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


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$_2$Br 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/cm$^2$/pulse).

![Top view scanning electron micrograph showing the morphology of the MAPbI$_2$Br thin film grown with co-evaporated MABr and PbI$_2$.](image1)

![Photoluminescence data of the MAPbI$_2$Br film shown above. Inset: Time-resolved PL decay.](image2)