

Synthetic Control of the Photoluminescence Stability of Organolead Halide Perovskites

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Supplementary Information

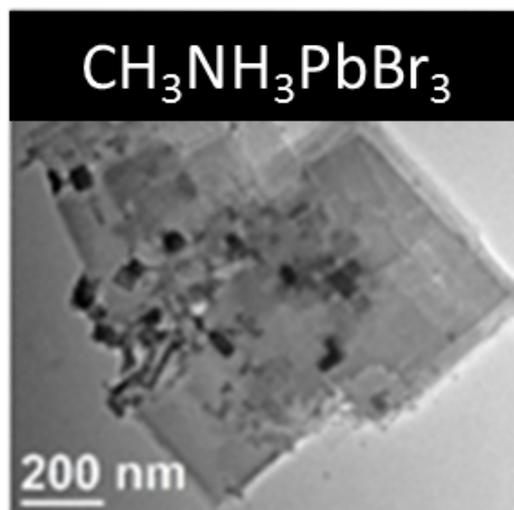


Fig. S1. TEM image of nanocrystalline $\text{CH}_3\text{NH}_3\text{PbBr}_3$ perovskites showing sheet morphology. Size = 200 ± 200 nm.

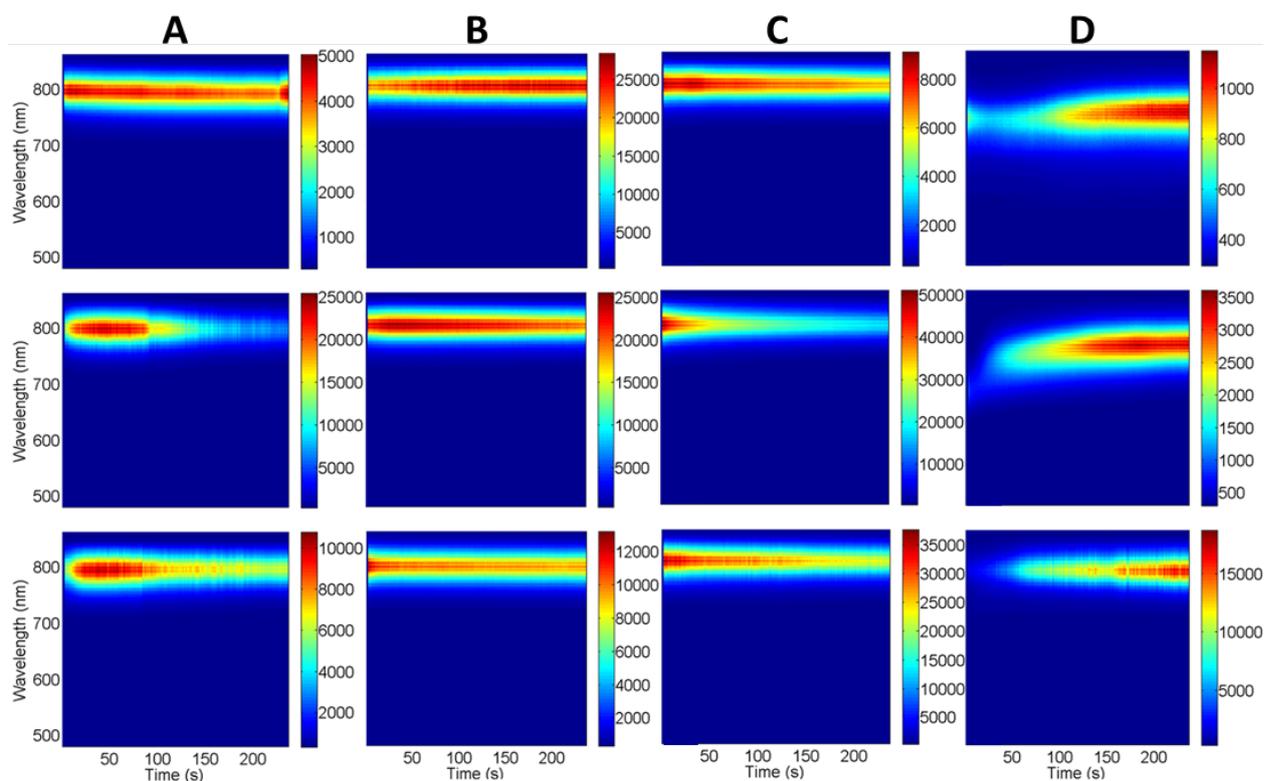


Fig. S2. Time-correlated luminescence microspectroscopy spectra of single $\text{CH}_3\text{NH}_3\text{PbI}_3$ perovskites. The plots show luminescence versus illumination time of 3 individual nanocrystals with a 532 nm laser ($1.58 \times 10^5 \text{ W/cm}^2$) for $\text{CH}_3\text{NH}_3\text{PbI}_3$ perovskites synthesized using Scheme 2. The samples are: (column A) unwashed sample, (column B) washed sample, (column C) unwashed with excess precursor, and (Column D) washed with excess precursor sample.

