

Enhanced UV Stability of 2D Perovskites

$(\text{HO}(\text{CH}_2)_4\text{NH}_3)_2(\text{MA})_{n-1}\text{Pb}_n\text{I}_{3n+1}$ by Hydrogen Bonds

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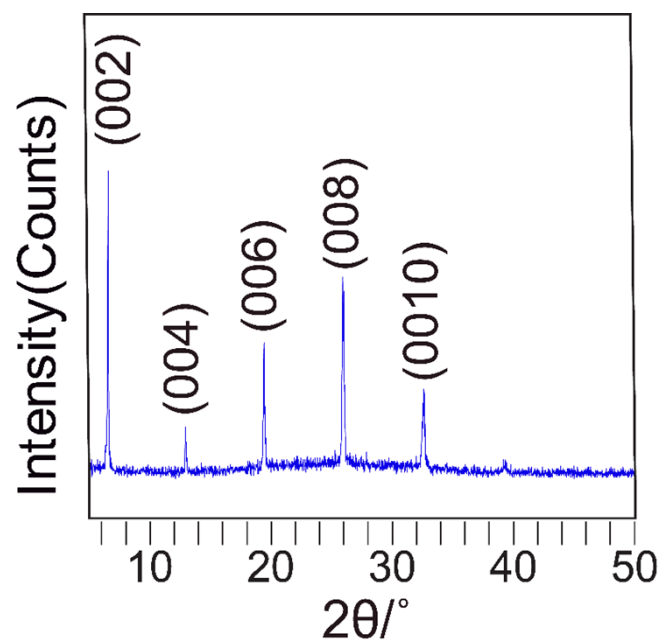


Figure S1 XRD spectrum of $(\text{BA})_2\text{PbI}_4$

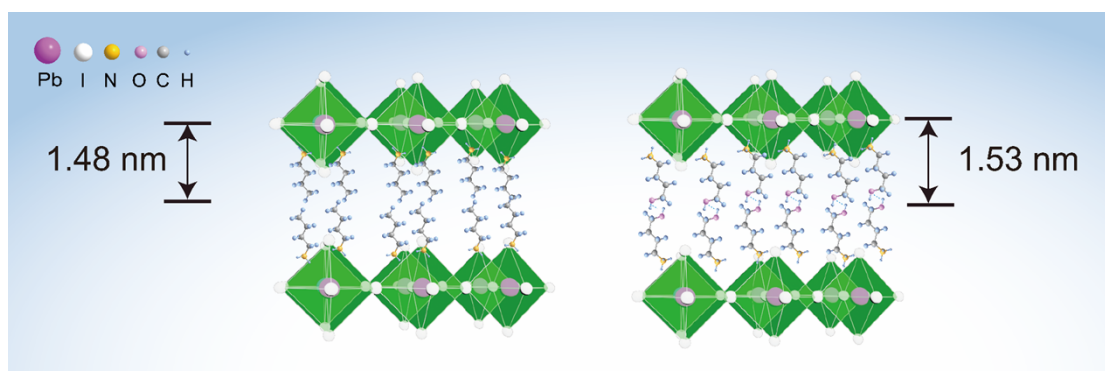


Figure S2 The illustration of the (002) planes of $(\text{BA})_2\text{PbI}_4$ and $(\text{BA-OH})_2\text{PbI}_4$

