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Exhibit 14

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Supporting Information

Bright and Uniform Green Light Emitting InP/ZnSe/ZnS Quantum Dots for Wide Color Gamut Displays

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1. Supporting Figures and Table

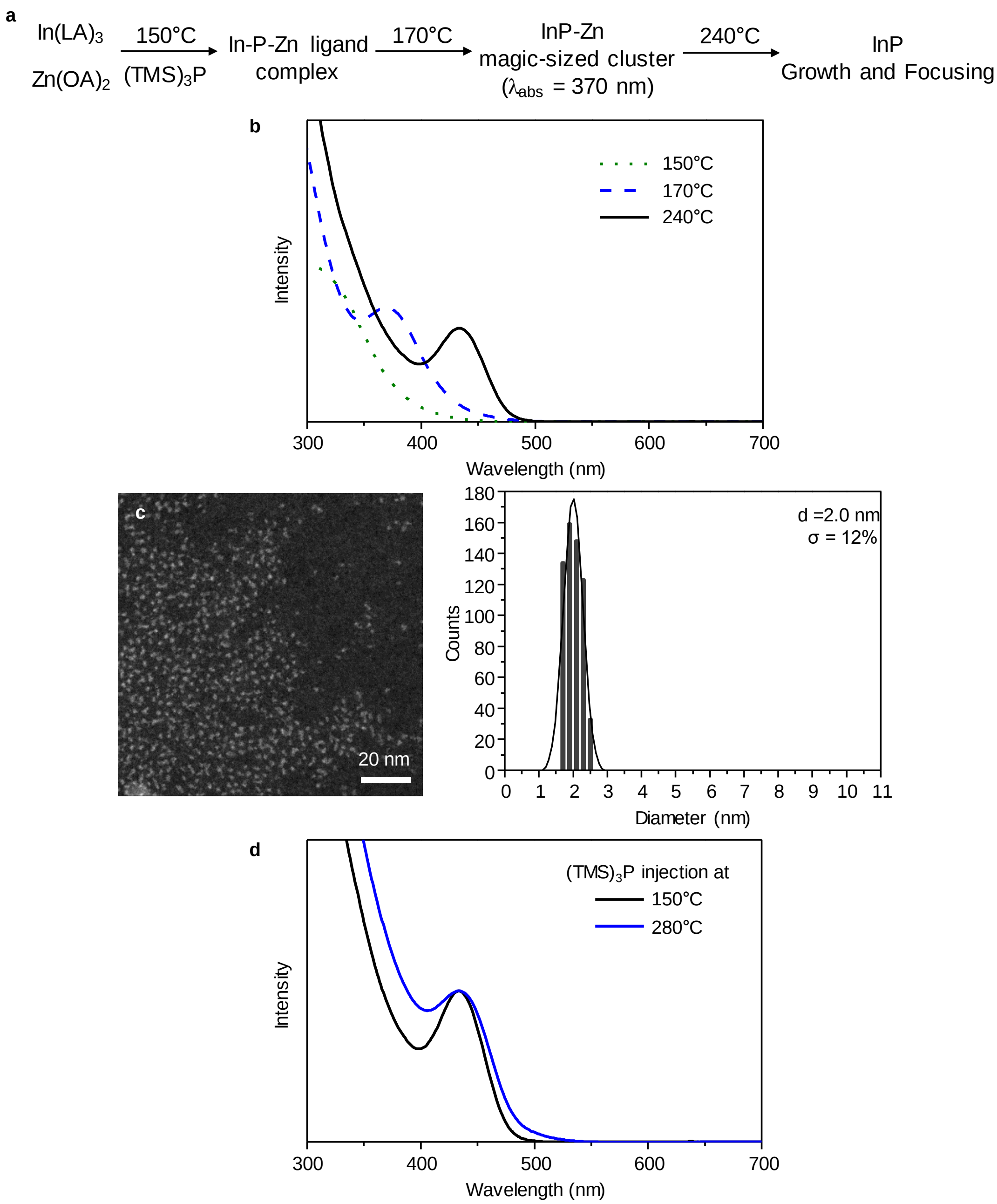

Figure S1. (a) Scheme of the InP core growth. (b) Absorption spectrum evolution during the InP growth. (c) A STEM image (left) and the size distribution (right) of InP cores. The black line in the size distribution is the Gaussian fit. (d) Comparison of absorption spectra of InP QDs prepared by injecting $(TMS)_3P$ at 150°C and 280°C.

