Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Thermal stability and miscibility of co-evaporated methyl ammonium lead halide ($MAPbX_3$, X=I,Br,Cl) thin films analysed by *in situ* X-ray diffraction

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In this supporting information we provide some additional information on the $MAPb(I,Br)_3$ thin film grown by co-evaporating MABr and PbI_2 (corresponding to the figure 5 b) in the main article. A top view scanning electron micrograph (SEM) image of this $MAPbI_2Br$ thin film taken at 4 kV is presented in Figure S1. Figure S2 shows the spectral photoluminescence (PL) of this film (excitation at 532 nm) and the time resolved photoluminescence decay (inset, excitation at 638 nm with approximately $5x10^{11}$ photons/cm²/pulse).

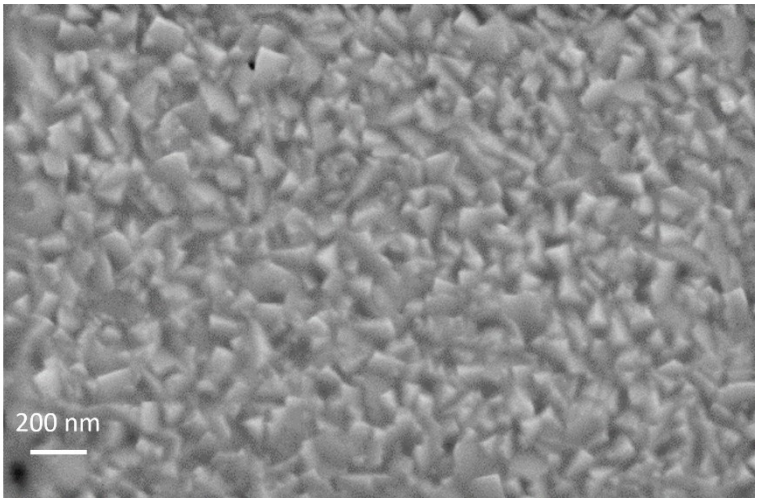

Figure S1: Top view scanning electron micrograph showing the morphology of the $MAPbI_2Br$ thin film grown with co-evaporated MABr and PbI_2.

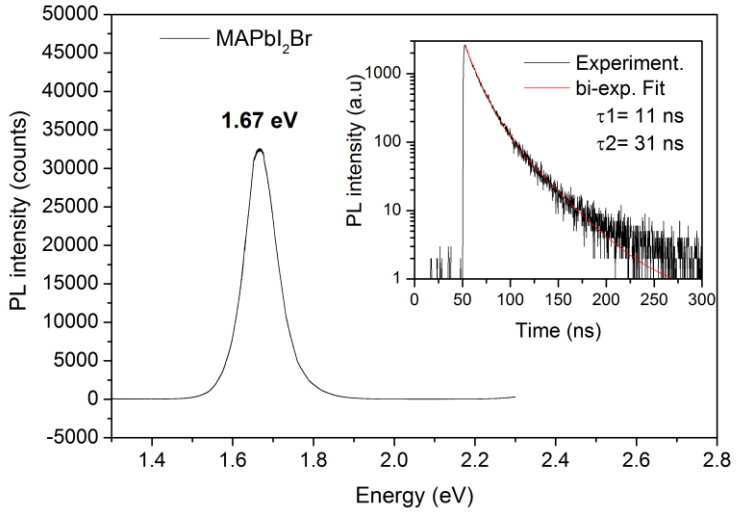

Figure S2: Photoluminescence data of the $MAPbI_2Br$ film shown above. Inset: Time-resolved PL decay.