SUPPORTING INFORMATION

Green-emitting $CsPbI_3$ Nanorods Decorated with $CsPb_2I_5$ and Cs_4PbI_6 Nanoclusters

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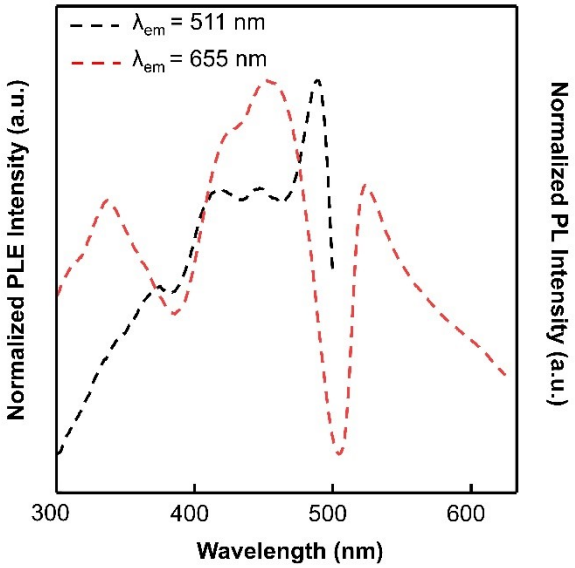

Figure S1. PL excitation spectra of MP-nanorods and $CsPbI_3$ QDs mixture measured using λ_{em}=511 nm (dashed black line) and 655 nm (dashed red line)

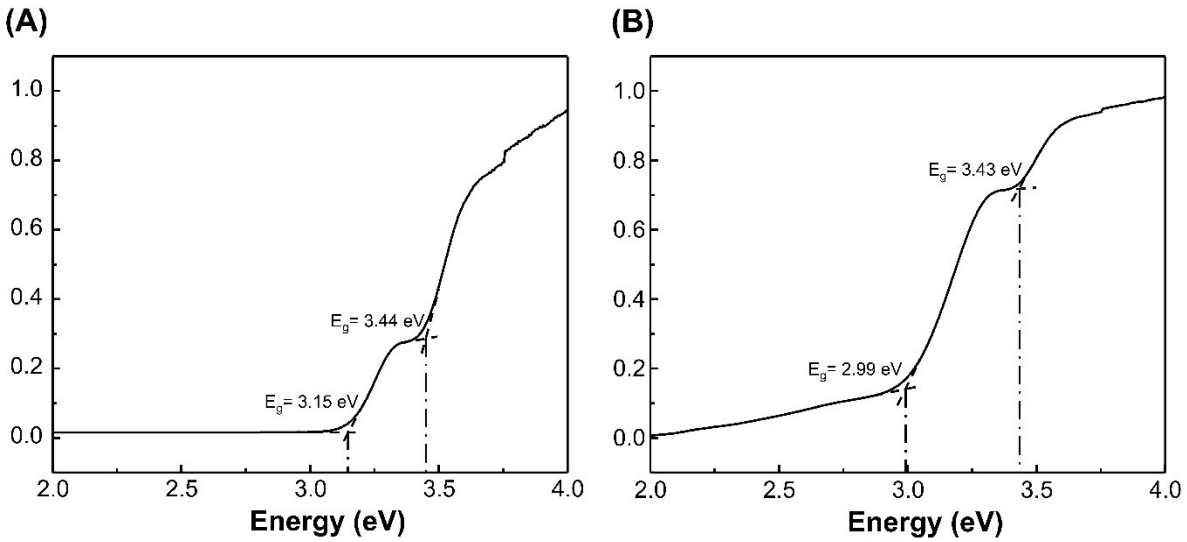

Figure S2. Tauc plots of direct (A) and indirect (B) band gap of as-synthesized $CsPbI_3$ QDs