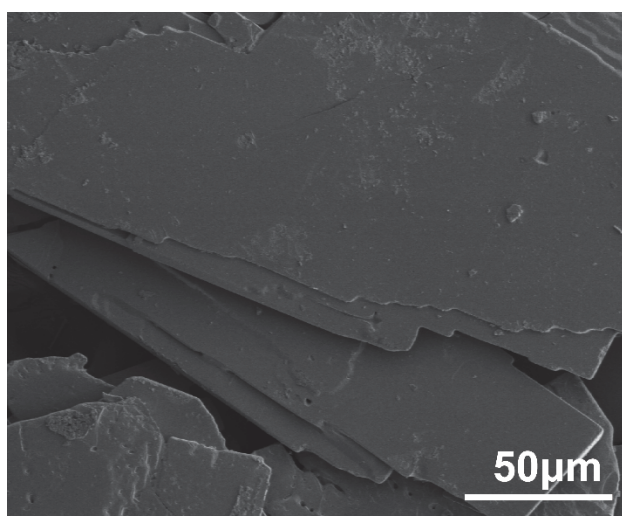


Figure S3 The SEM image of $(\text{BA})_2\text{PbI}_4$

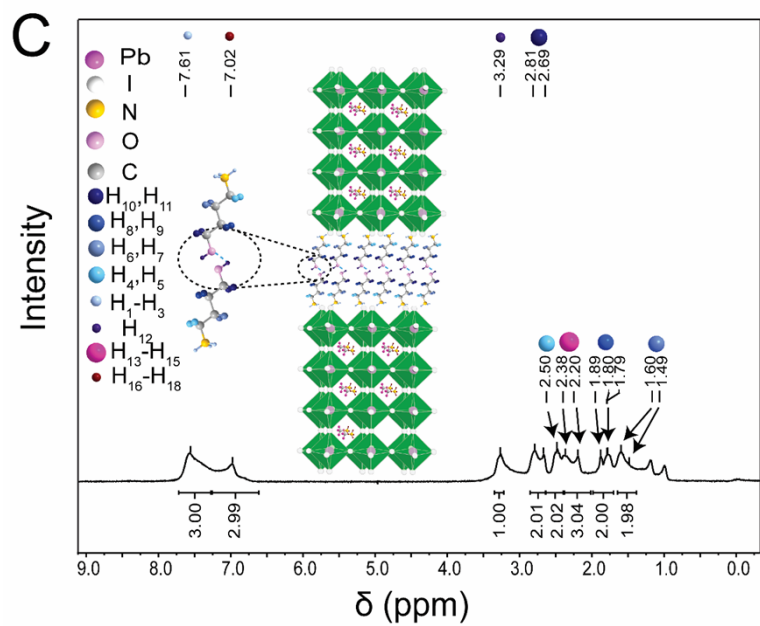
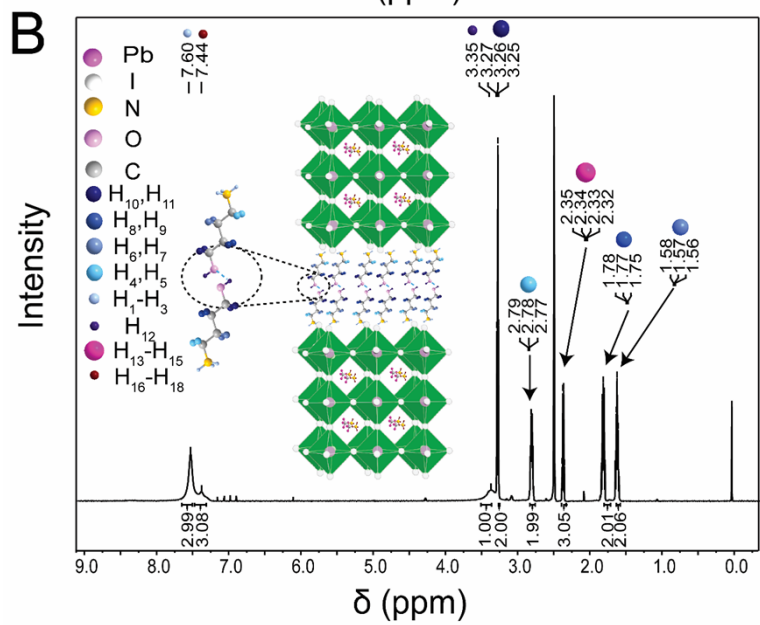
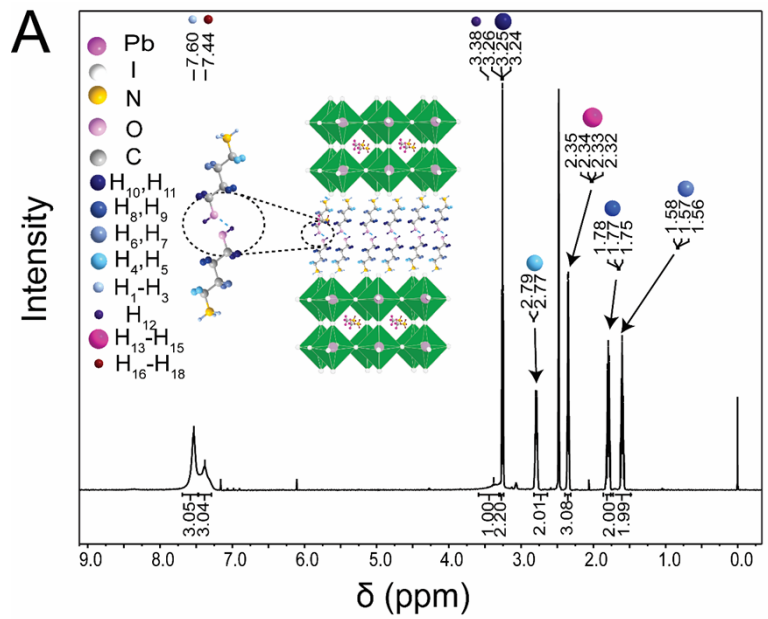