Table S1. Elemental compositions of QDs and calculated thickness of each shell as well as the diameter of QDs.

Sample	Mole ratio (X/In)					Thickness (nm)			Diameter (nm)
	P/In	S/In	Zn/In	Se/In	In/In	ZnSe	ZnS	ZnSe/ZnS	
InP	0.73	0.00	0.37	0.00	1.00	-	-	-	2.0
InP/ZnSe	0.57	0.00	16.7	15.3	1.00	1.5	-	1.5	5.0
InP/ZnSe/ZnS	0.67	14.7	34.9	15.3	1.00	1.5	0.5	2.0	6.0
InP/ZnS	0.67	8.45	10.3	0.00	1.00	-	1.0	1.0	4.0

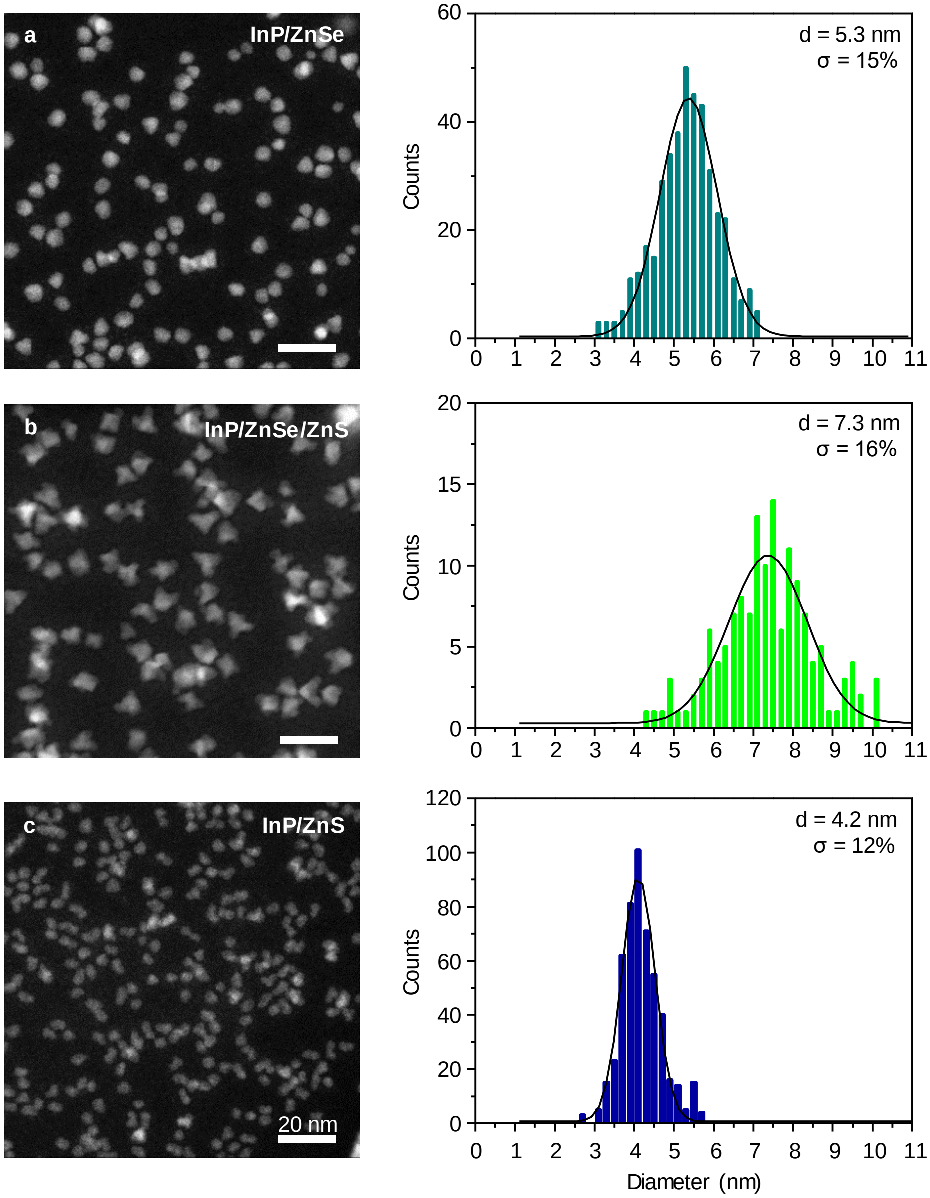

Figure S2. STEM images (left) and their corresponding size distributions (right) of InP/ZnSe (a), InP/ZnSe/ZnS (b), and InP/ZnS QDs (c). Black lines indicate Gaussian fitting of the size distribution.