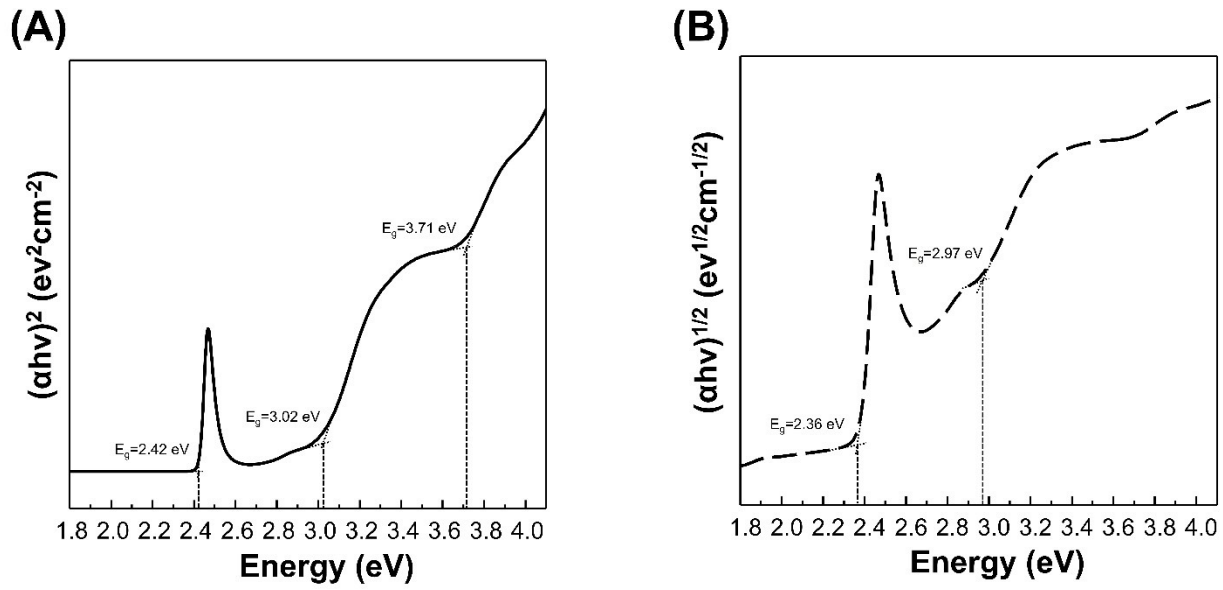

Figure S3. Tauc plots of direct (A) and indirect (B) band gap of MP-nanorods and $CsPbI_3$ QDs mixture

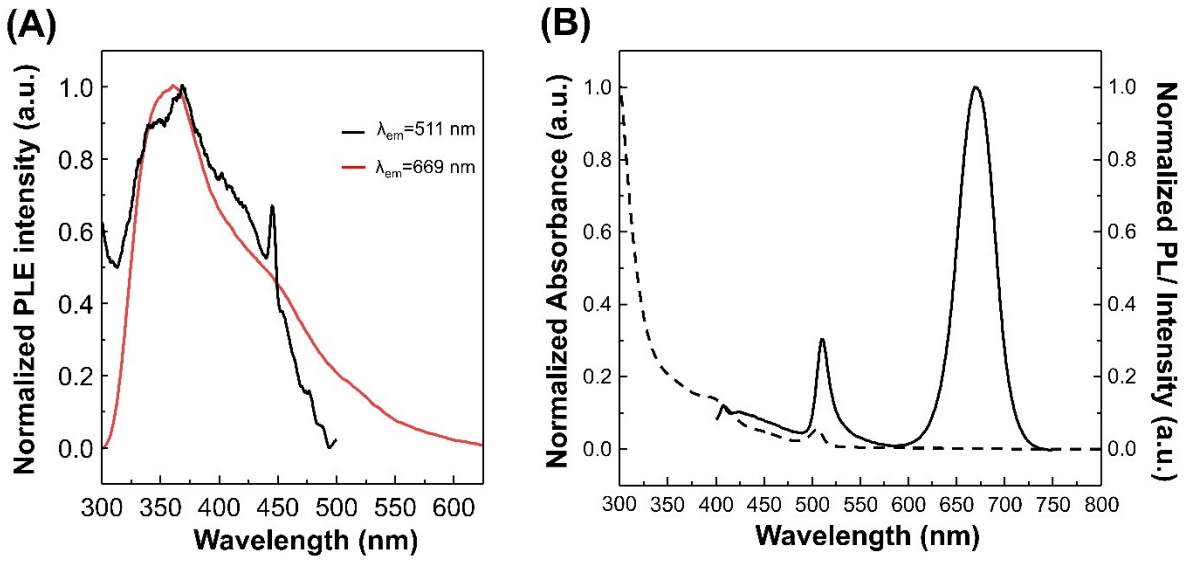

Figure S4. PL excitation spectra (A), PL emission (solid line), and UV-vis (dashed line) spectra (B) of $CsPbI_3$ QDs and MP-nanorods mixture assisted by titanium tetra isopropoxide (TTIP)

