

# Supporting Information

## Hyperfine Interactions and Slow Spin Dynamics in Quasi-Isotropic InP Core/Shell Colloidal Nanocrystals

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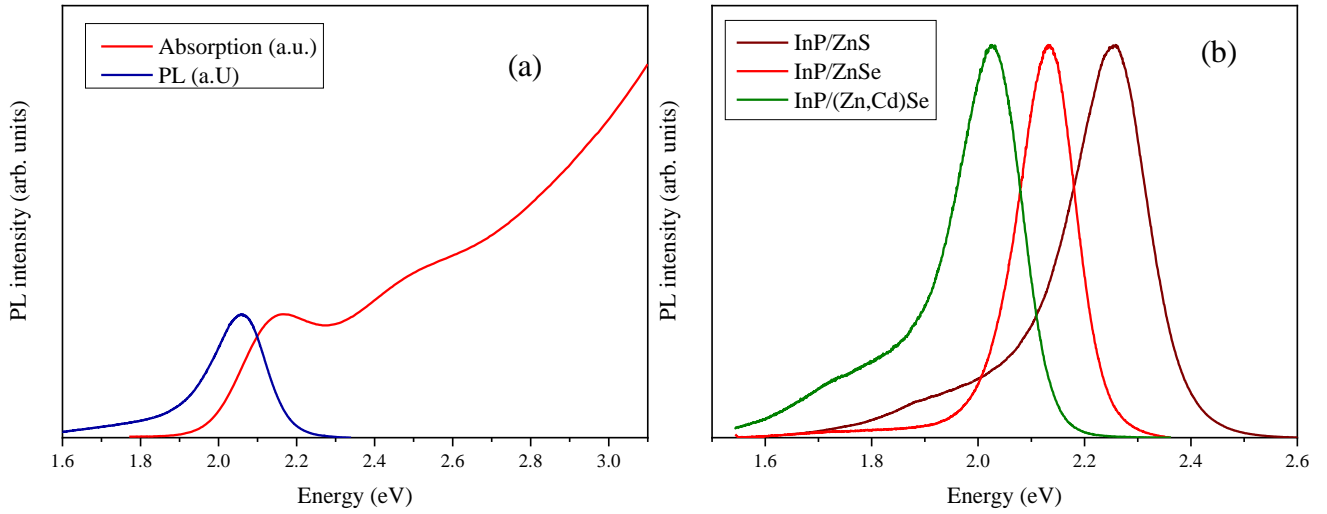
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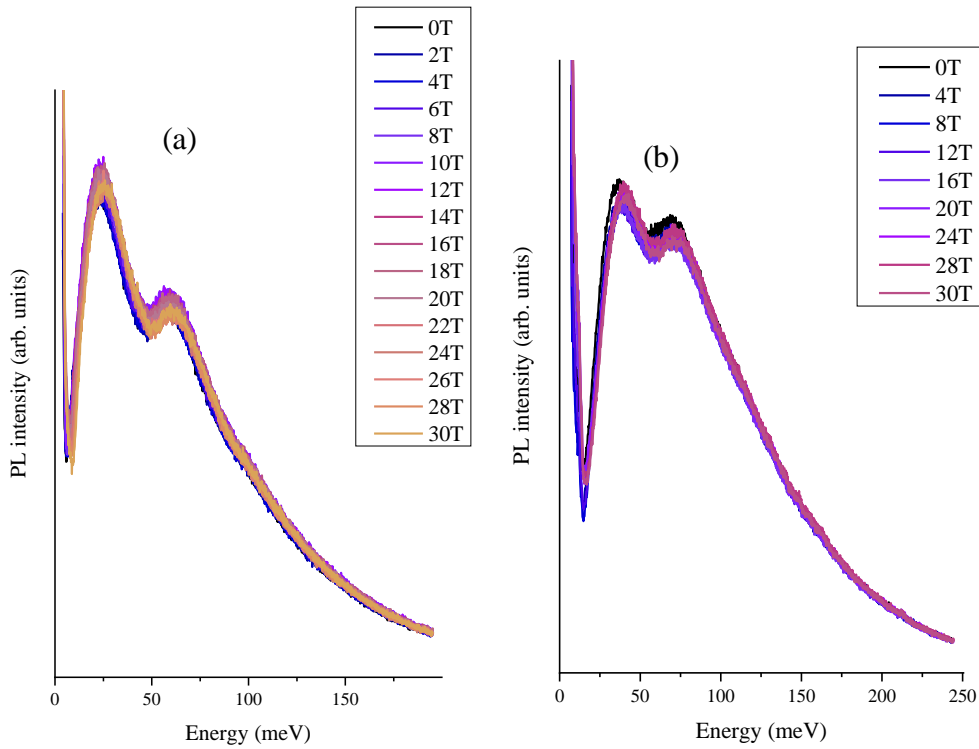
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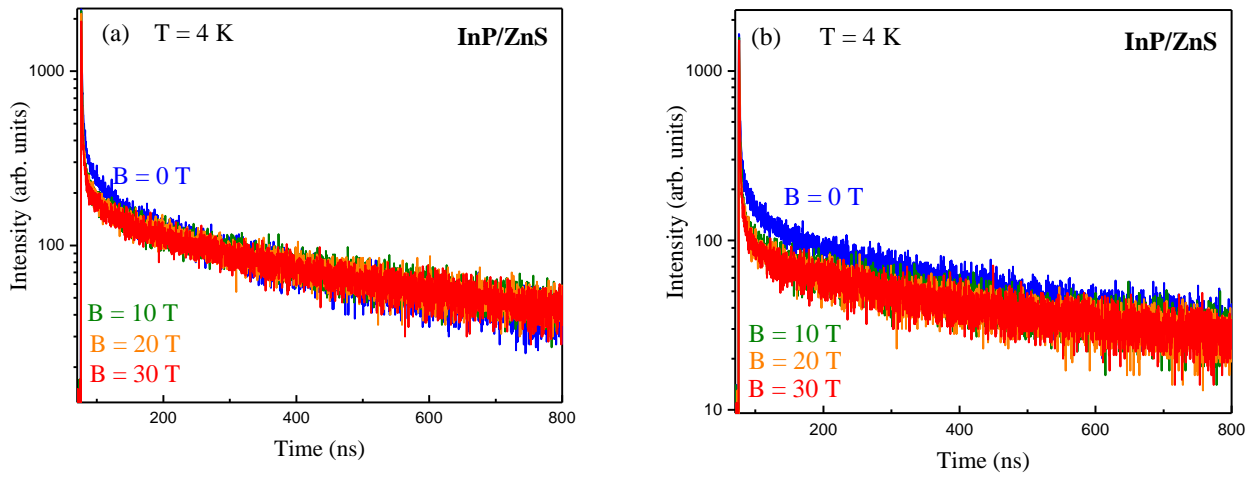