Figure S4 The ^1H NMR spectra of $(\text{BA-OH})_2(\text{MA})_{n-1}\text{Pb}_n\text{I}_{3n+1}$: (A) $n=2$, (B) $n=3$, (C) $n=4$.

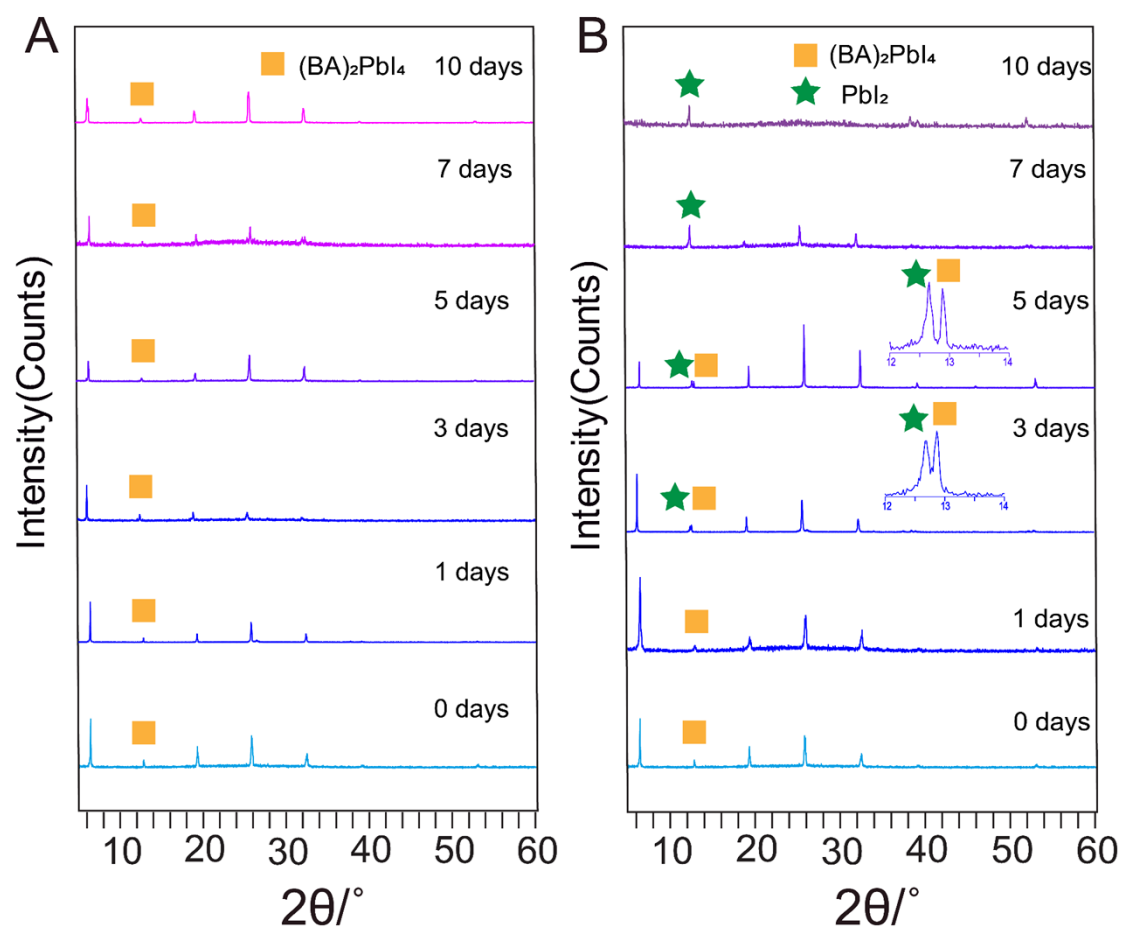


Figure S5 XRD patterns of $(\text{BA})_2\text{PbI}_4$ (A) without and (B) with UV irradiation.

