

Fig. S1. Band gaps of (a) InP core and (b) In(Zn)P core calculated from their respective corresponding (c) absorption spectra. (d) Schematic diagram of radiative excitonic recombination in InP-In(Zn)P/ZnSe/ZnS core/shell/shell QDs.

The band gaps were calculated according to the follow equation:

$$(Ah\nu/K)^2 = h\nu - E_g$$

where A stands for absorbance; h is Planck constant; ν is on behalf of light frequency; K is a fixed constant. Plot $(Ah\nu)^2$ as a function of $h\nu$. The point at which the tangent line of graph intersects the line of $y=0$ is on behalf of E_g .

Table S1. Elemental composition of C 1s, O 1s, Zn 2p, Zn 3s, In 3d and P 2p for InP and InP-In(Zn)P QDs.

Sample	C 1s (%)	Zn 2p (%)	Zn 3s (%)	In 3d (%)	P 2p (%)
InP	91.26	/	/	4.71	4.03
InP-In(Zn)P	84.21	1.73	4.07	5.14	4.85

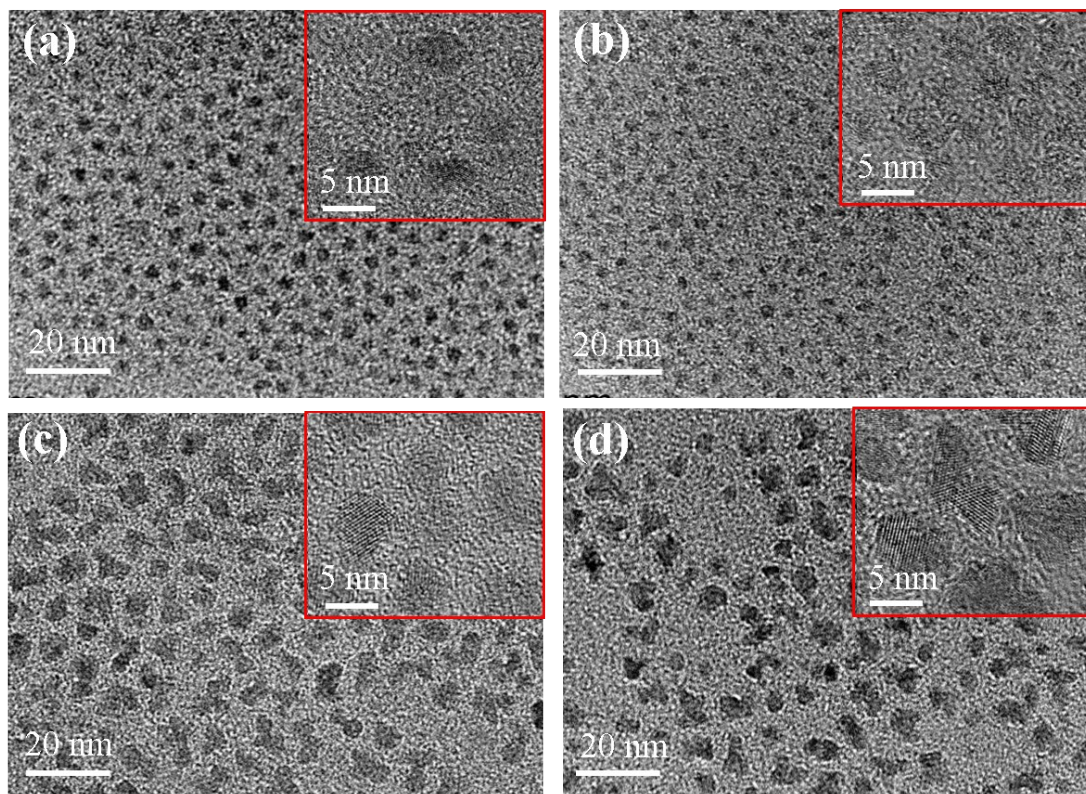


Fig. S2. TEM images and HRTEM images (insets) of (a) InP-In(Zn)P core, (b) InP-In(Zn)P/ZnSe_{thin} core/shell, (c) InP-In(Zn)P/ZnSe_{thick} core/shell, and (d) InP-In(Zn)P/ZnSe/ZnS core/shell/shell QDs, respectively. The insets are corresponding TEM images at higher magnification.

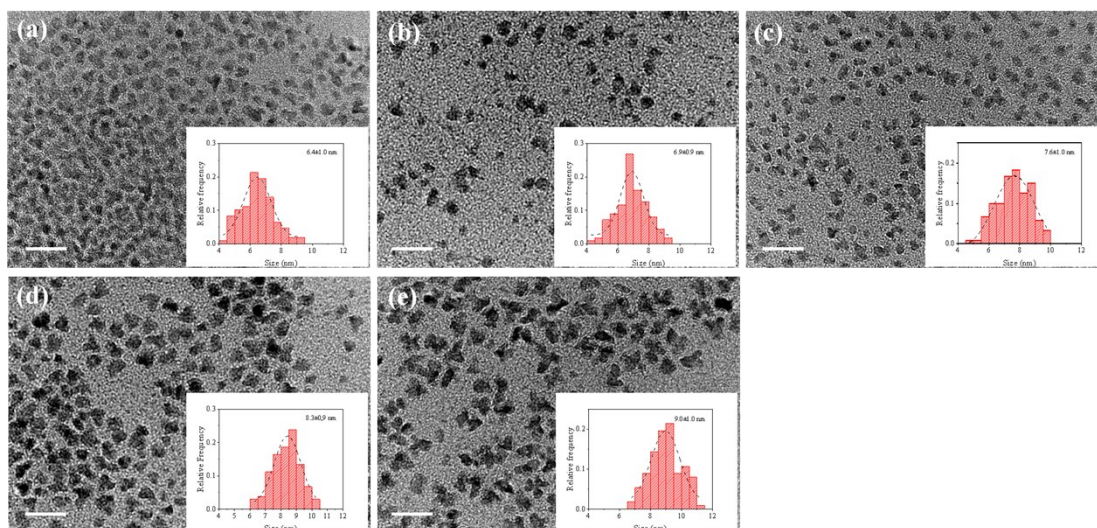


Fig. S3. TEM images and corresponding size distribution diagrams (insets) of InP-In(Zn)P/ZnSe/ZnS core/shell/shell QDs with 569 nm, 588 nm, 601 nm, 616 nm, 630 nm emitting. The scale bar in each TEM image is 20 nm.