

Supporting Information for  
**Emission variation and spontaneous deformation of CsPbBr<sub>3</sub>  
perovskite nanoplatelets at low concentrations**

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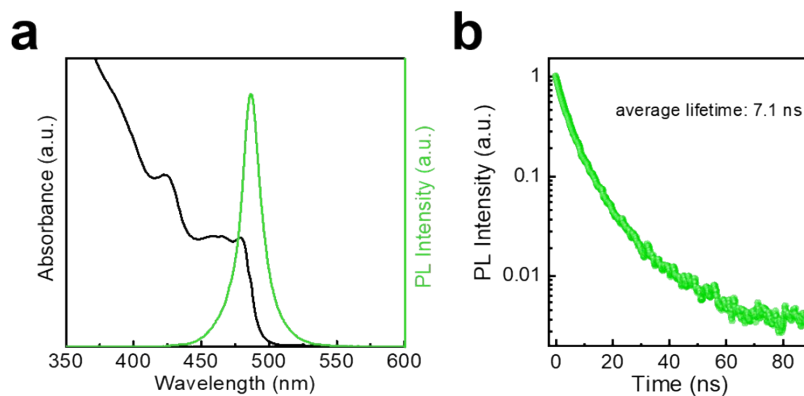


Fig. S1 (a) Absorption/PL spectra and (b) time-resolved PL decay curve of fresh 5ML  $h$ -NPLs measured at  $D_0$ .

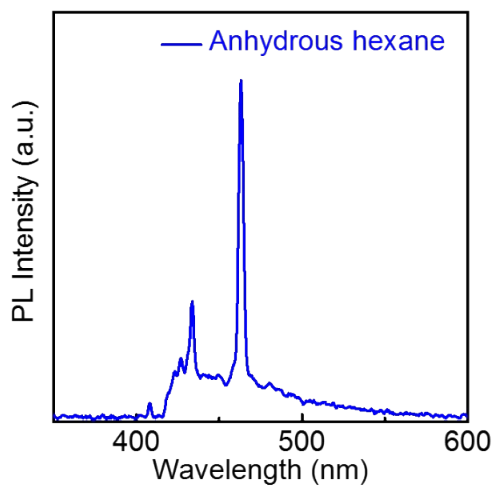


Fig. S2 PL spectrum of anhydrous hexane.

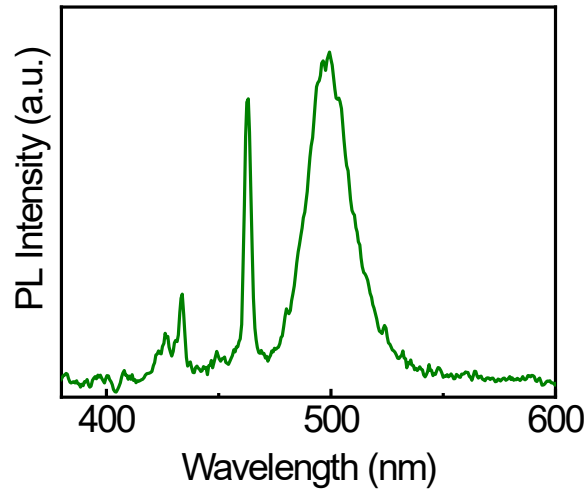


Fig. S3 PL spectrum of fresh 5ML *h*-NPLs measured at  $D_{2^{19}}$ .