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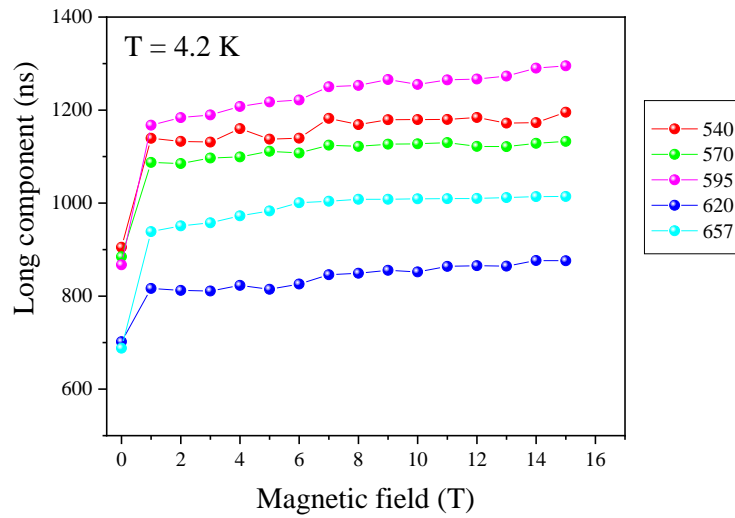
**Figure S1:** a) Absorption (red) and PL (blue) spectra for InP/ZnS NCs (sample 2) investigated at High Field Magnet Laboratory (Radboud University, Nijmegen, The Netherlands). b) PL spectra of InP/ZnS with a 2.5 nm InP core diameter (brown), InP/ZnSe (red) and InP/Cd<sub>0.09</sub>Zn<sub>0.91</sub>Se (green) NC samples, used for comparison.



