**Supporting Information**

# Laser induced ion migration in all-inorganic mixed halide perovskite micro-platelet

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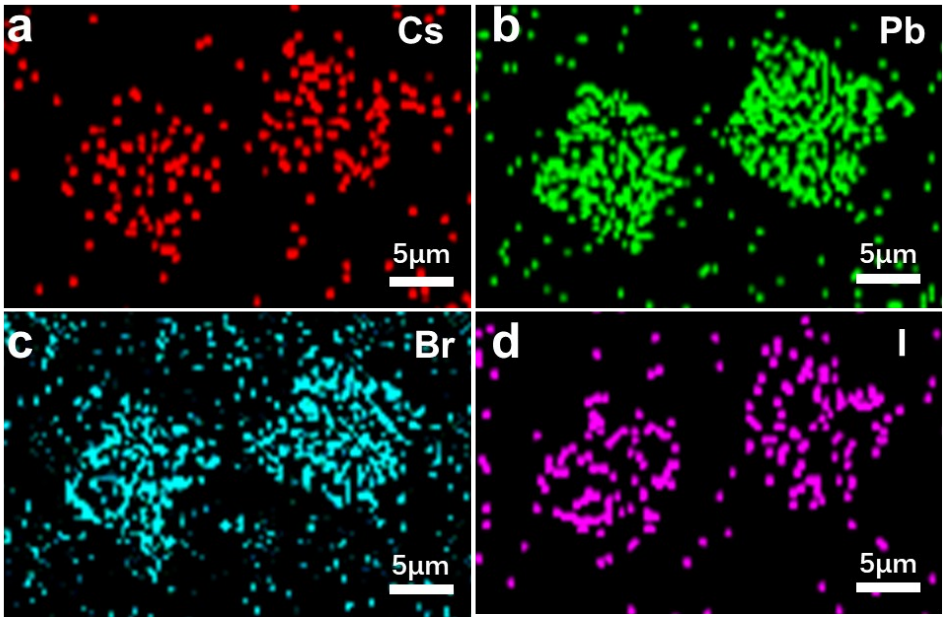


Figure S1. EDX mapping of two $CsPbBr_xI_{(3-x)}$ micro-platelets. (a-d) Distribution of caesium (Cs), lead (Pb), bromine (Br) and iodine (I) elements in perovskites, respectively.

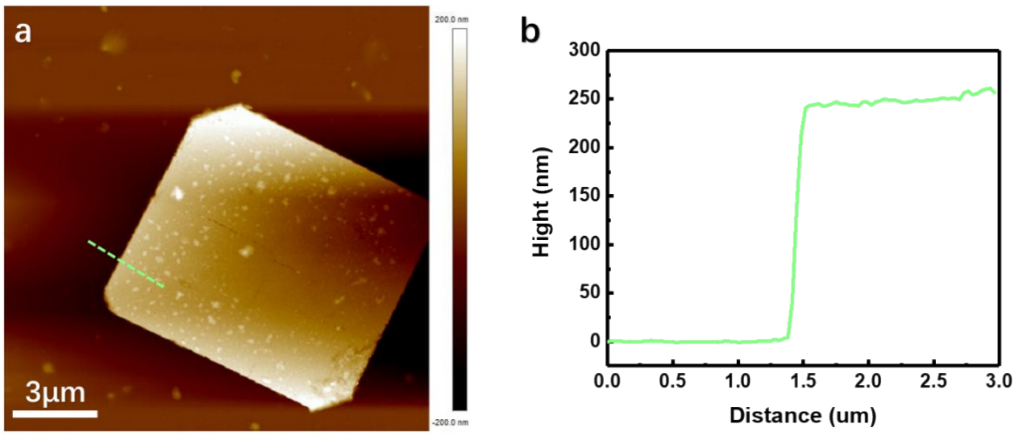


Figure S2. (a) AFM measurement of $CsPbBr_xI_{(3-x)}$ micro-platelet. (b) Test result of the green dotted line in (a).

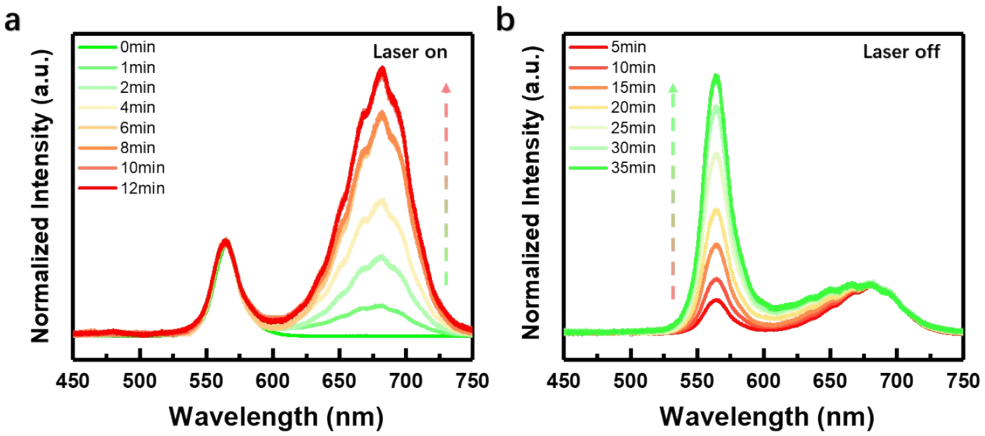


Figure S3. (a) Normalized PL spectra based on the luminescence peak of the bromine-rich phase. (b) Normalized PL spectra based on the luminescence peak of the iodine-rich phase.