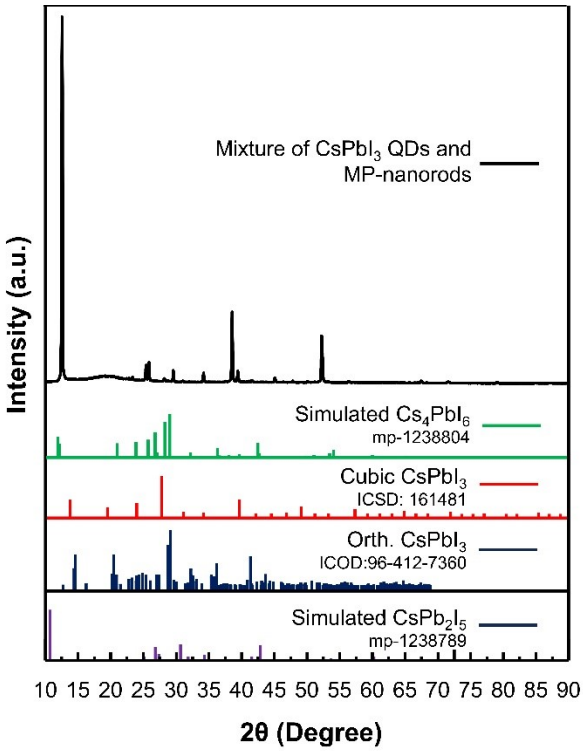

Figure S5. The XRD patterns of MP-nanorods and $CsPbI_3$ QDs mixture prepared using titanium tetra-isopropoxide (TTIP)