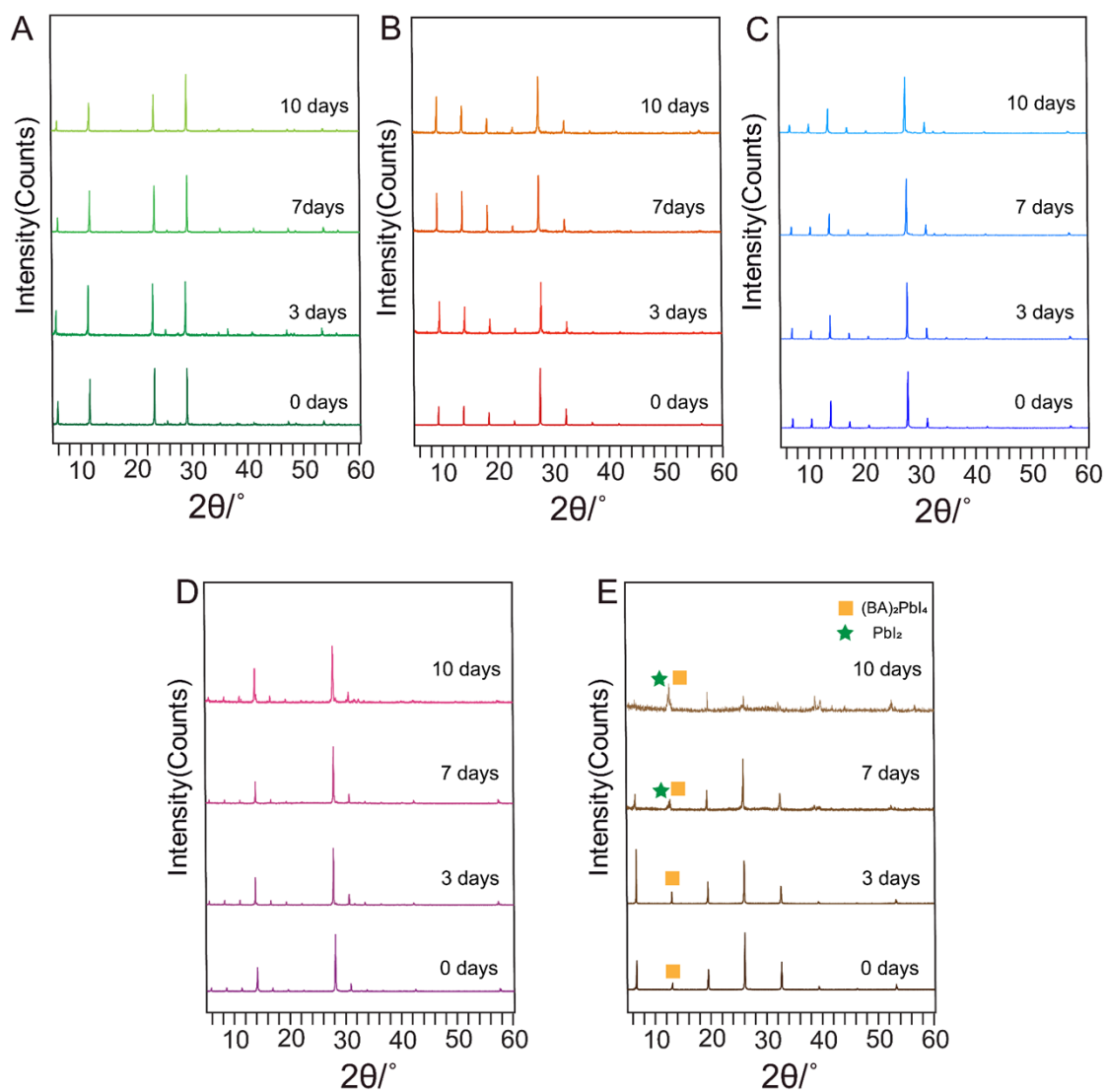


Figure S6 XRD patterns of $(\text{BA-OH})_2(\text{MA})_{n-1}\text{Pb}_n\text{I}_{3n+1}$ (A) $n=1$, (B) $n=2$, (C) $n=3$, (D) $n=4$ and (E) $(\text{BA})_2\text{PbI}_4$ with UV irradiation from 0 to 10 days (0% RH in a bag filled with N_2).