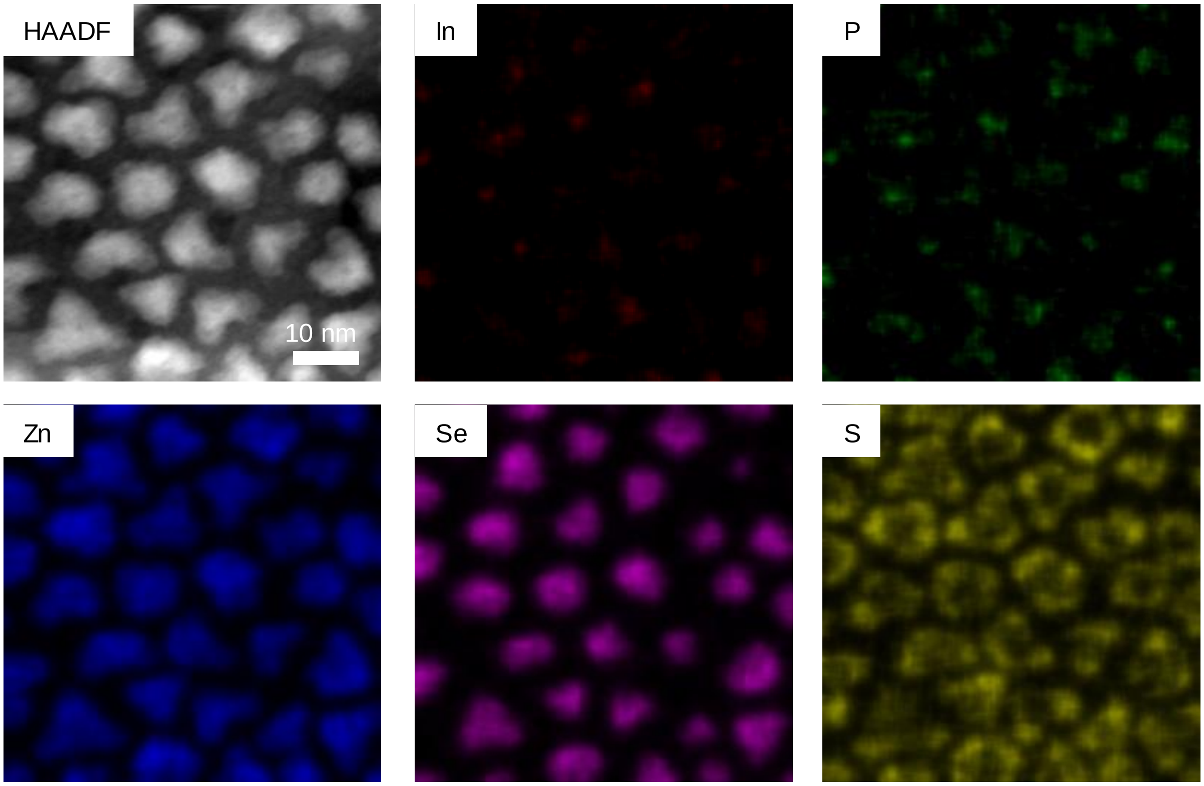

Figure S3. STEM EDS mapping images of InP/ZnSe/ZnS QDs.

