Electronic Supplementary Material (ESI) for Faraday Discussions.

Supporting Information

Tetraphenylethylene Derivatives Capped $CH_3NH_3PbBr_3$ Nanocrystals: AIE-Activated Assembly into Superstructures

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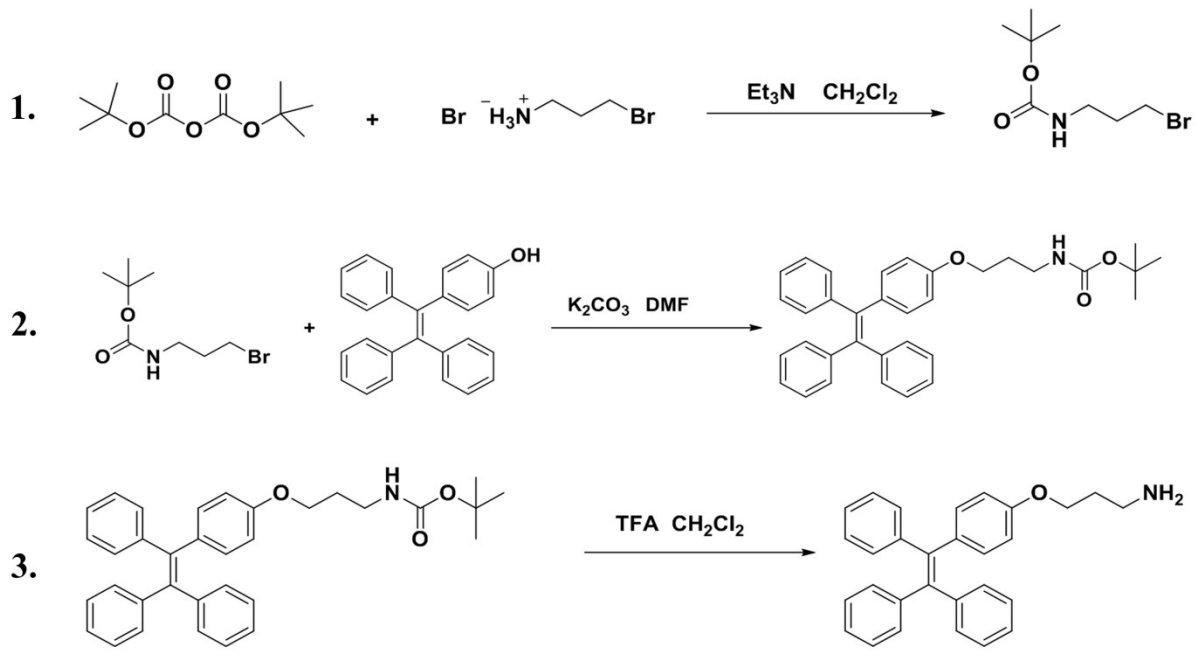

Scheme S1. Synthetic route of TPEs-3.

