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Classification and Segmentation of Breast Tumor using Mask R-CNN on Mammograms

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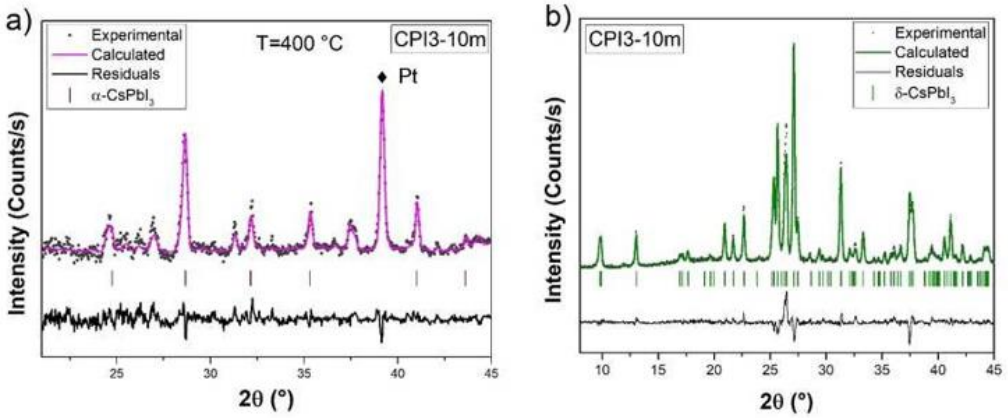
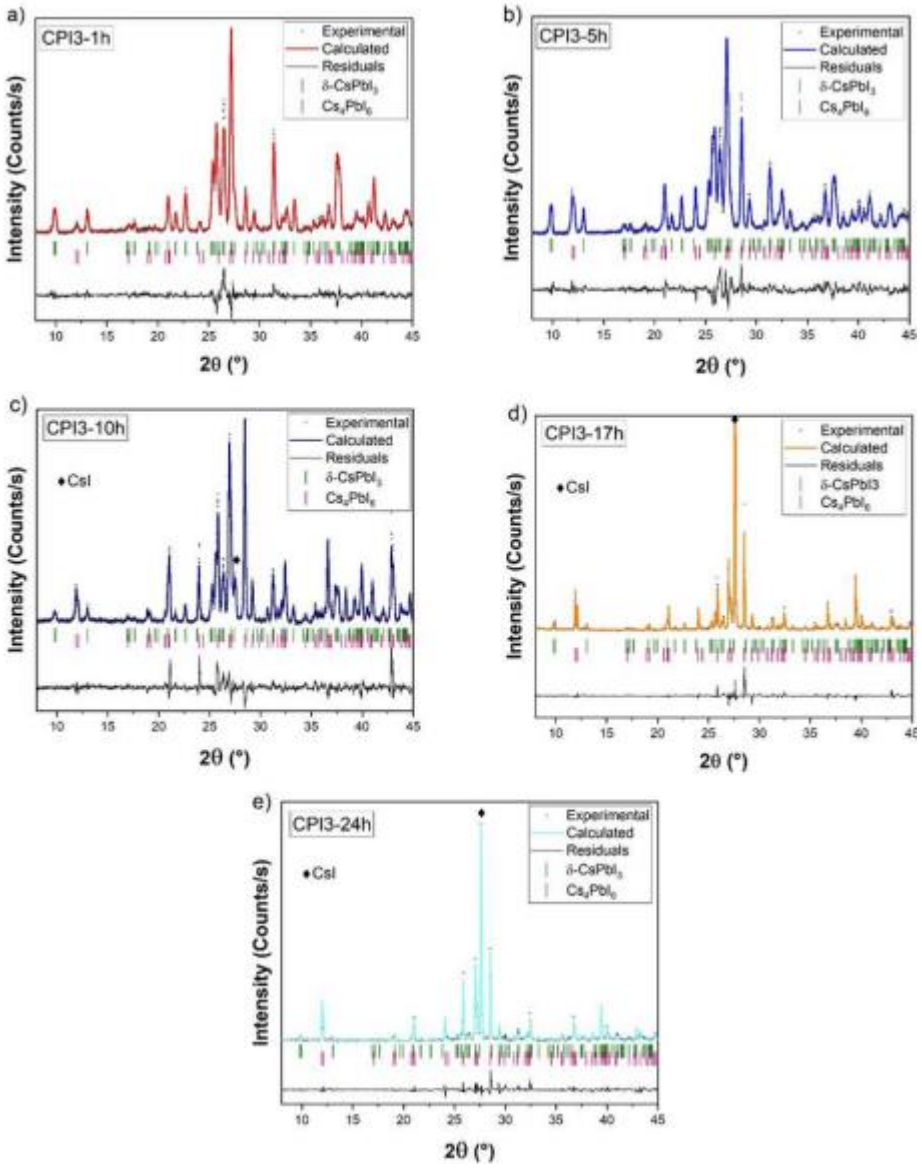
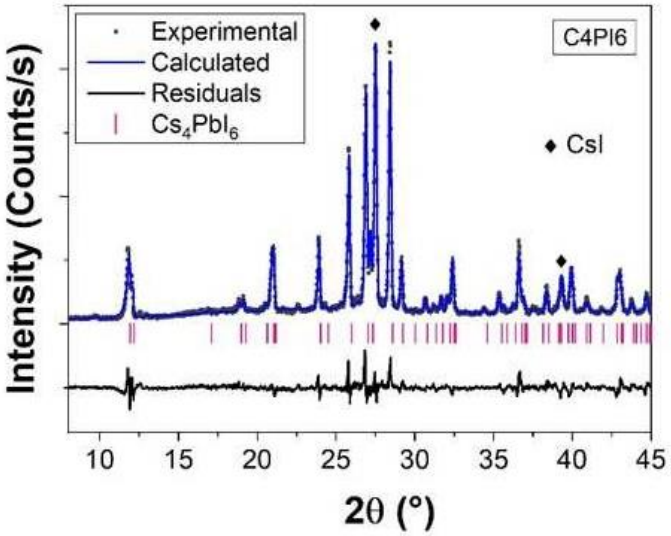
Supplementary data