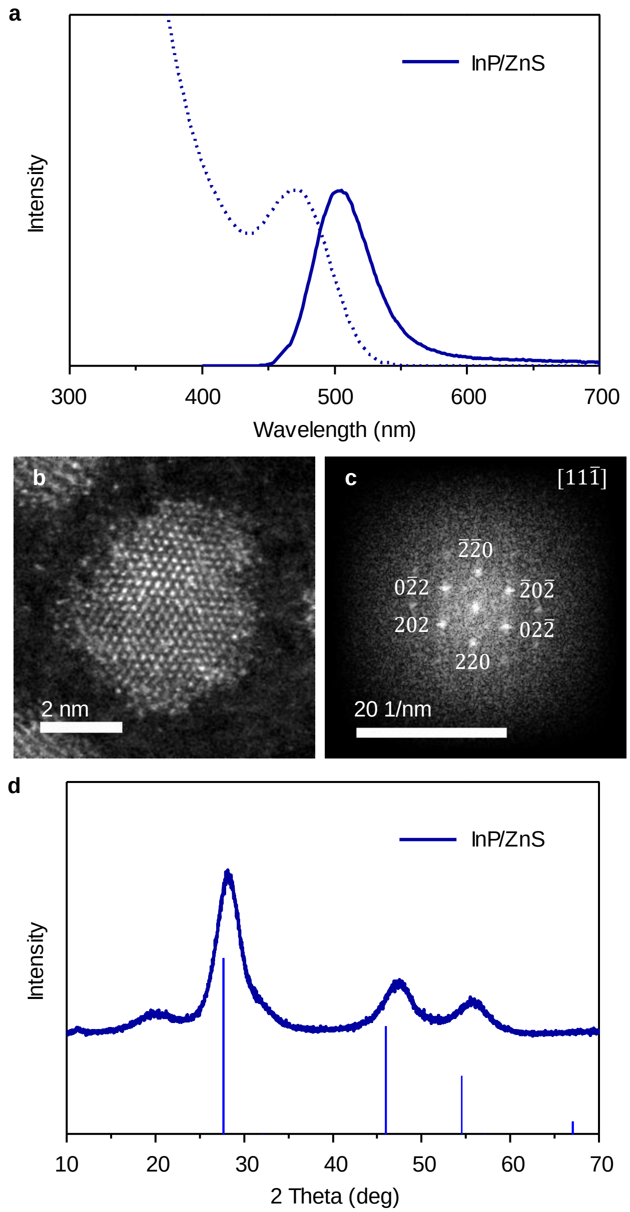

Figure S4. (a) Absorption (dotted lines) and emission (solid lines) spectra of InP/ZnS QDs. A HR-STEM image (b) and its FFT diffractogram (c) of InP/ZnS QD. (d) Powder XRD patterns of InP/ZnS QDs. The vertical bars represent the diffraction patterns for bulk zinc-blende ZnS.

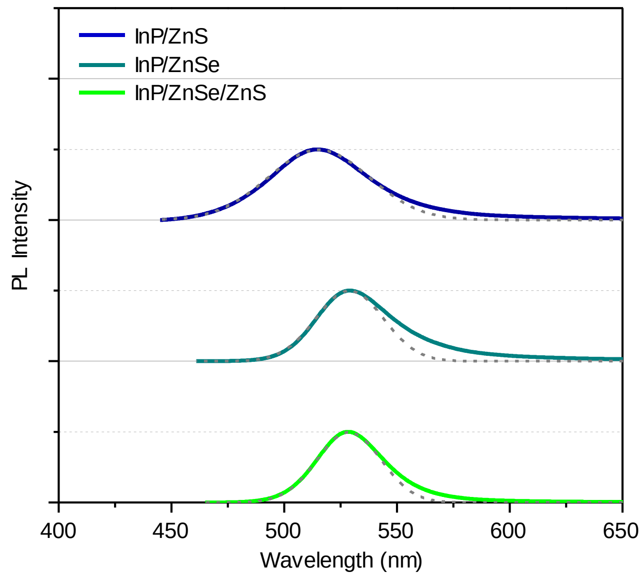

Figure S5. Steady-state emission spectra for InP/ZnS, InP/ZnSe, and InP/ZnSe/ZnS. Fitting each emission spectrum to a Gaussian function (short gray dashes) at the front line creates a tail on the right side of the spectrum. The percentage of the tail is 14% of InP/ZnS, 29% of InP/ZnSe, and 11% of InP/ZnSe/ZnS.