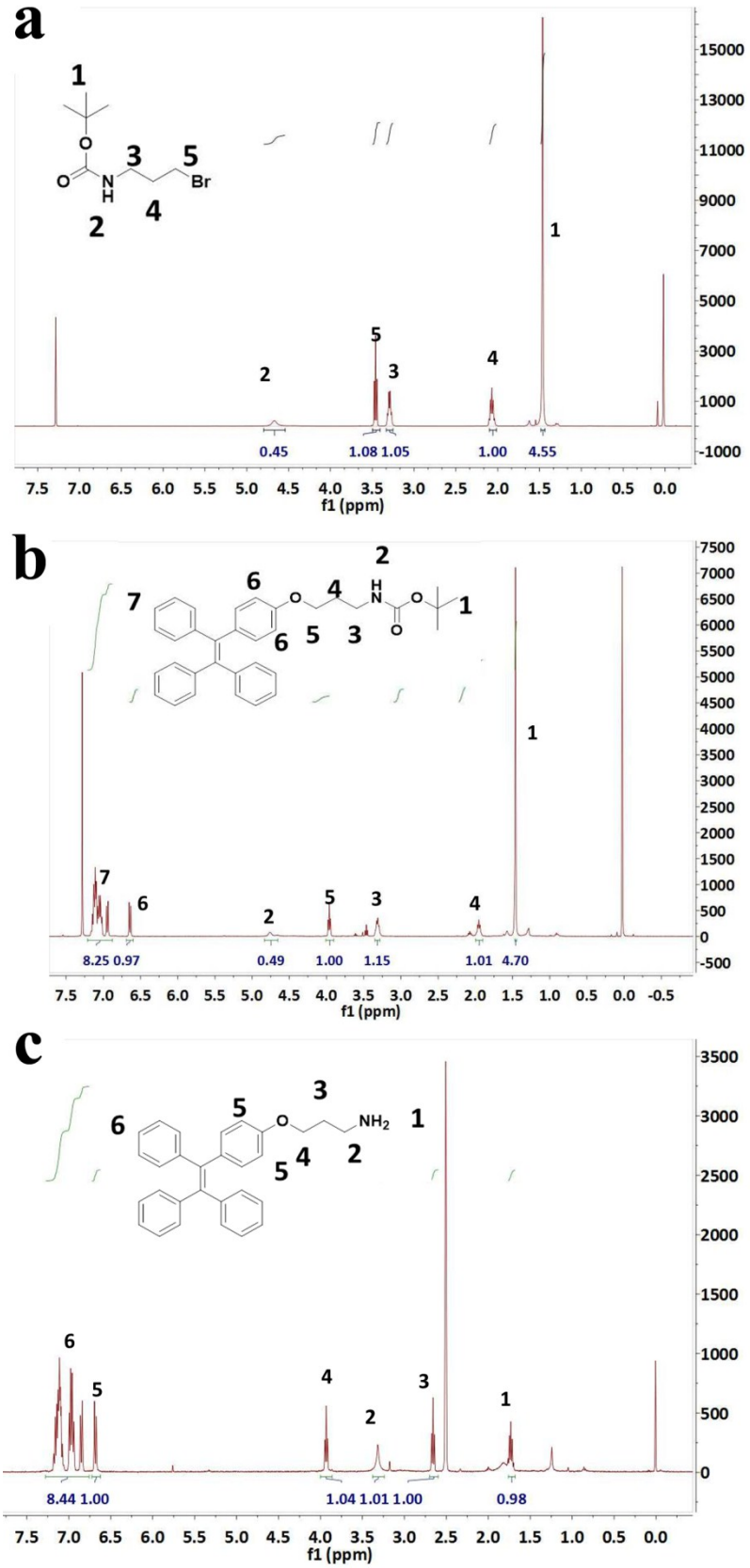

Figure S1. ^{1}H NMR spectra of tert-butyl (3-bromopropyl)carbamate (a), tert-butyl (3-(4-(1,2,2-triphenylvinyl)phenoxy)propyl)carbamate (b) and 3-(4-(1,2,2-triphenylvinyl)phenoxy)propan-1-amine (c).

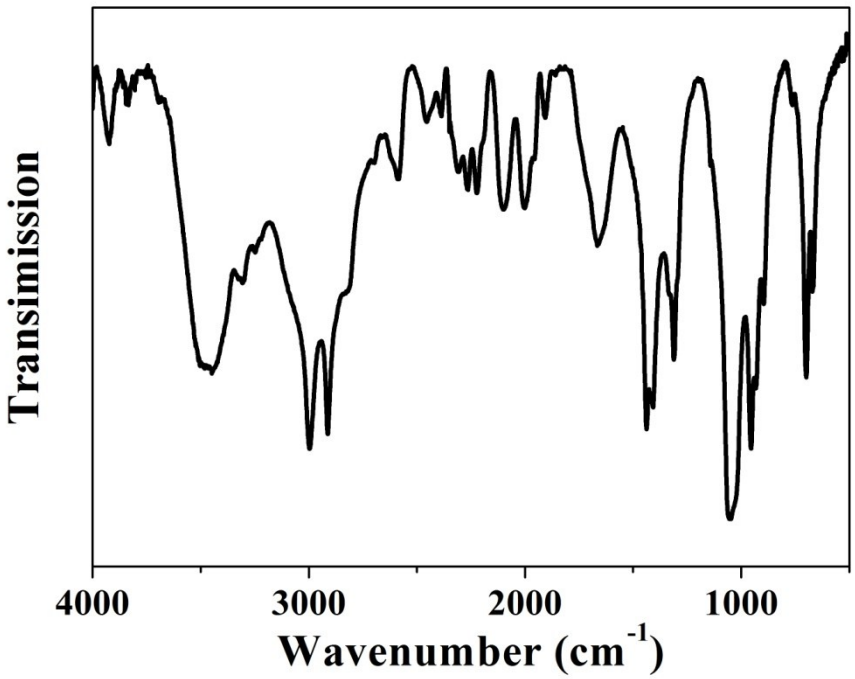

Figure S2. FTIR spectrum of TPEs-3.