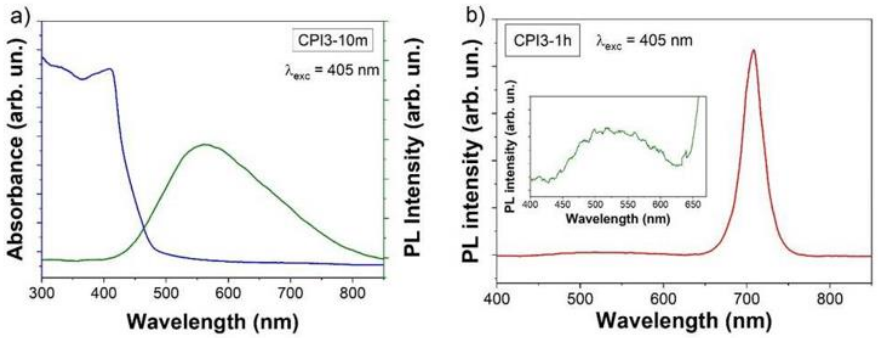
Supplementary Figure 1: Rietveld refinement of the sample CPI3-10 m at 400°C a) and at room temperature b).



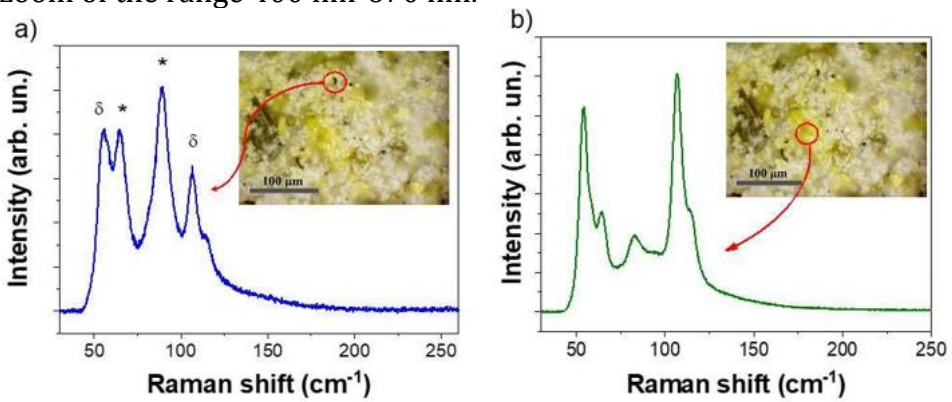
Supplementary Figure 2: Rietveld refinement of CPI3 samples at different times: a) 1 h, b) 5 h, c) 10 h, d) 17 h, e) 24 h.