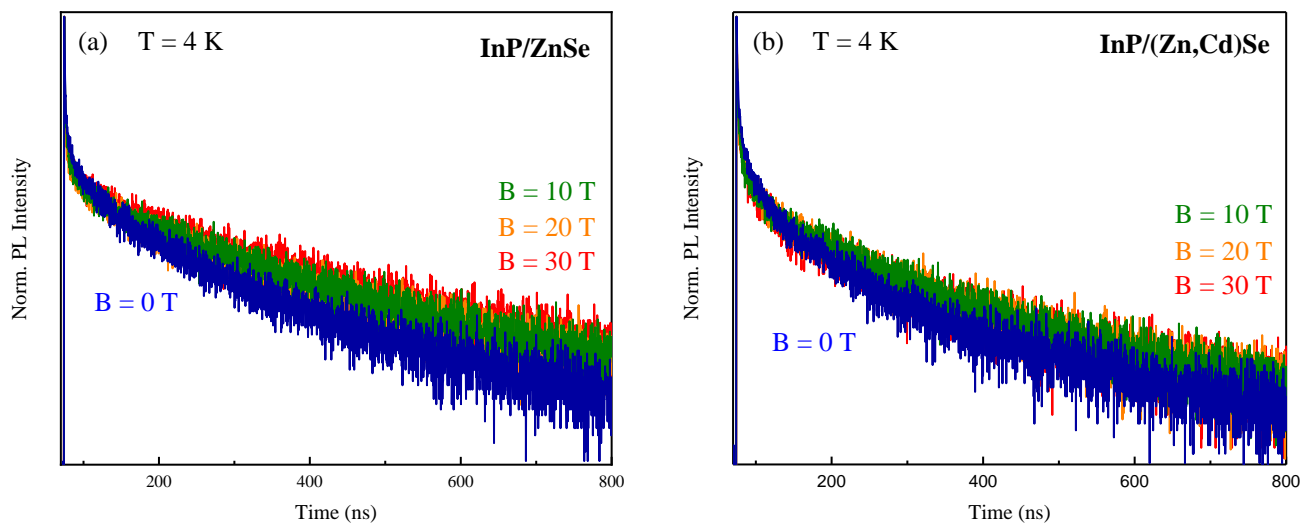
**Figure S2:** Unpolarized fluorescence line-narrowing (FLN) spectroscopy at 4 K at variable magnetic fields from 0 to 30 T, with samples measured in cuvette. a) Spectra of the InP/ZnS sample 1, upon excitation at 2.1 eV. b) Spectra of a InP/ZnS sample (with a 2.5 nm InP core diameter), upon excitation at 2.3 eV. The excitation laser energy is taken as reference and set to 0 meV.