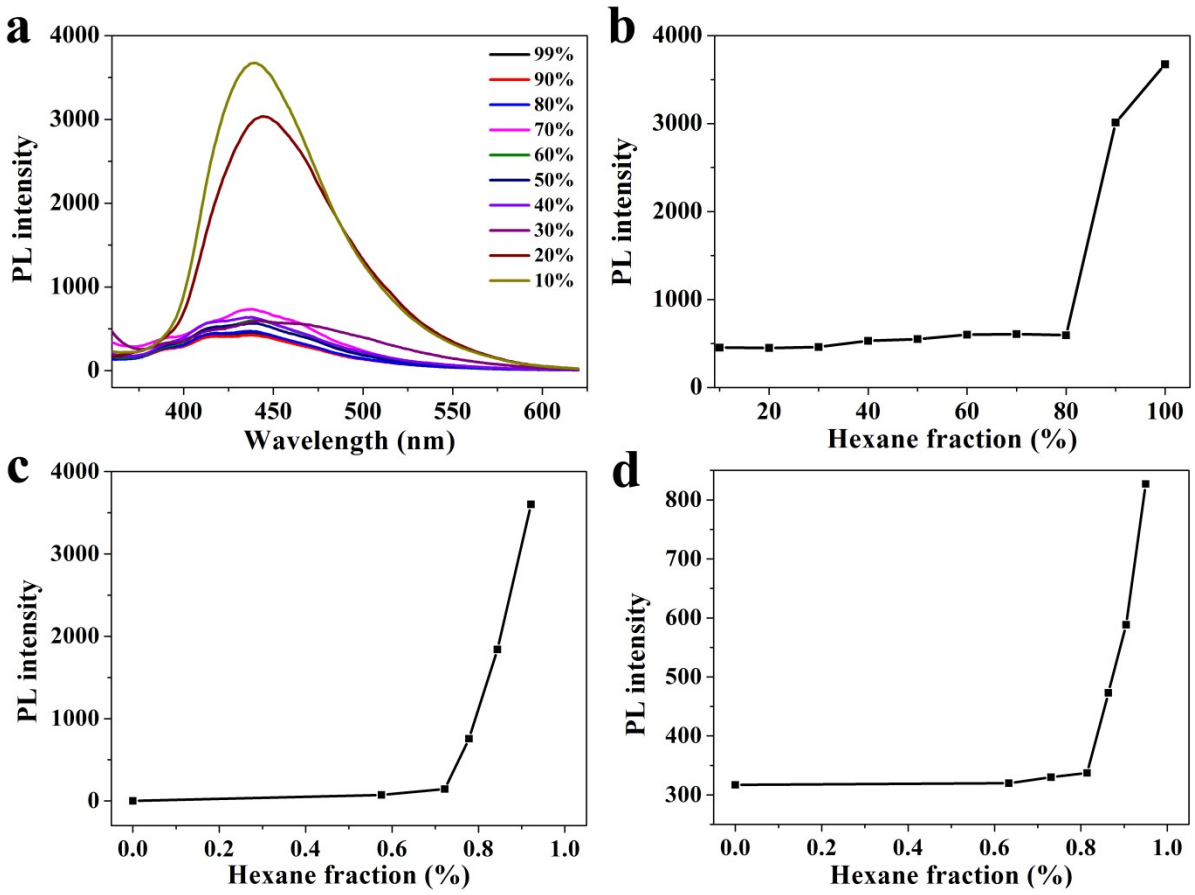

Figure S3. a. Emission spectra of TPEs-3 dissolved in dichloromethane/hexane mixtures with different volume ratio. b, c, d. Plot of PL intensities of TPE derivatives (TPEs-3(b), TPEs-4(c), TPEs-8(d)) versus hexane fraction.