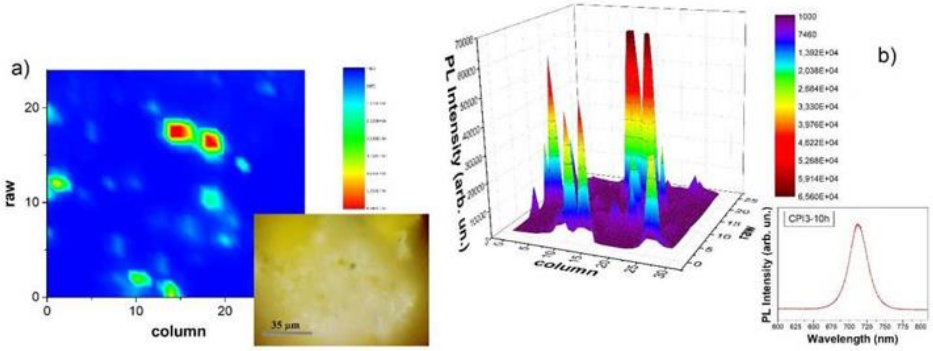
Supplementary Figure 3: Rietveld refinement of C4PI6 sample.



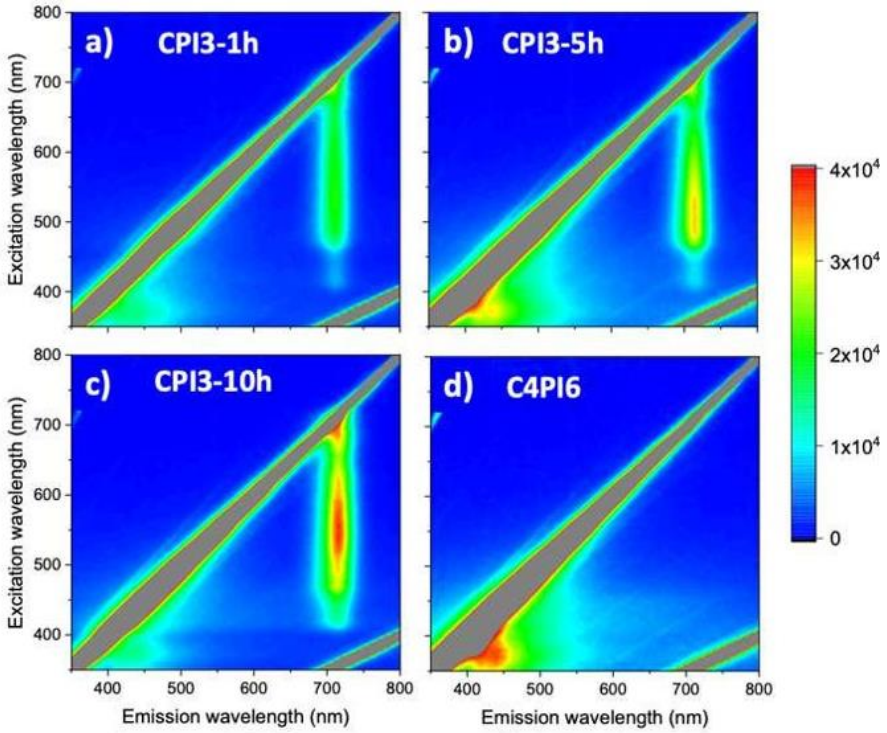
Supplementary Figure 4: Absorption and steady-state luminescence spectra of CPI3-10 m a) and steady-state luminescence spectrum of CPI3-1 h b). In the inset, a zoom of the range 400 nm-670 nm.