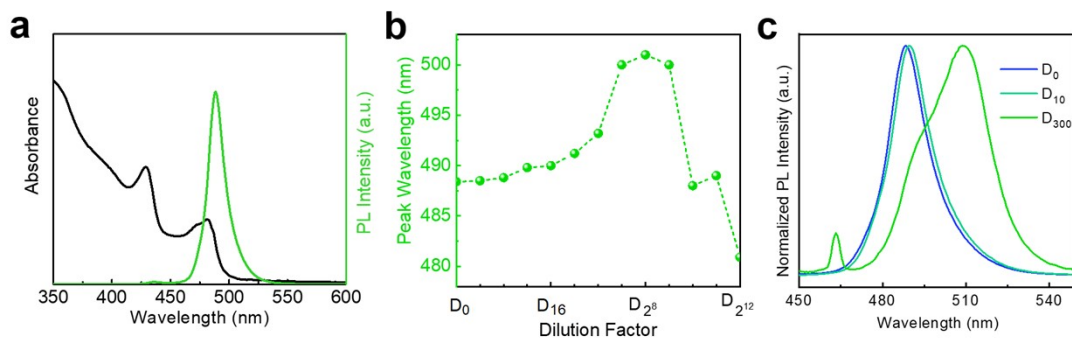


Fig. S4 Dilution results of fresh 5ML *h*-NPLs. (a) Absorption and PL spectra measured at  $D_0$ . (b) Evolution of peak wavelength upon the stepwise dilutions. (c) PL spectra result during large multiples dilution method in two steps: the stock solution ( $D_0$ ) is directly diluted for 10-fold in the first step ( $D_{10}$ ), and then it is secondly diluted to 300-fold ( $D_{300}$ ).

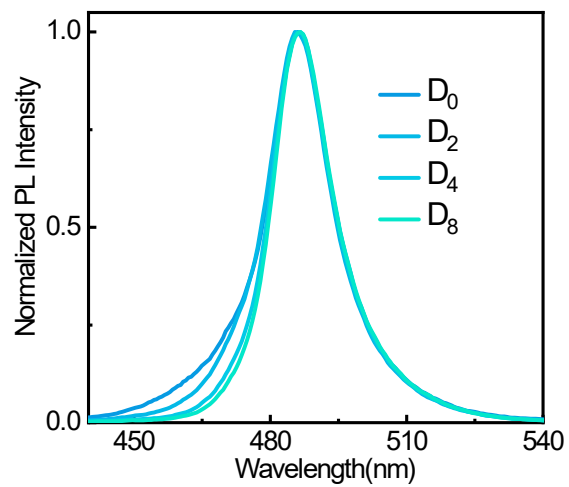


Fig. S5 Normalized PL spectra of fresh 5ML *h*-NPLs at the initial stage of stepwise dilutions.

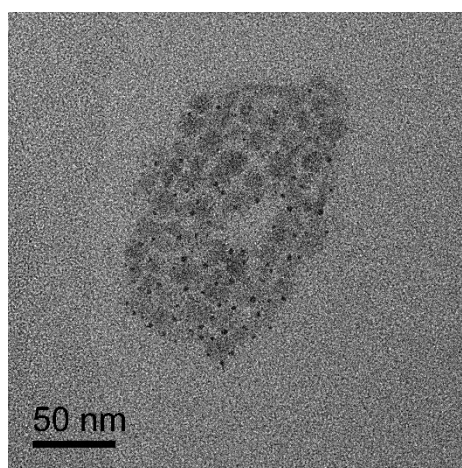


Fig. S6 TEM image of fresh 5ML *h*-NPLs after several rounds of stepwise dilutions.

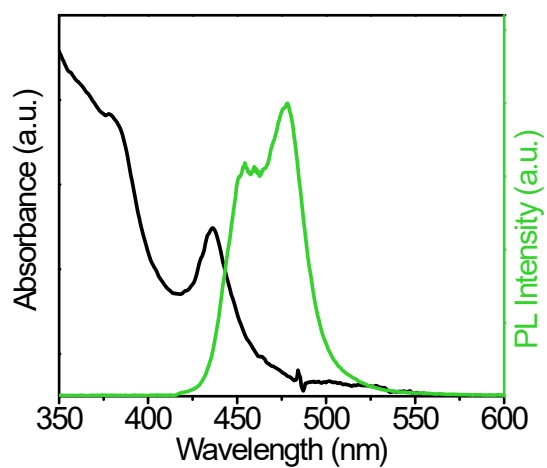


Fig. S7 Absorption and PL spectra of fresh 3 (or 4) ML *h*-NPLs measured at  $D_0$ .