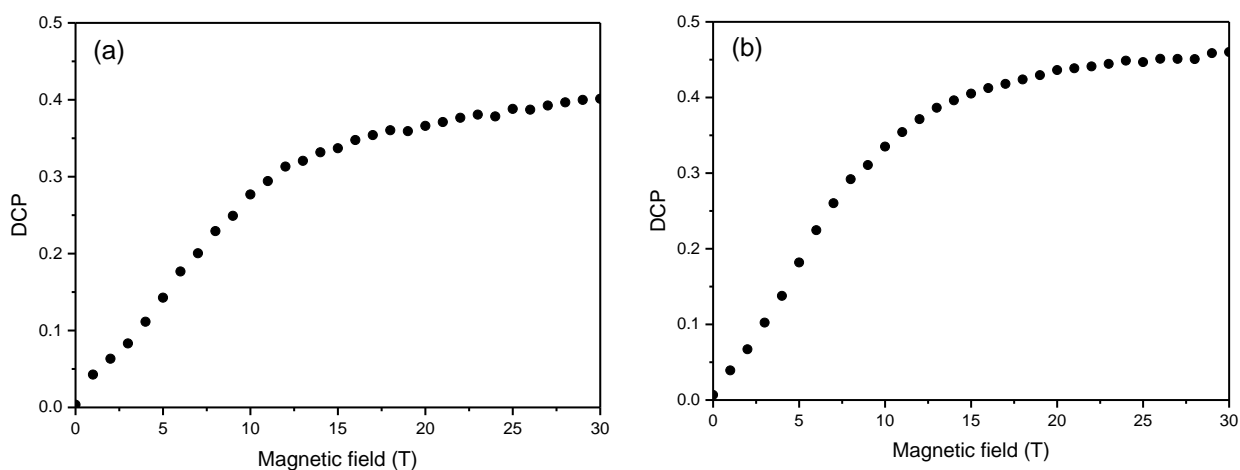
**Figure S3:** Unpolarized PL decay at 0 T, 10 T, 20 T and 30 T at  $T = 4$  K: a) of ensemble of InP/ZnS nanocrystals (sample 1), b) of a InP/ZnS sample (with a 2.5 nm InP core diameter).



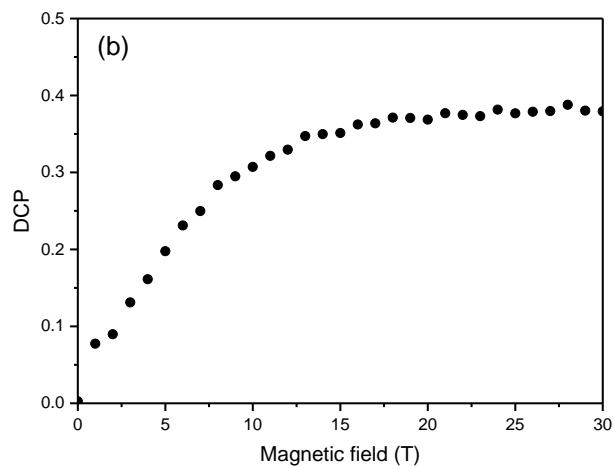
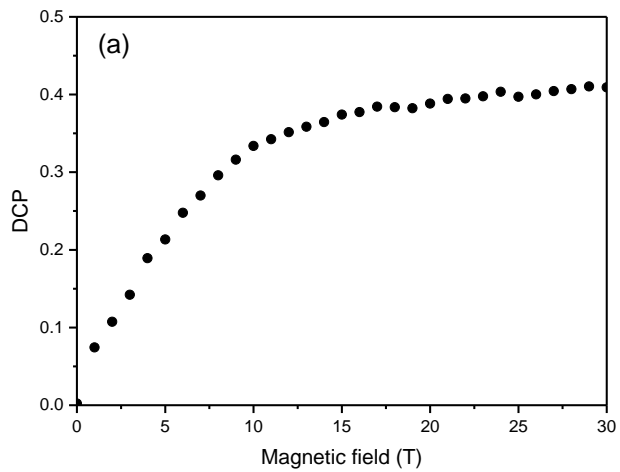
**Figure S4:** Magnetic field dependence of the long component of the PL decay of ensemble of InP/ZnS nanocrystals with various InP core size.



**Figure S5:** Unpolarized PL decay at 0 T, 10 T, 20 T and 30 T at  $T = 4$  K: a) of ensemble of InP/ZnSe nanocrystals, b) of ensemble of a InP/(Zn,Cd)Se nanocrystals with 9% Cd content.



**Figure S6:** Magnetic field dependence of the spectrally integrated DCP: a) of ensemble of InP/ZnS nanocrystals (sample 1), b) of a InP/ZnS sample (with a 2.5 nm InP core diameter).



**Figure S7:** Magnetic field dependence of the spectrally integrated: a) of ensemble of InP/ZnSe nanocrystals, b) of ensemble of InP/(Zn,Cd)Se nanocrystals.