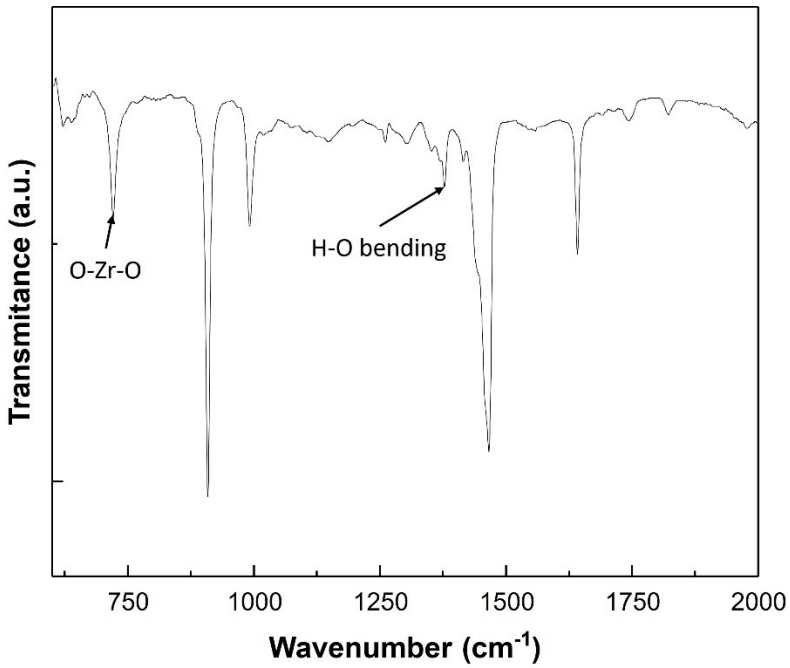

Figure S6. FTIR spectrum of dual-emitting colloidal mixture

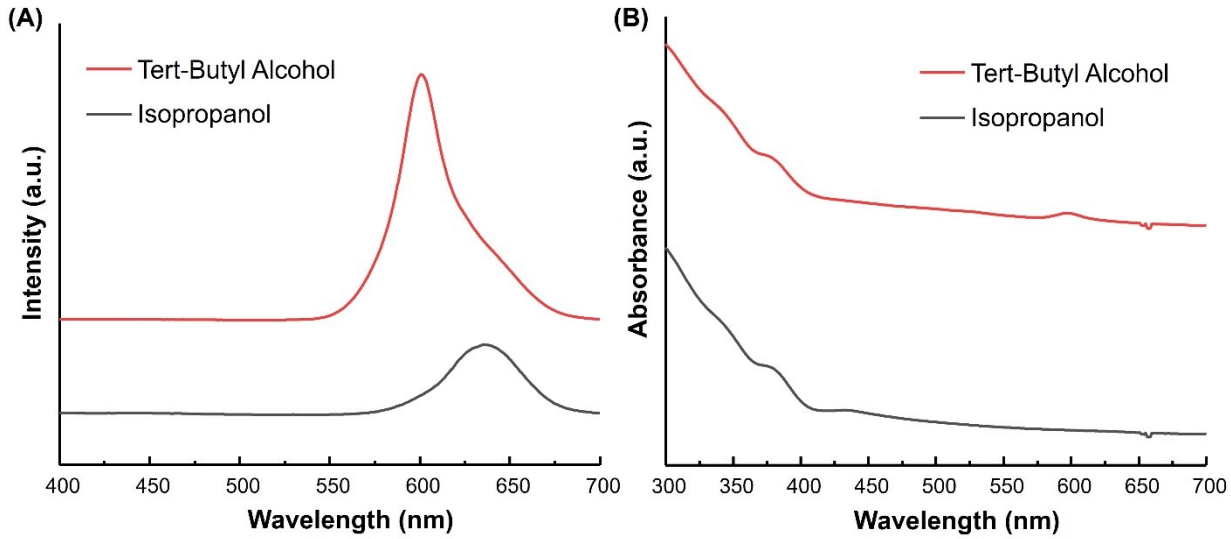

Figure S7. PL emission (A) and UV-vis spectra (B) of colloidal solution upon the addition of tert-butyl alcohol and isopropanol

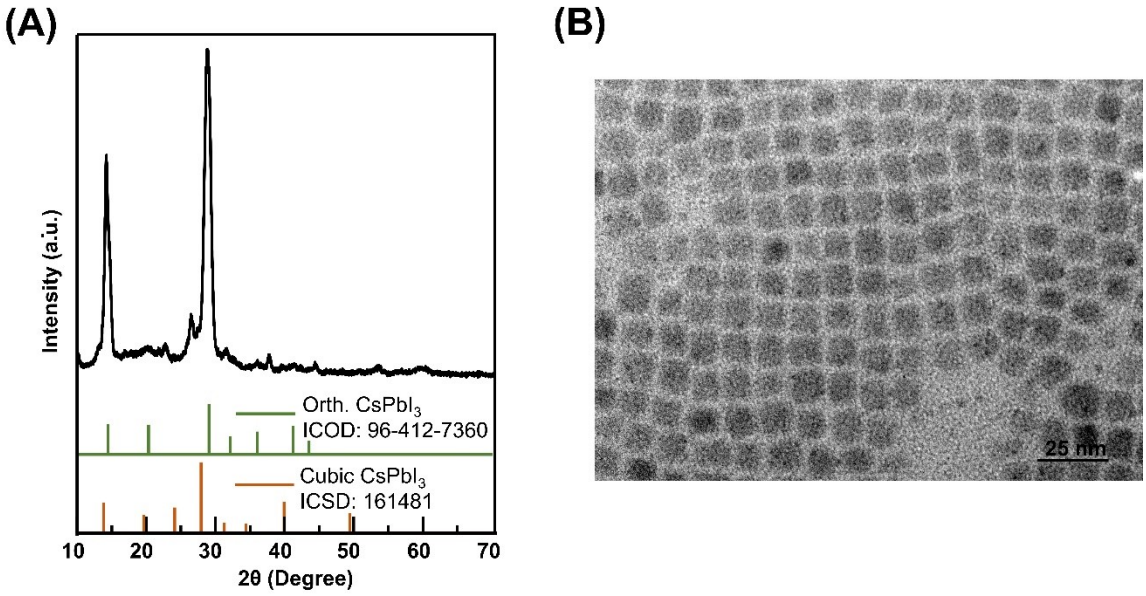

Figure S8. The XRD patterns (A) and the TEM image (B) of the ZTIB added $CsPbI_3$ QDs sample synthesized without the presence of excess 1-ODE.