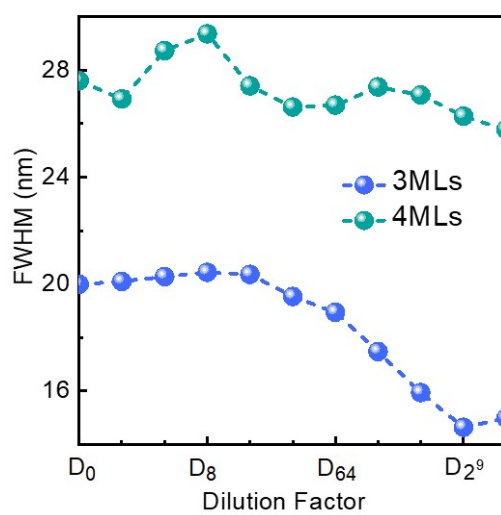


Fig. S8 FWHM of fresh 3 (or 4) ML *h*-NPLs with increasing dilution.

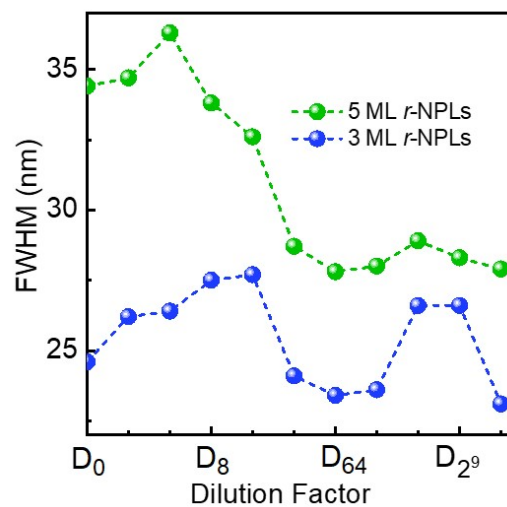


Fig. S9 FWHM of fresh 5 ML *r*-NPLs and 3 ML *r*-NPLs with increasing dilution.

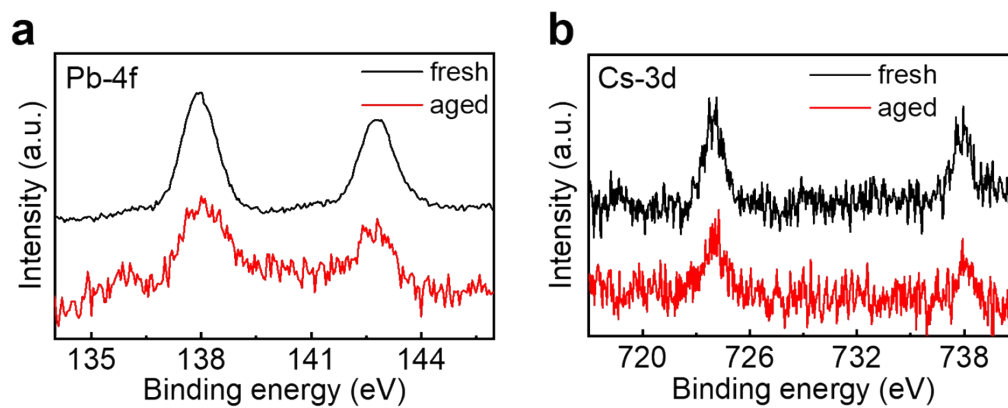


Fig. S10 XPS spectra corresponding to (a) Pb 4f and (b) Cs 3d of fresh and aged 5ML *h*-NPLs.

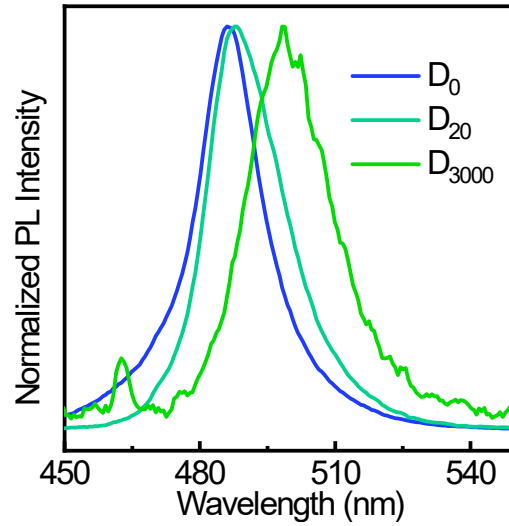


Fig. S11 PL spectra result of aged 5 ML *h*-NPLs during large multiples dilution method in two steps: the stock solution ( $D_0$ ) is directly diluted for 20-fold in the first step ( $D_{20}$ ), and then it is secondly diluted to 3000-fold ( $D_{3000}$ ).