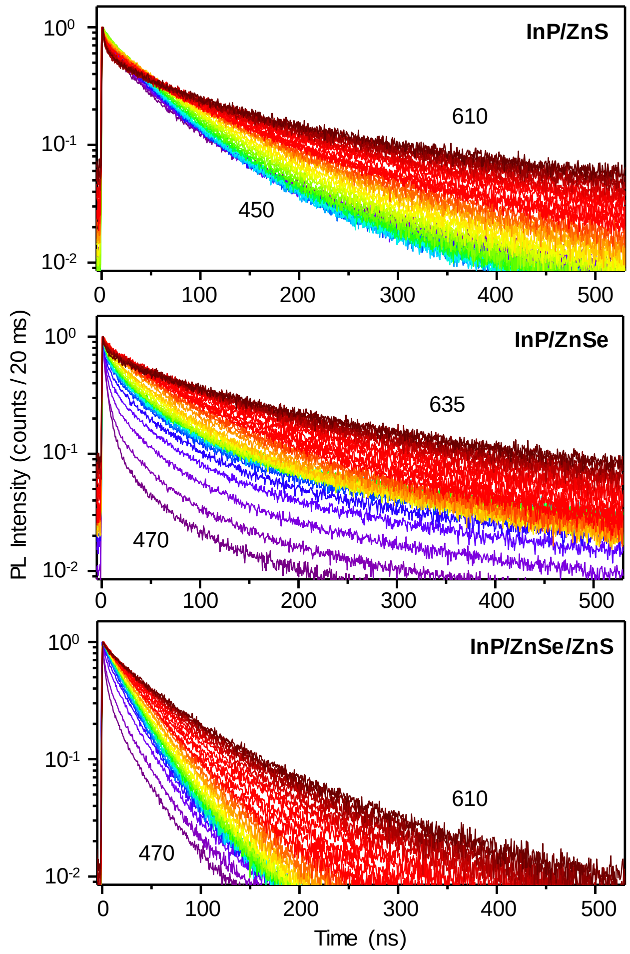

Figure S6. Time-resolved PL decay curves probed at different wavelengths with a 10 nm spectral width for InP/ZnS (top), InP/ZnSe (middle), and InP/ZnSe/ZnS (bottom).

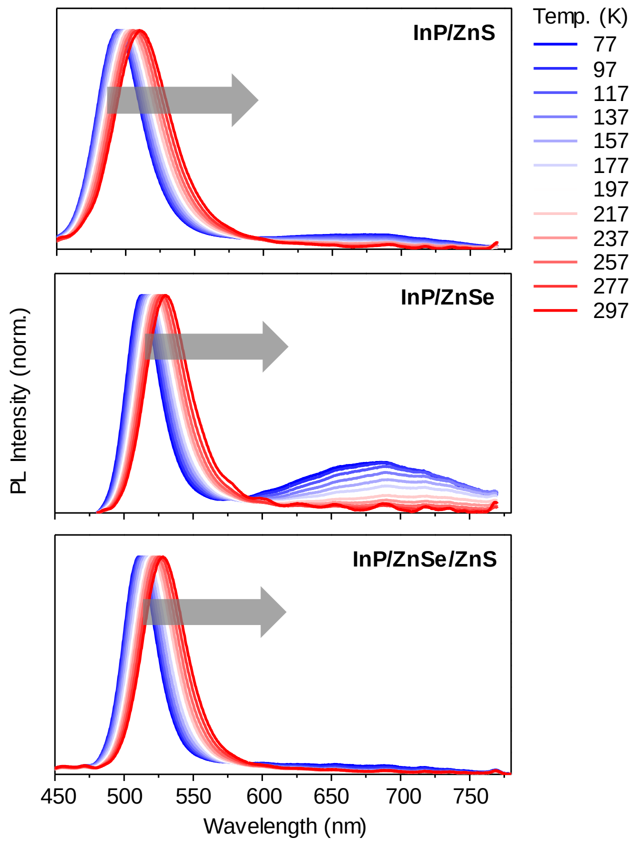

Figure S7. Normalized temperature-dependent PL spectra of the InP/ZnS (top), InP/ZnSe (middle), and InP/ZnSe/ZnS (bottom) QDs