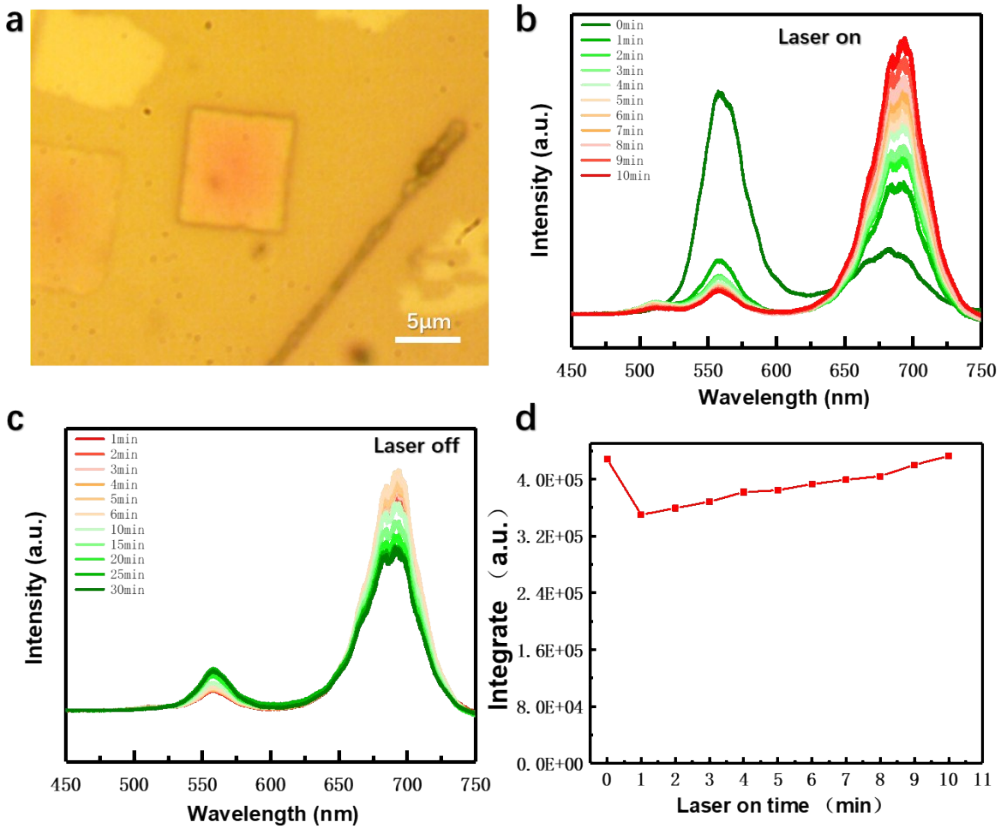


Figure S4. (a) Cubic shape individual $CsPbBr_xI_{(3-x)}$ micro-platelet photograph which was taken from the microscope of the home-made micro-area fluorescence test system. (b) The PL spectra change for one position of individual $CsPbBr_xI_{(3-x)}$ micro-platelet during continuous laser irradiation. (c) The PL spectra measured for the same position after the laser irradiation had been turned off. At each time point, the laser was turned on for 10s to acquire the PL spectra. (d) The integrated intensity of the PL spectrum from a wavelength of 500 nm to 750 nm.

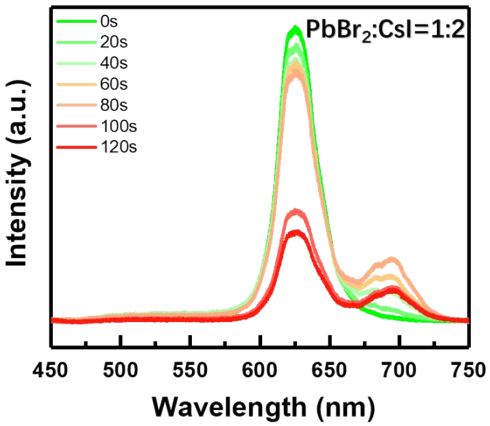


Figure S5. The PL spectra of an individual $CsPbBr_xI_{(3-x)}$ micro-platelet fabricated by using $PbBr_2$ and CsI precursor powder with a molar ratio of 1:2.

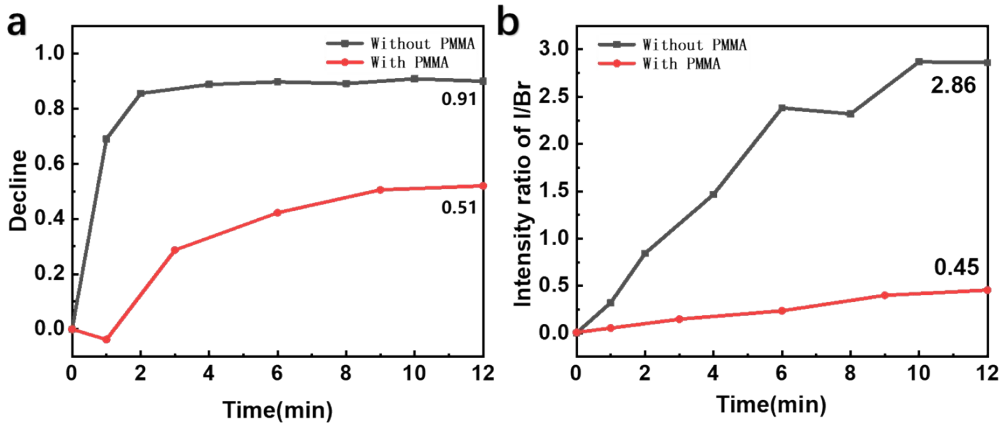


Figure S6. (a) The degree of declining of bromine-rich phase emission intensity with (red line) and without (black line) PMMA during laser irradiation. (b) PL intensity ratio of iodine-rich domain and bromine-rich domain of the $CsPbBr_xI_{(3-x)}$ micro-platelet coated with (red line) and without (black line) PMMA.