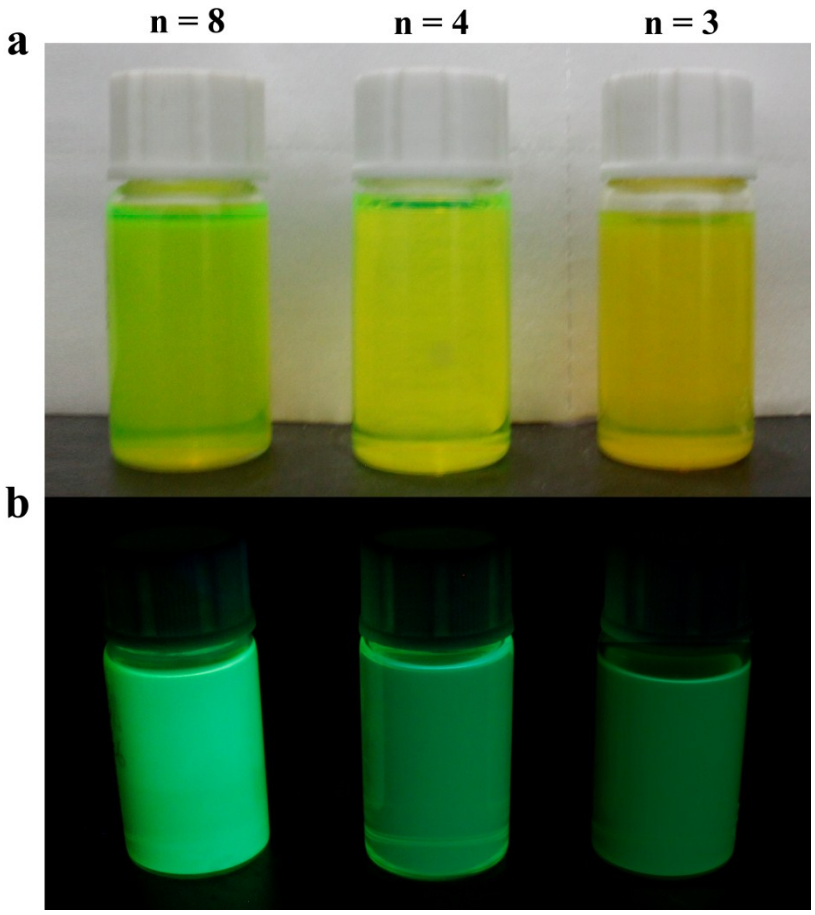

Figure S4. Photos of typical solutions of $CH_3NH_3PbBr_3$ nanocrystals fabricated using TPE derivatives with different chain length. a. Under ambient light. b. Under UV (365 nm) radiation.