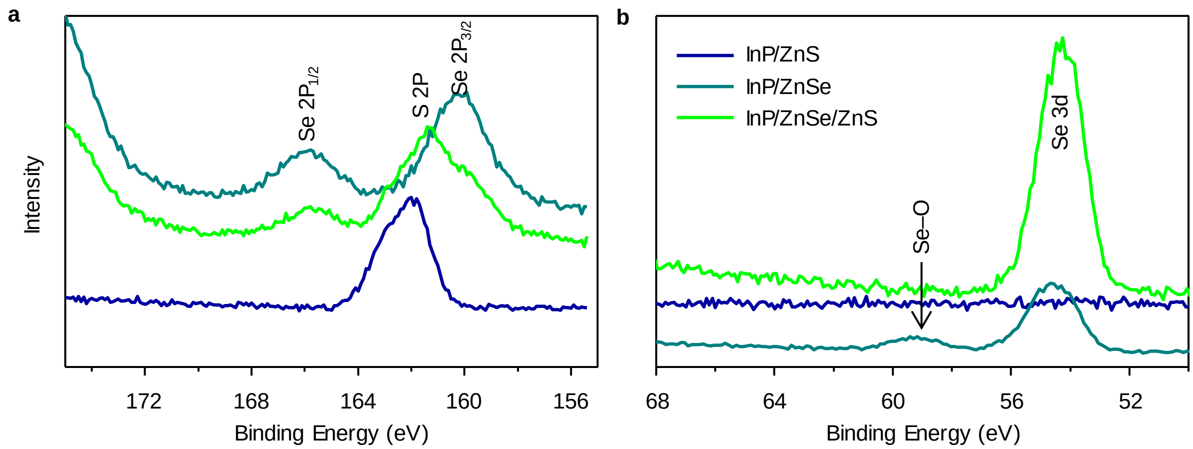

Figure S8. S (2P) and Se ($2P_{1/2}$) peaks (a) and Se (3d) peak (b) of high-resolution XPS spectra of InP/ZnSe (dark cyan), InP/ZnSe/ZnS (green) and InP/ZnS QDs (navy).

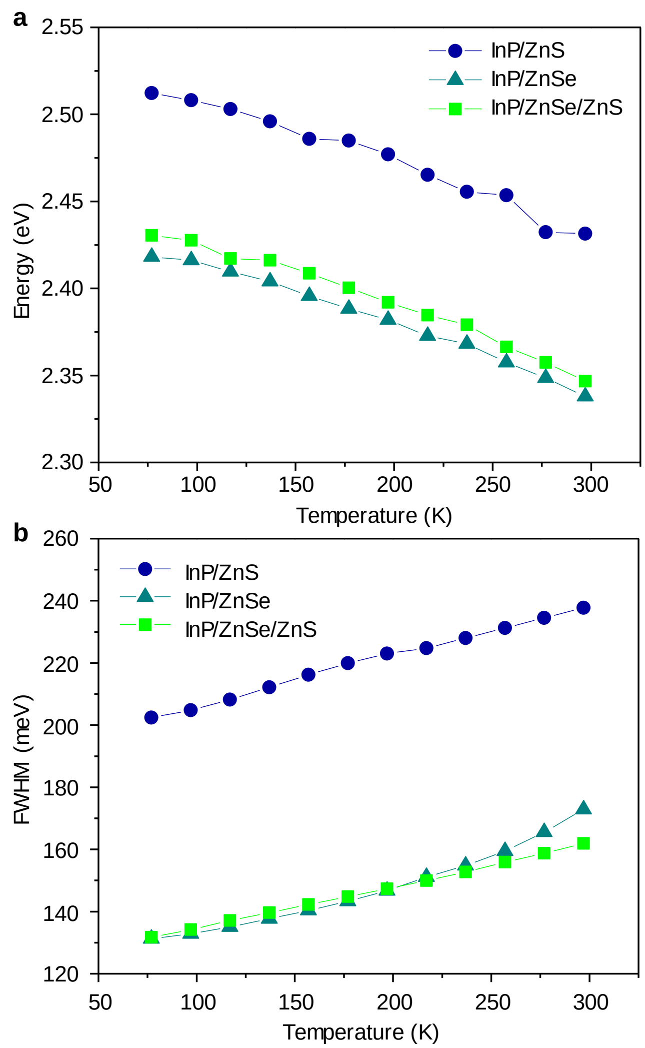

Figure S9. Temperature-dependent PL peak energy (a) and FWHM (b) of the InP/ZnSe, InP/ZnSe/ZnS, and InP/ZnS QDs.