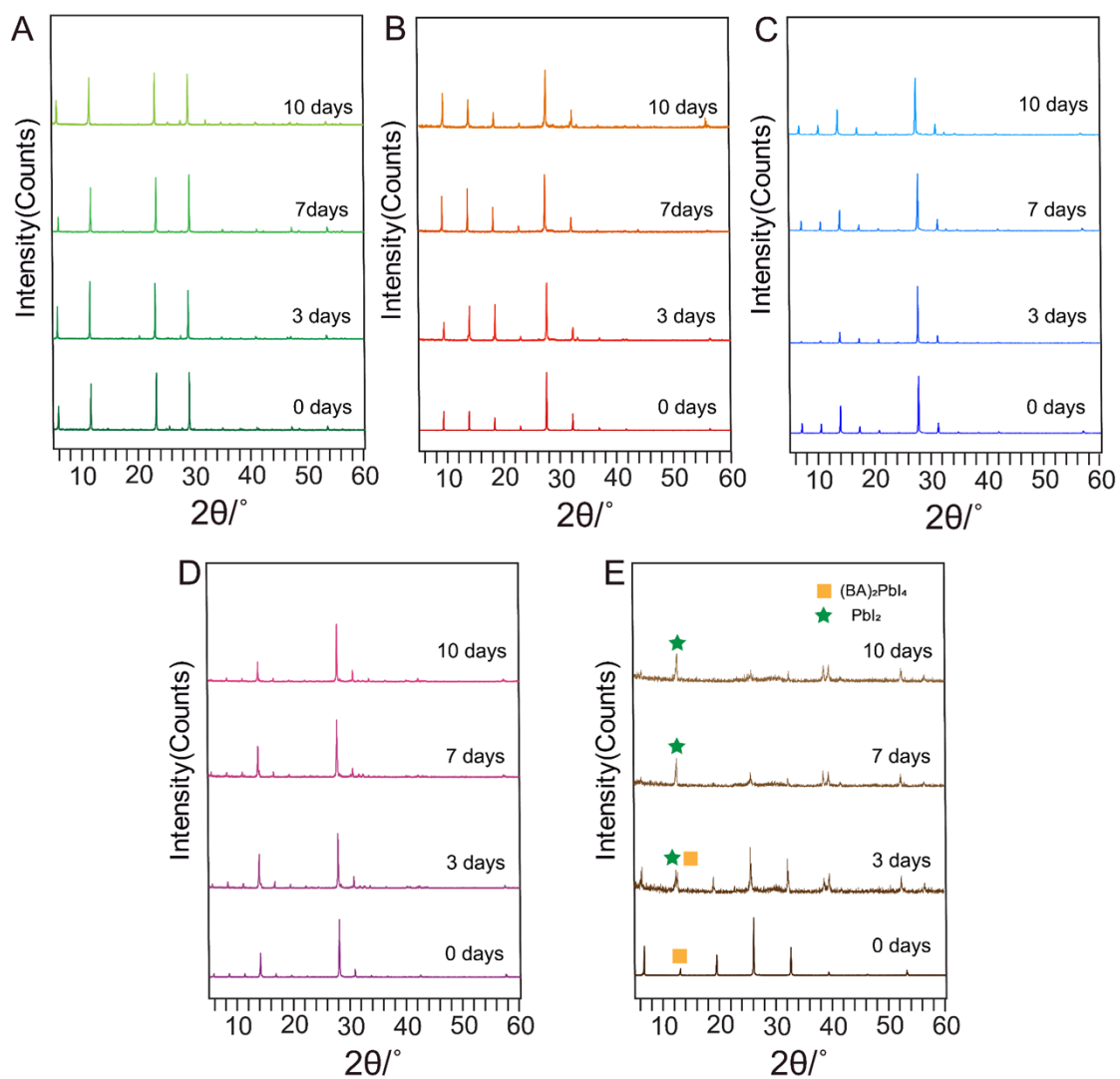


Figure S7 XRD patterns of $(\text{BA-OH})_2(\text{MA})_{n-1}\text{Pb}_n\text{I}_{3n+1}$ (A) $n=1$, (B) $n=2$, (C) $n=3$, (D) $n=4$ and (E) $(\text{BA})_2\text{PbI}_4$ with UV irradiation from 0 to 10 days (15% RH).