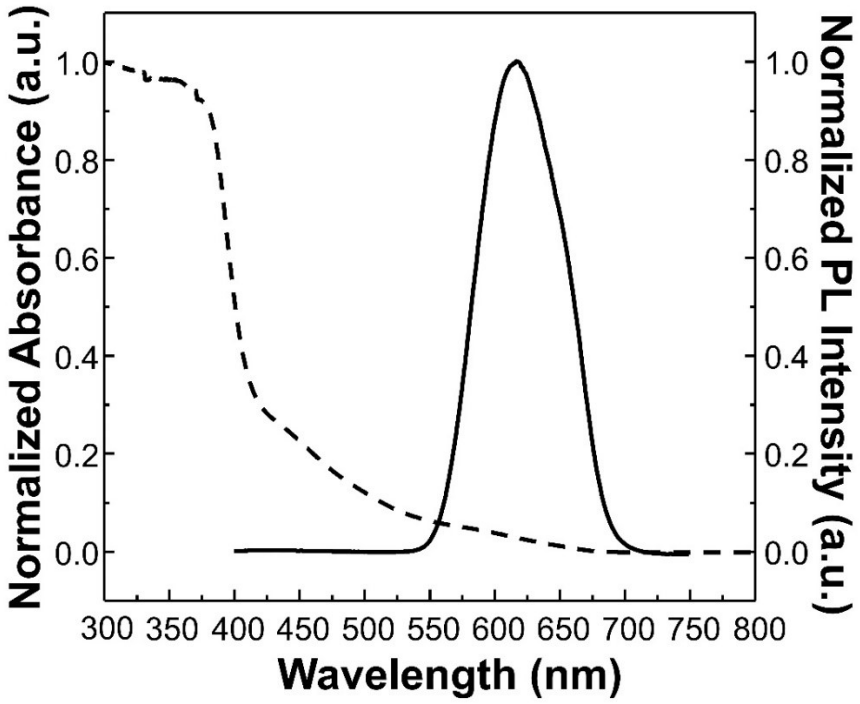

Figure S9. The PL (solid line) and UV-vis (dashed line) spectra of ZTIB added-$CsPbI_3$ QDs stock solution without the presence of excess 1-ODE; The measurement was conducted in colloidal state solution using *n*-hexane as a solvent. The λ_{ex} = 365 nm was used when measuring the PL emission.

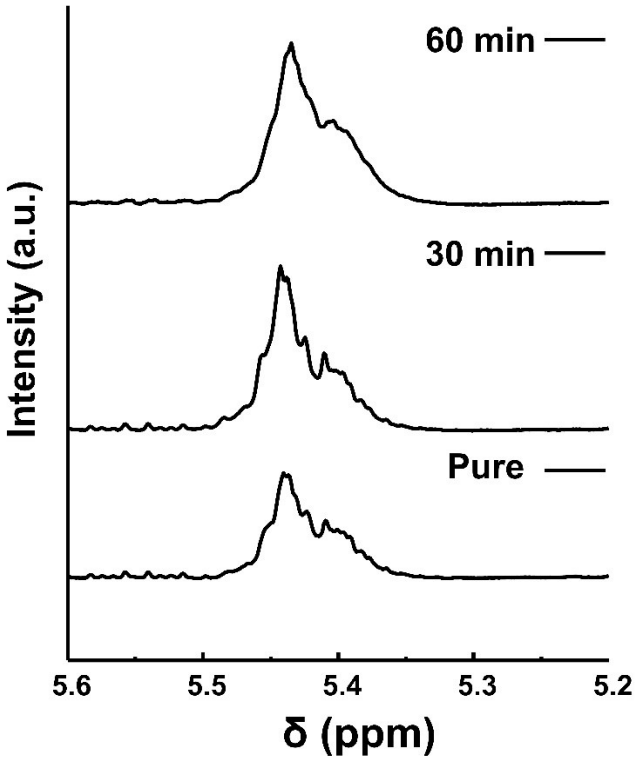

Figure S10. ^{1}H NMR spectra of pure and time-dependent 1-ODE were added to the $CsPbI_3$ QDs sample without the presence of UV light