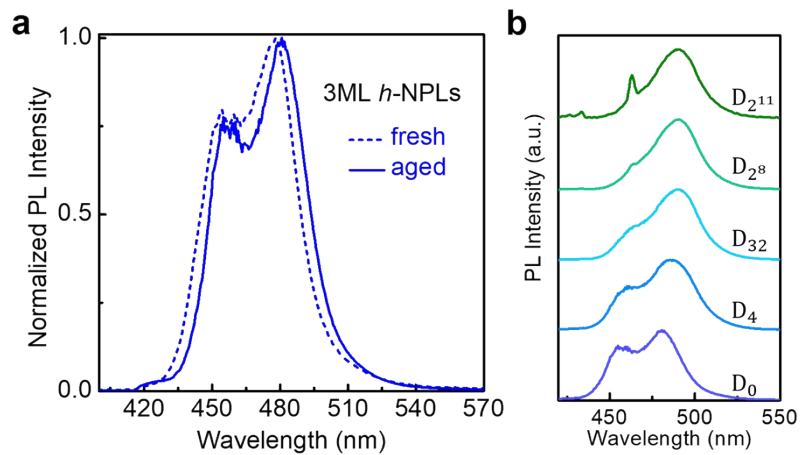


Fig. S12 (a) Normalized PL spectra of fresh and aged 3 (or 4) ML *h*-NPLs at  $D_0$ . (b) A series of PL spectra of aged 3 (or 4) ML *h*-NPLs upon dilution.

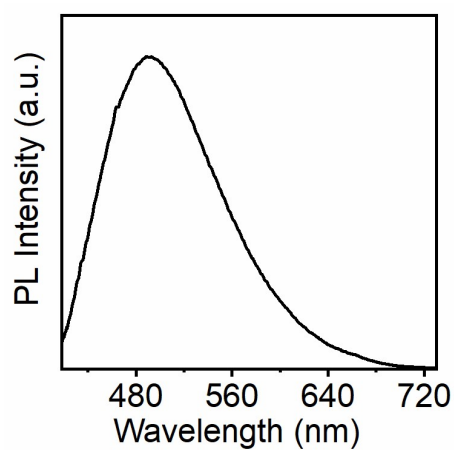


Fig. S13 PL spectrum of PbBr<sub>2</sub>-saturated solution.

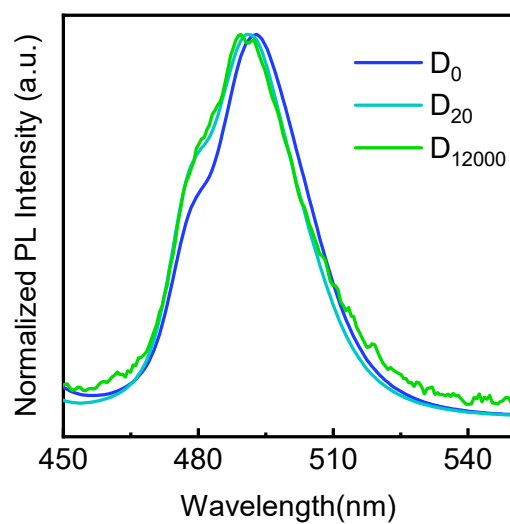


Fig. S14 PL spectra result of fresh 5 ML *h*-NPLs diluted in PbBr<sub>2</sub>-saturated solution.

The NPLs are diluted in two steps: the stock solution ( $D_0$ ) is directly diluted for 20-fold in the first step ( $D_{20}$ ), and then it is secondly diluted to 12000-fold ( $D_{12000}$ ).



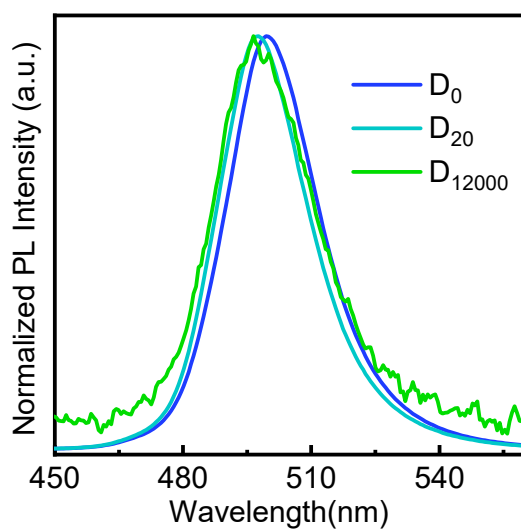


Fig. S15 PL spectra result of fresh 5 ML *h*-NPLs (with lecithin exceeding 1 h) during large multiples dilution method in two steps: the stock solution ( $D_0$ ) is directly diluted for 20-fold in the first step ( $D_{20}$ ), and then it is secondly diluted to 12000-fold ( $D_{12000}$ ).