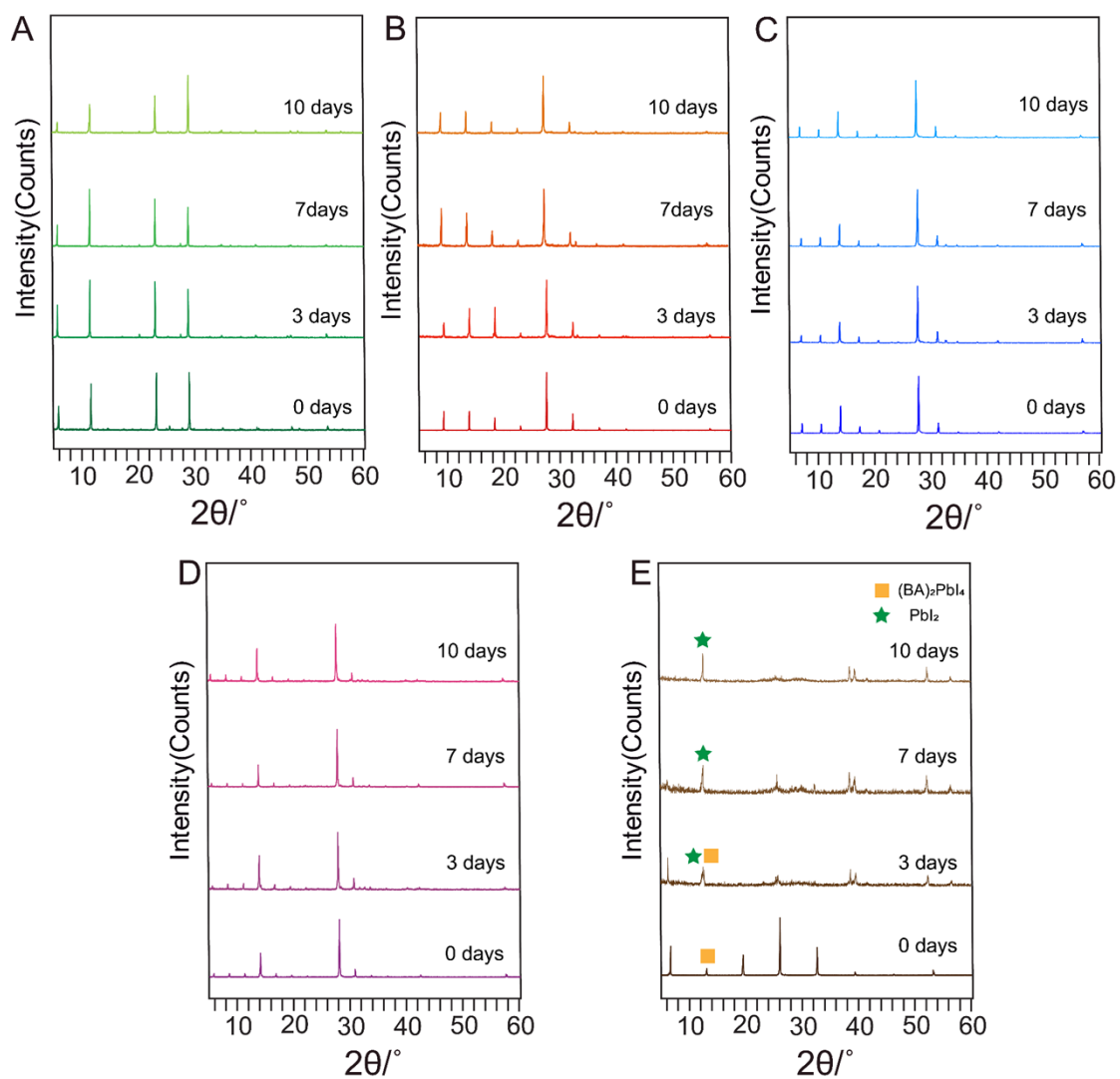


Figure S8 XRD patterns of $(\text{BA-OH})_2(\text{MA})_{n-1}\text{Pb}_n\text{I}_{3n+1}$ (A) $n=1$, (B) $n=2$, (C) $n=3$, (D) $n=4$ and (E) $(\text{BA})_2\text{PbI}_4$ with higher energy UV light irradiation (254nm) from 0 to 10 days.