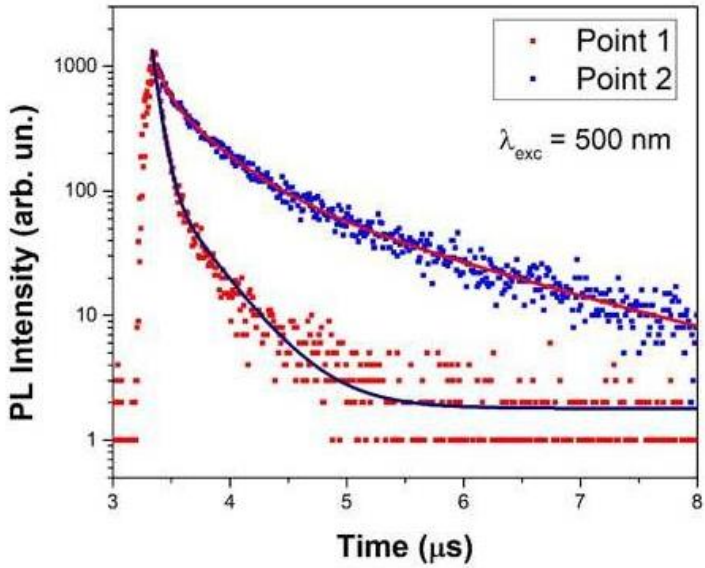
Supplementary Figure 5: Raman spectra of CPI3-10 h sample, λexc=785 nm. a) Spectrum collected on a black spot, pointed out in the inset, with peaks of Cs4PbI6 (*) and CsPbI3δ phase. b) Spectrum gathered on the yellow part of the sample, pointed out in the inset. The images were obtained with optical microscope imaging.



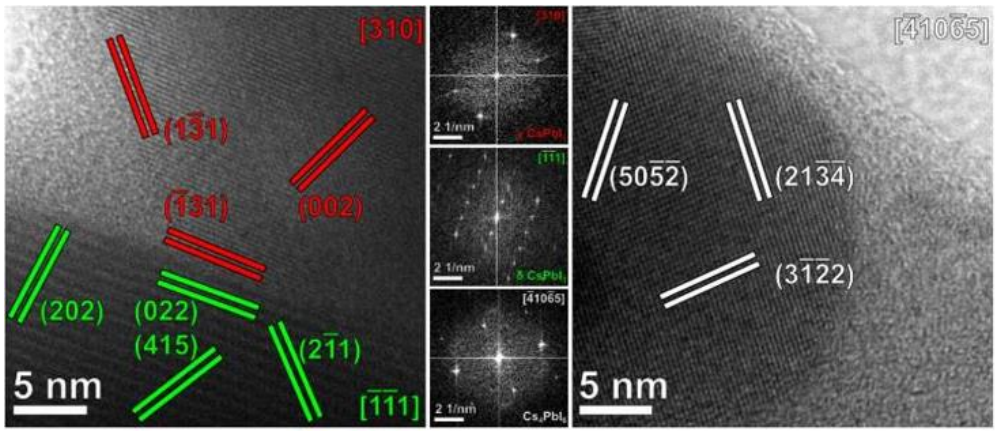
Supplementary Figure 6: Luminescence map of the emission at 715 nm of the sample CPI3-10 h: in a) a 2D map and in the inset the image by optical microscope. In b) a 3D map and in the inset the PL emission spectrum.