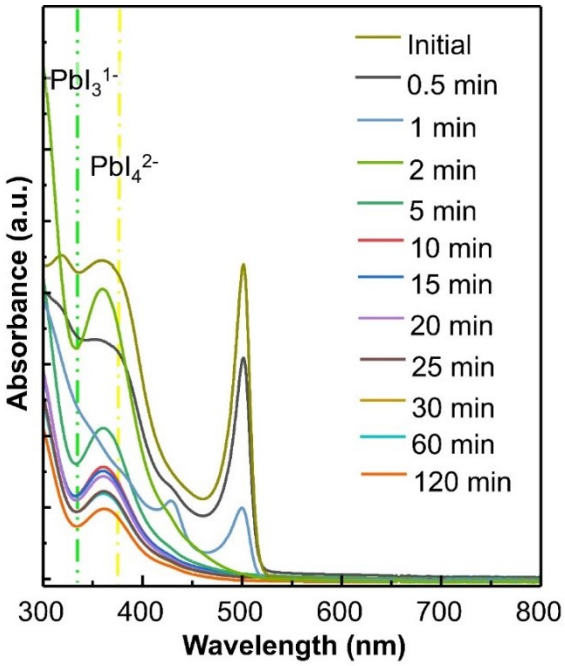

Figure S11. UV-vis spectra of MP-nanorods and $CsPbI_3$ QDs colloidal mixture during the 1-ODE treatment over time

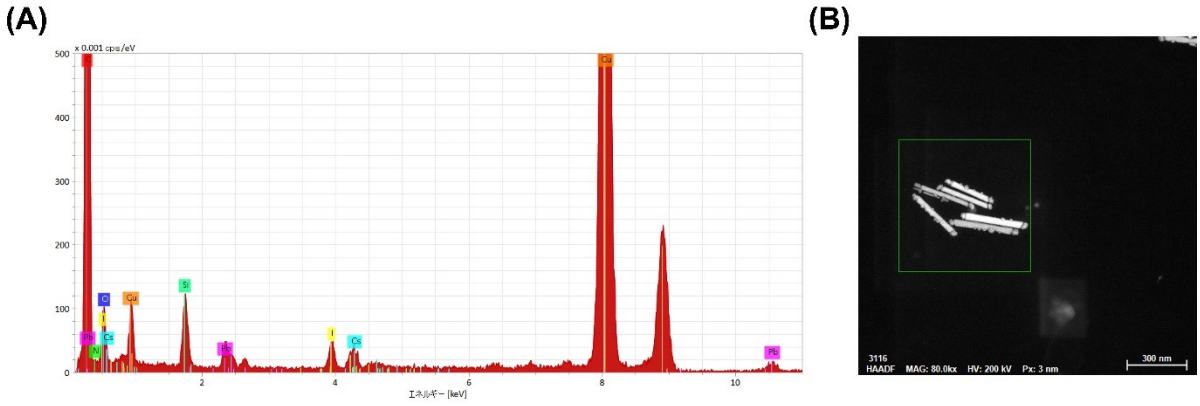

Figure S12. EDX spectrum (A) and respectfully selected area (B) of isolated MP-nanorods