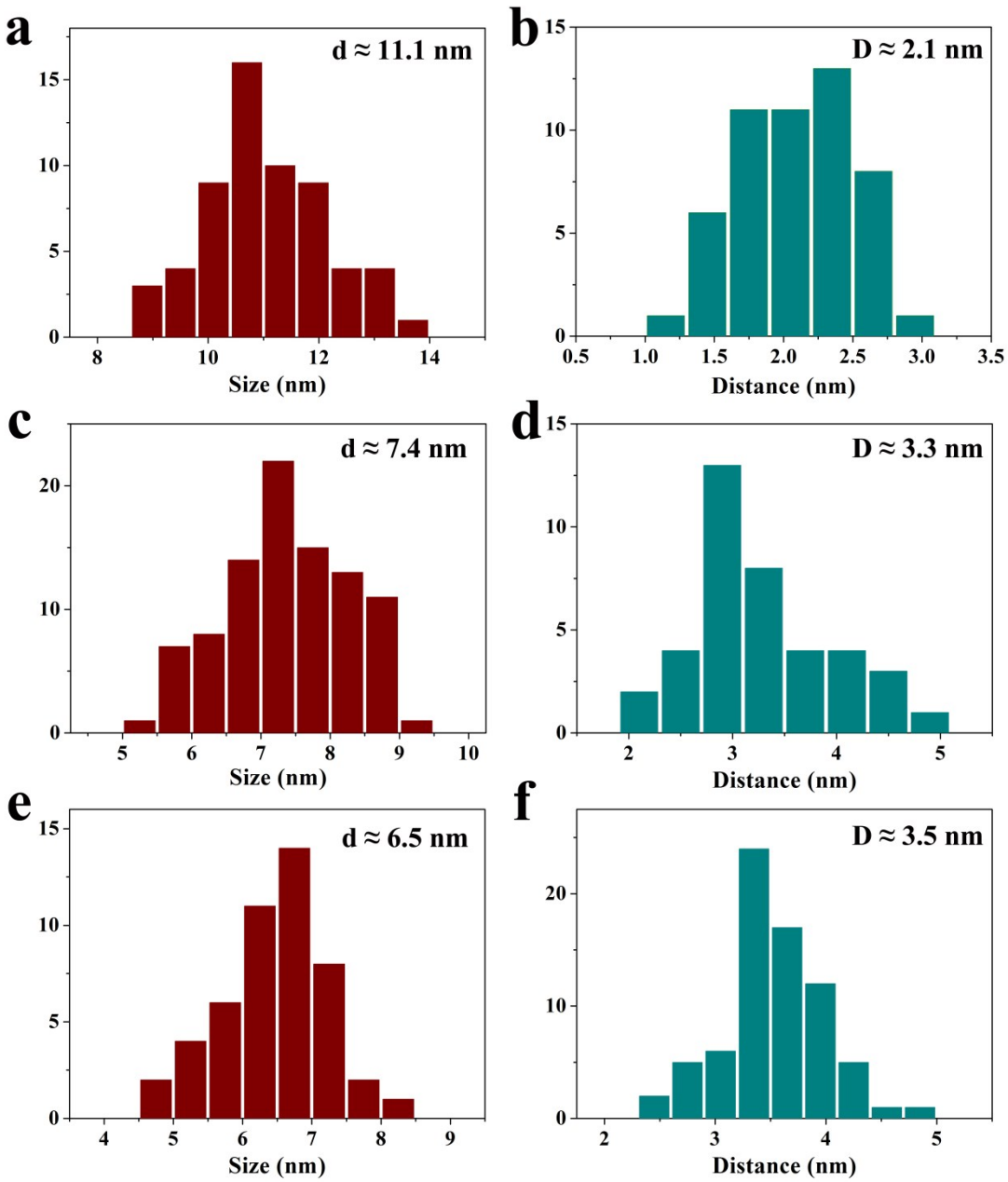

Figure S5. Size and distance distribution of resultant $CH_3NH_3PbBr_3$ nanocrystals. a, c, e. Size distributions of $CH_3NH_3PbBr_3$ nanocrystals fabricated by TPEs-3, TPEs-4 and TPEs-8. b, d, f. Distance distributions of $CH_3NH_3PbBr_3$ nanocrystals fabricated by TPEs-3, TPEs-4 and TPEs-8.

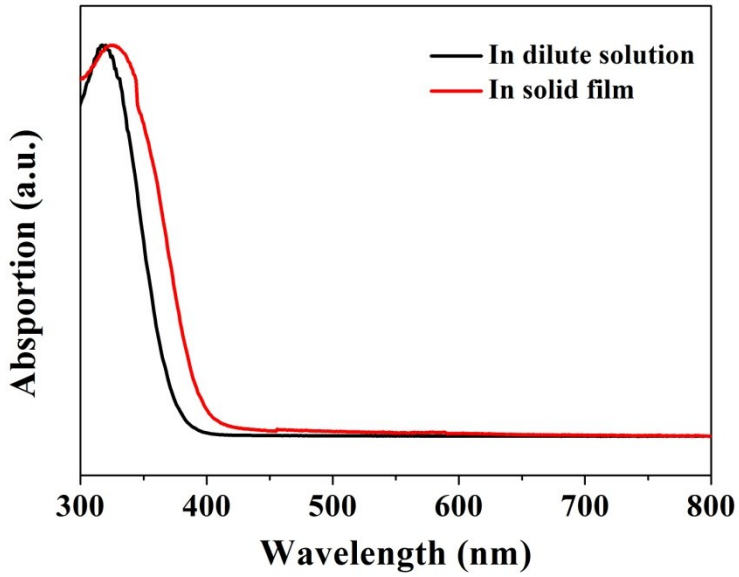

Figure S6. Absorption spectra of TPE derivative (n = 3) in dilute solution (black) and in solid film (red).

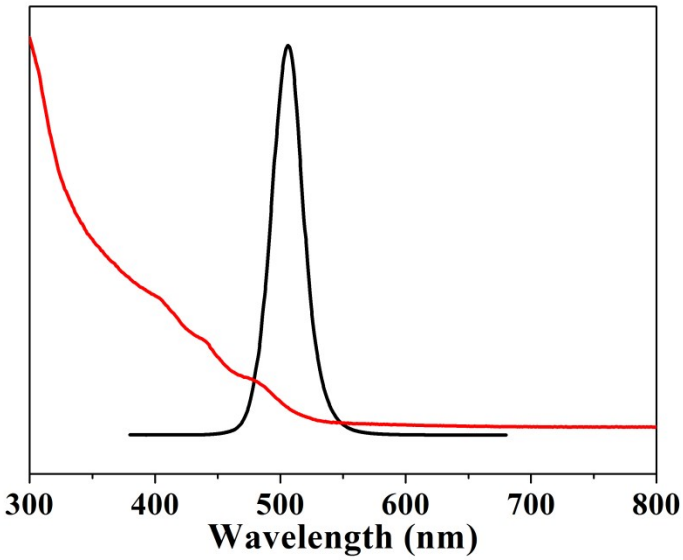

Figure S7. Absorption and PL spectra of $CH_3NH_3PbBr_3$ nanocrystals fabricated using octylamine.