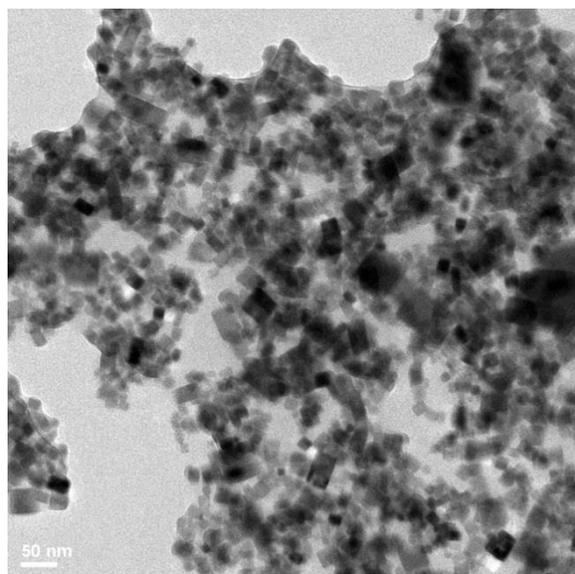


Figure S5. TEM image of the 1:4 mixed sample (A:B) showing the aggregation of nanocrystals and that they are in direct contact.

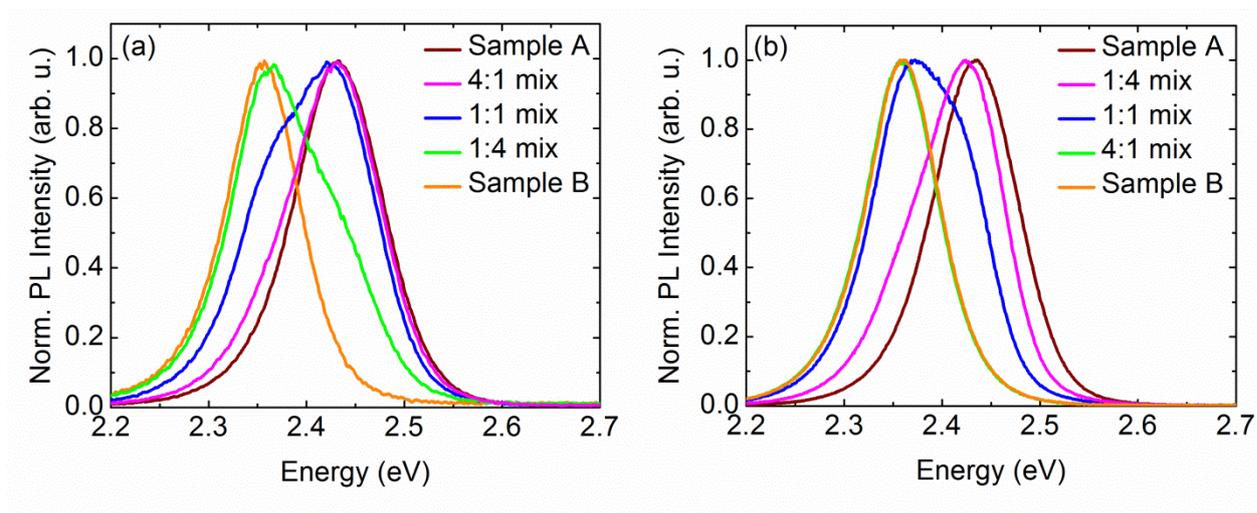


Figure S6. Normalized PL spectrum of samples A, B and the mixed compositions recorded directly after mixing (a) and 5 days after mixing (b). For all mixed samples the PL has redshifted upon time, indicating clustering. The emission of the 4:1 mixed sample is now similar to that of the large NCs.