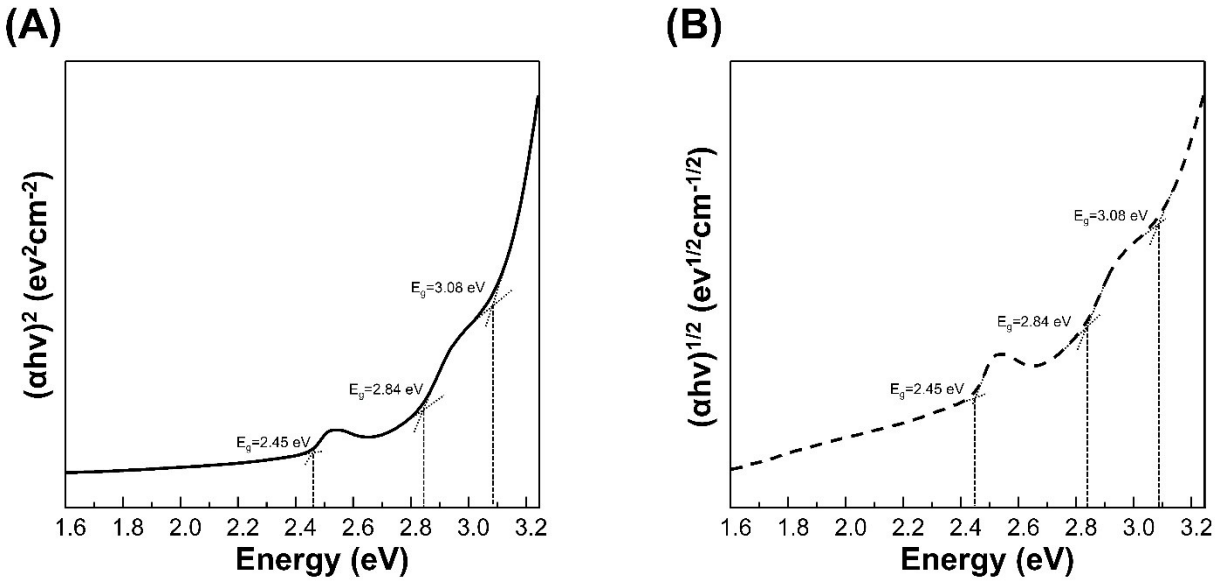

Figure S13. Tauc plots for direct (A) and indirect (B) band gap of MP-nanorods

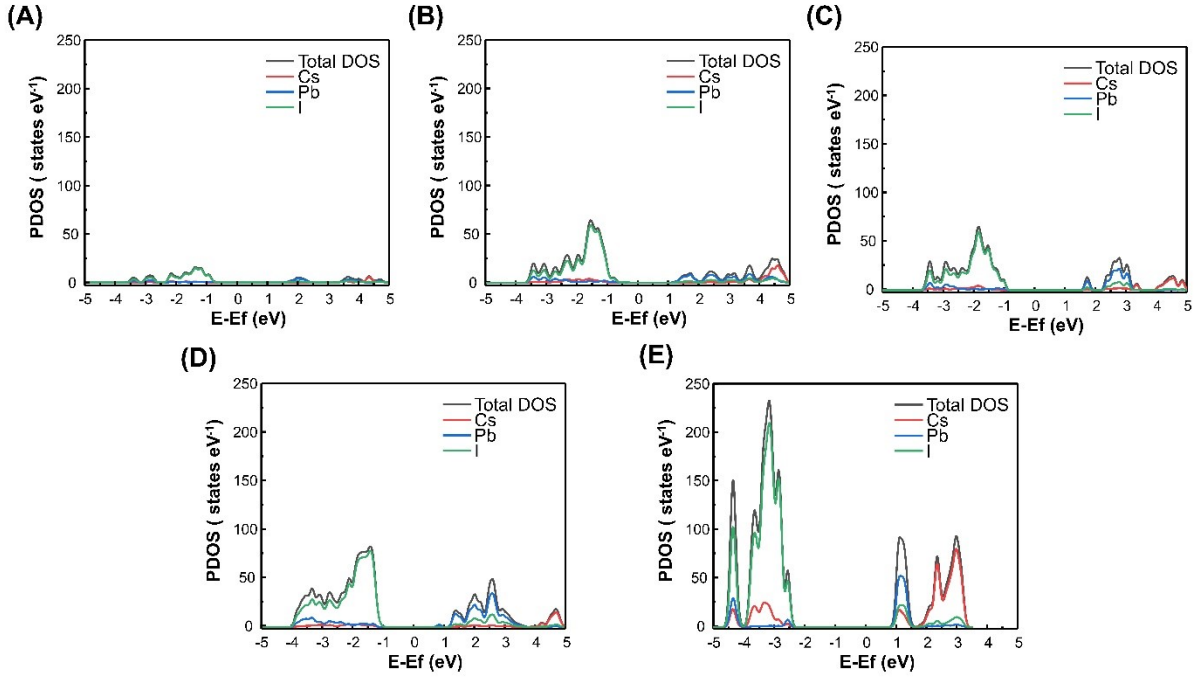

Figure S14. Phonon density of state (PDOS) spectra of α-$CsPbI_3$ (A), δ-$CsPbI_3$ (B), γ-$CsPbI_3$ (C), $CsPb_2I_5$ (D), and Cs_4PbI_6 (E)