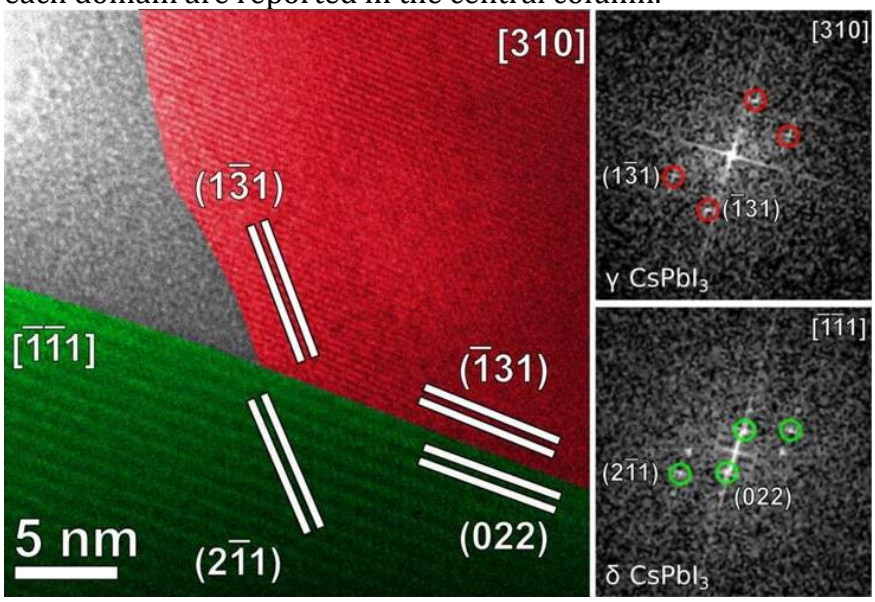
Supplementary Figure 7: 3D-Photoluminescence excitation spectra of different samples: a) CPI3-1h, b) CPI3-5h, c) CPI3-10h, d) C4PI6.



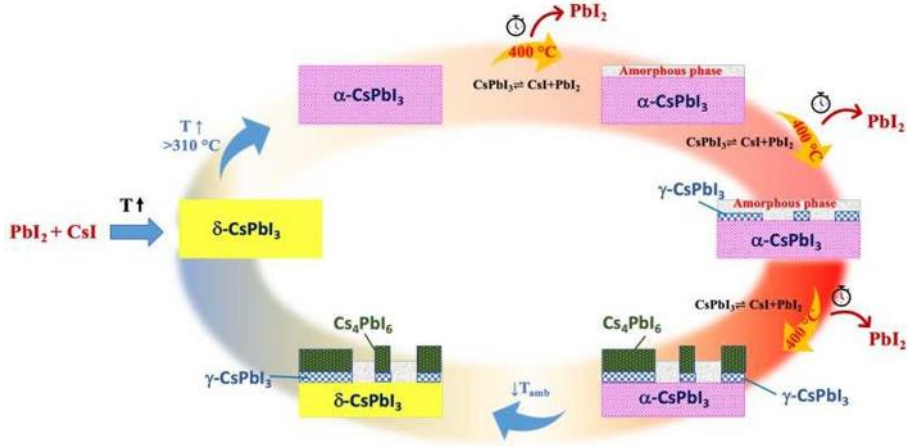
Supplementary Figure 8: Time resolved luminescence measurement on two different points of CPI3-10 h sample; λexc=500 nm.



Supplementary Figure 9: Representative HRTEM images of the CPI3-10 h sample. Lattice planes of γ-CsPbI3, δ-CsPbI3, and Cs4PbI6 are indicated in red, green and white, respectively. The 2D-FFT diffracto grams used to calculate the orientations of each domain are reported in the central column.



Supplementary Figure 10: Epitaxy study on the interface between γ-CsPbI3 and δ-CsPbI3, previously reported in Figure 10. γ-CsPbI3 and δ-CsPbI3 crystal domains in the HRTEM image (left) are depicted in red and green, respectively. The diffraction spots in the 2D-FFT diffracto grams corresponding to the lattice planes used for the mismatch calculations are indicated according to the same color-coding.



Supplementary Figure 11: Model of the phase transition during the synthesis process and image of the sample after the synthesis.