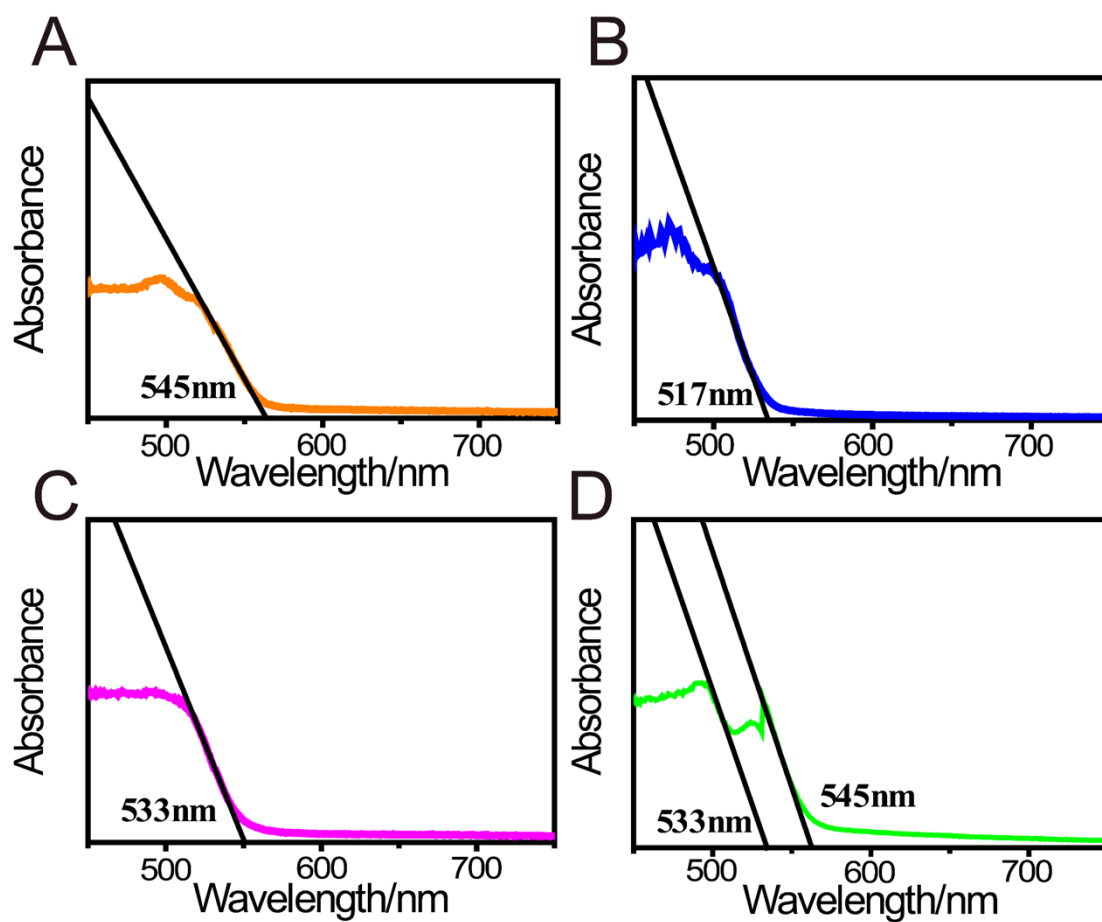


Figure S9. UV–Vis absorption spectra of (A) $(\text{BA})_2\text{PbI}_4$ before UV light irradiation, (B) $(\text{BA-OH})_2\text{PbI}_4$ after 7 days UV light irradiation, (C) PbI_2 and (D) $(\text{BA})_2\text{PbI}_4$ after 7 days UV light irradiation.