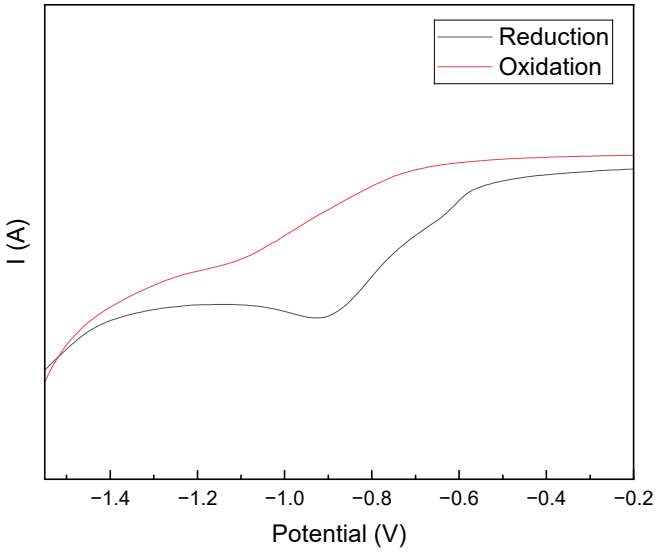

Figure S15. The extended linear sweep voltammetry pattern (oxidation and reduction) of MP-$CsPbI_3$ NRs

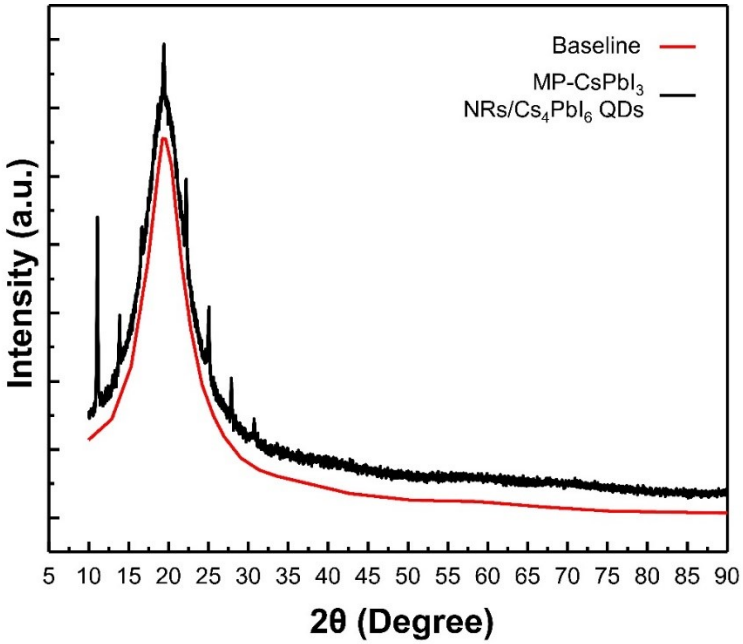

Figure S16. The XRD pattern of MP-$CsPbI_3$ NRs/Cs_4PbI_6 QDs (balck line) and the baseline of solvent mixture (toluene and 1-ODE) (red line)

Table S1. Simulated band gap and charge densityof each crystal phases

Phase	Maximum Charge Density (e/bohr³)	Minimum Charge Density (e/bohr³)	Band Gap (eV)
α-$CsPbI_3$	0.79998	0.00046	2.4553
γ-$CsPbI_3$	0.80317	0.00057	1.6363
δ-$CsPbI_3$	0.80254	0.00062	2.7282
$CsPb_2I_5$	0.80323	0.00069	1.9032
Cs_4PbI_6	0.80175	0.00016	3.4031