

Supporting Information

30-Fold Efficiency Enhancement Achieved in the Perovskite Light-Emitting Diodes

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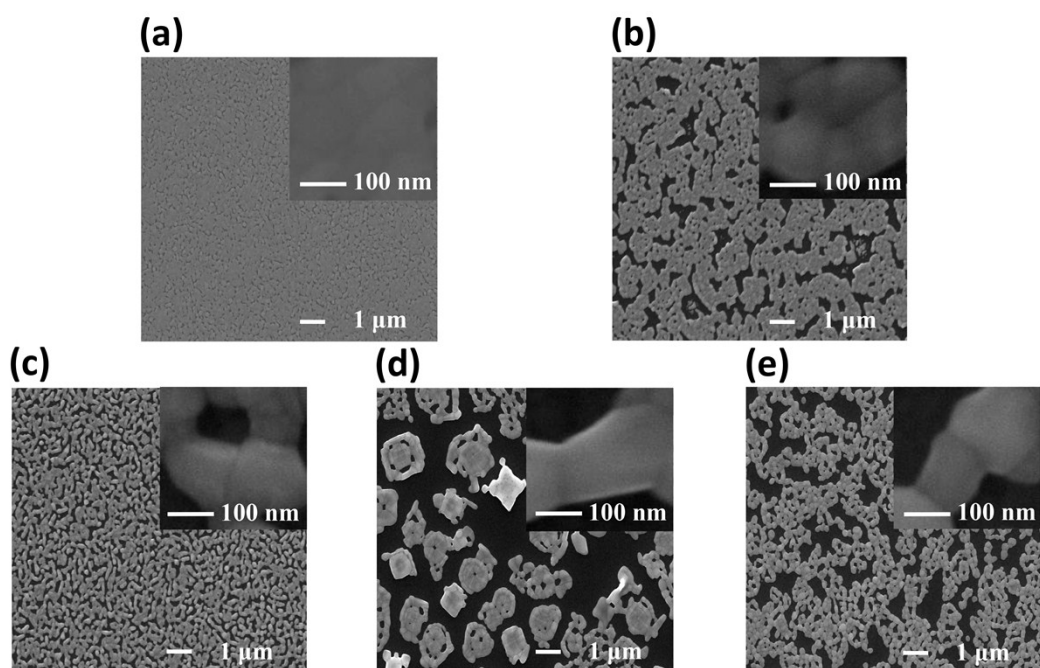
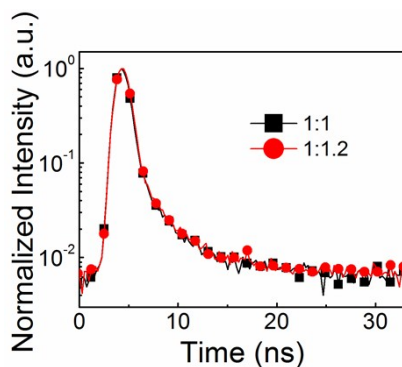


Figure S1. The top-view SEM image of neat CsPbBr₃ films with equimolar PbBr₂-CsBr at 10 wt% prepared by different post-annealing processes: (a) with only pumping away, (b) with annealing at 70 °C for 5 min after pumping away, (c) with annealing at 70 °C for 30 min after pumping away, (d) with annealing at 70 °C for 60 min after pumping away, and (e) with annealing at 100 °C for 30 min after pumping away. The neat CsPbBr₃ film with only pumping away exhibits higher film coverage and smaller grains than the neat CsPbBr₃ films employing different annealing process after pumping away. And it can be found that the coverage rate decreases and the average grain size increases with the increasing of the annealing time and the



annealing temperature.

Figure S2. The time-resolved PL spectra of neat 1:1 and 1:1.2 CsPbBr₃ films with

just pumping away. The average radiative recombination lifetime of the 1:1.2 neat CsPbBr₃ films (0.86 ns) with only pumping away is larger than 1:1 neat CsPbBr₃ films (0.82 ns).

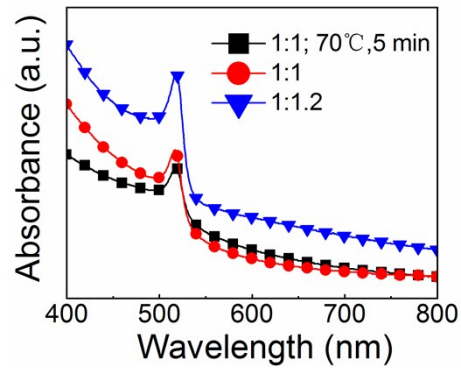


Figure S3. The absorption spectra of three 10 wt% neat CsPbBr₃ films (PbBr₂:CsBr=1:1 with annealing at 70 °C for 5 min after pumping away, PbBr₂:CsBr=1:1 with just pumping away, PbBr₂:CsBr=1:1.2 with just pumping away).