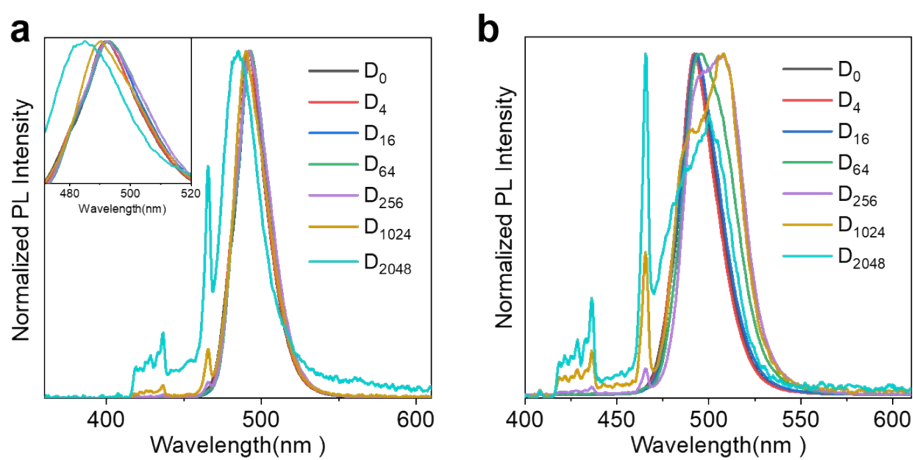


Fig. S16 PL results of fresh 5 ML *h*-NPLs during the stepwise dilution. (a) diluted in toluene after adding the zwitterionic polymer solution (inset for detail of spectral

peaks), (b) diluted in toluene without any treatment.

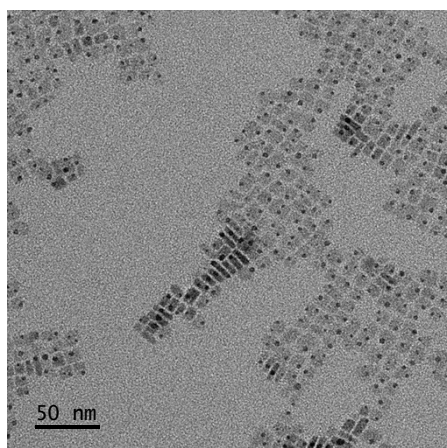


Fig. S17 TEM image of fresh 5 ML *h*-NPLs after adding the zwitterionic polymer solution at  $D_0$ .

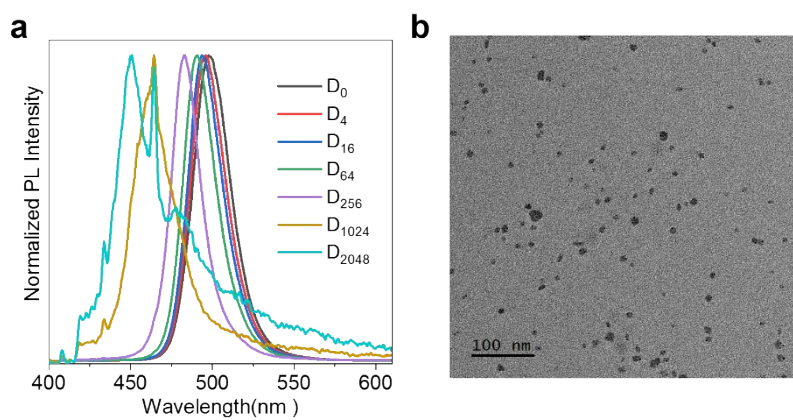


Fig. S18 (a) PL results and (b) TEM image (at  $D_0$ ) of the sample diluted in anhydrous ethyl acetate.