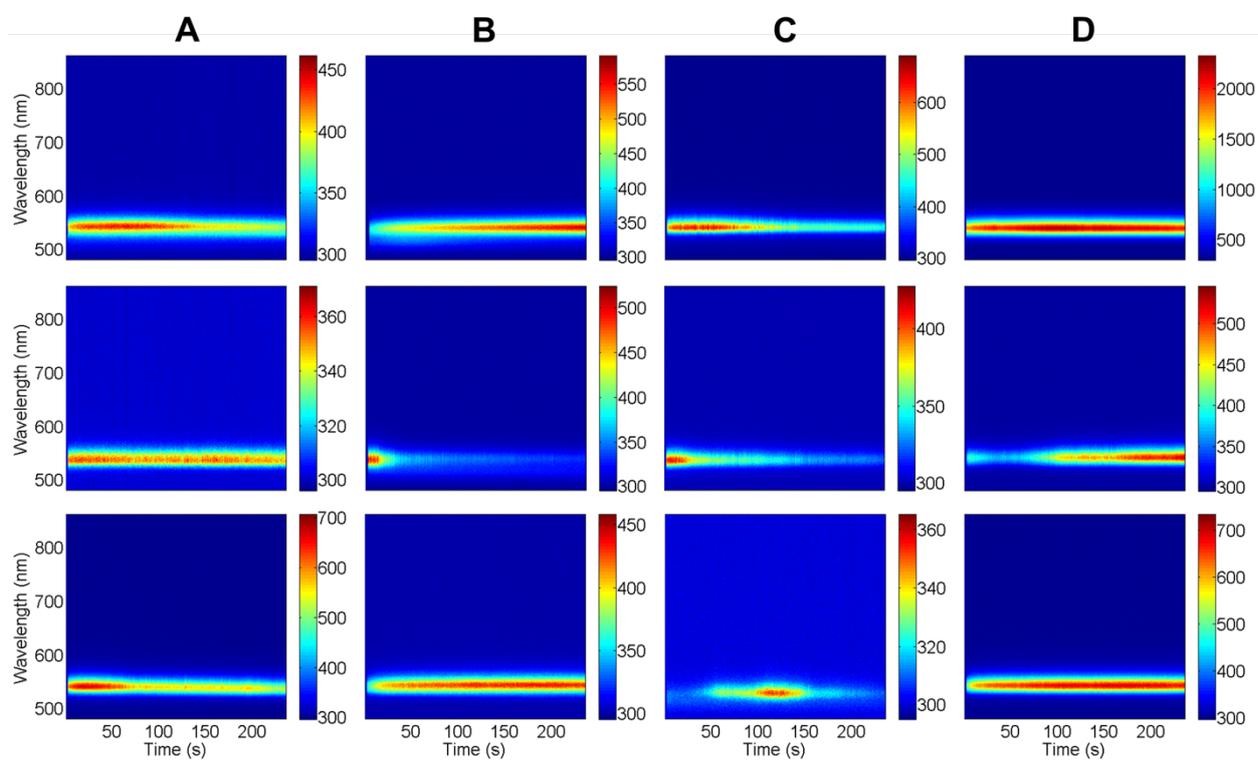


Fig. S3. Time-correlated luminescence microspectroscopy spectra of single $\text{CH}_3\text{NH}_3\text{PbBr}_3$ perovskites. The plots show luminescence versus illumination time of 3 individual nanocrystals with a 532-nm laser ($1.58 \times 10^5 \text{ W/cm}^2$) for $\text{CH}_3\text{NH}_3\text{PbBr}_3$ perovskites synthesized using Scheme 2. The samples are: (column A) unwashed sample, (column B) washed sample, (column C) unwashed with excess precursor, and (Column D) washed with excess precursor sample.

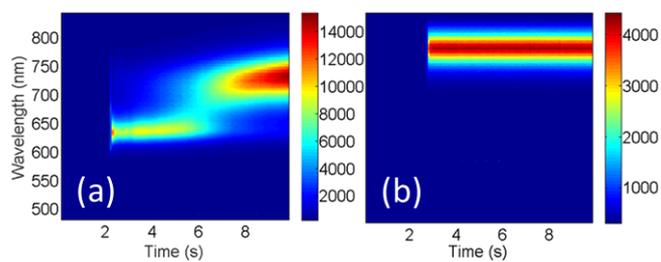


Fig. S4. Time-correlated luminescence microspectroscopy spectra of single (a) $\text{CH}_3\text{NH}_3\text{Pb}(\text{I}_{0.8}\text{Br}_{0.2})_3$ and (b) $\text{CH}_3\text{NH}_3\text{PbI}_3$ perovskite nanocrystals versus time. The 532-nm continuous-wave laser illumination was blocked for the first 2 seconds of data collection to ensure that fast photophysical events were captured in the data recording.