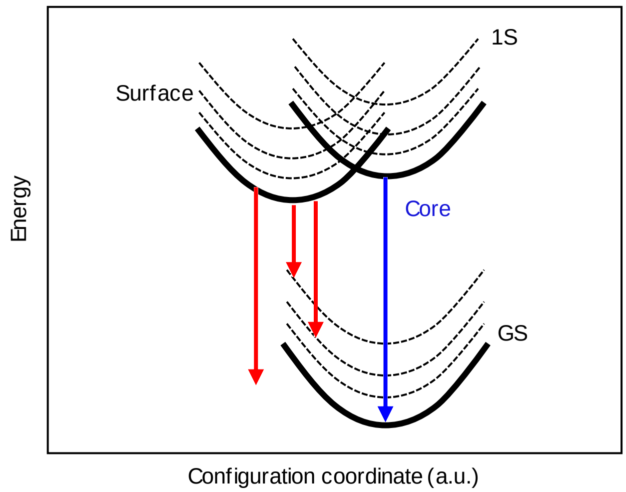

Figure S10. Schematics of core and surface emission for the QDs. In this approach, described by Marcus-Jortner electron transfer theory[1], the possibility of tunneling through the potential barrier is explicitly allowed via a minimal model consisting of two modes: a classical low-frequency mode representing interaction with the medium, and a quantum high-frequency mode representing internal vibrations. The classical mode governs the high-temperature and thermally activated population equilibria, and the quantum mode governs the low-temperature populations via tunneling as well as spectral line shapes.

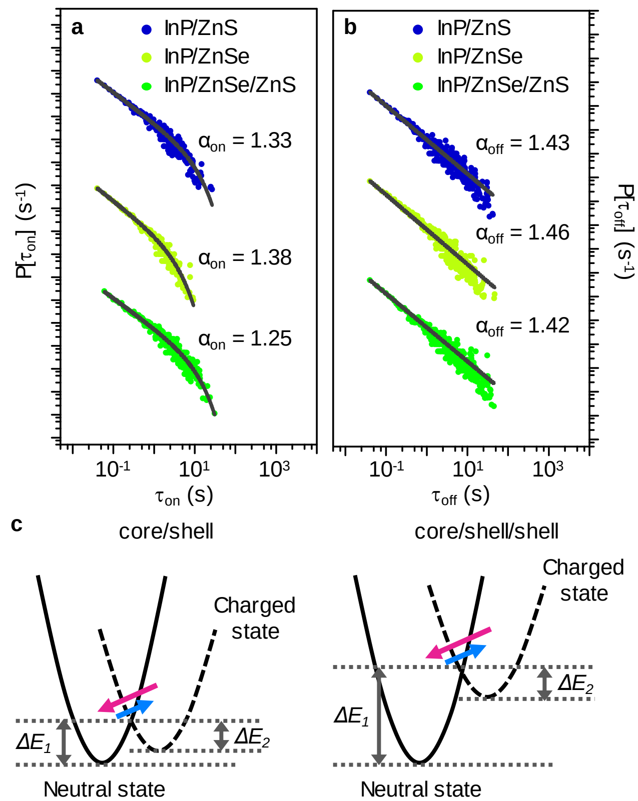

Figure S11. On- (a) and off-time (b) probability density plots calculated using more than 100 single QDs, and fitted using truncated power-law and power-law equations, respectively, with a high value of adjusted r-square (0.99). (c) A schematic of the charge trapping (blue arrows) and detrapping (pink arrows) processes.

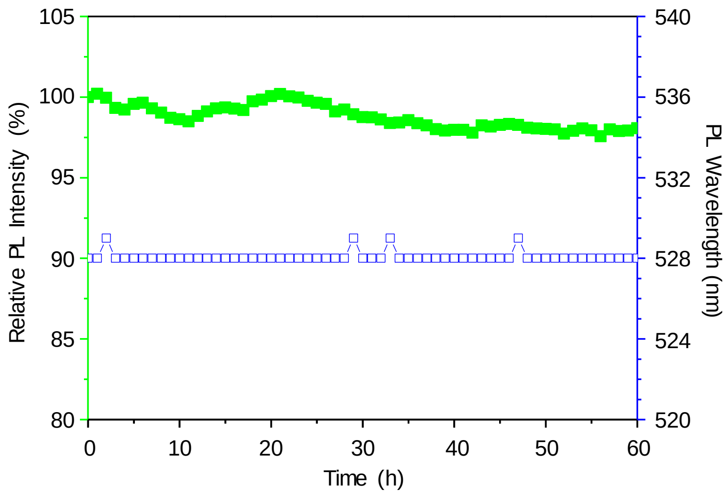

Figure S11. Photostability of the InP/ZnSe/ZnS QDs. Relative PL intensity (green) and PL wavelength (blue) changes over time.

2. References

1. Mooney, J.; Krause, M. M.; Saari, J. I.; Kambhampati, P. Challenge to the Deep-trap Model of the Surface in Semiconductor Nanocrystals *Phys. Rev. B* **2013**, *87*, 081201.