

## Supplementary Information

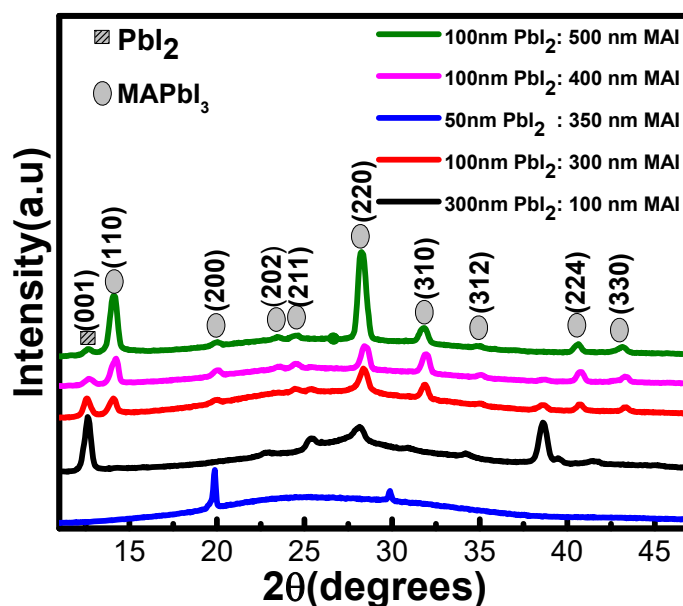
### Characterization of Sequential Physical Vapor Deposited Methylammonium Lead Tri-Iodide Perovskites Thin Films

J. N. Fru<sup>a</sup>, N. Nombona<sup>b</sup>, M. Diale<sup>a\*</sup>

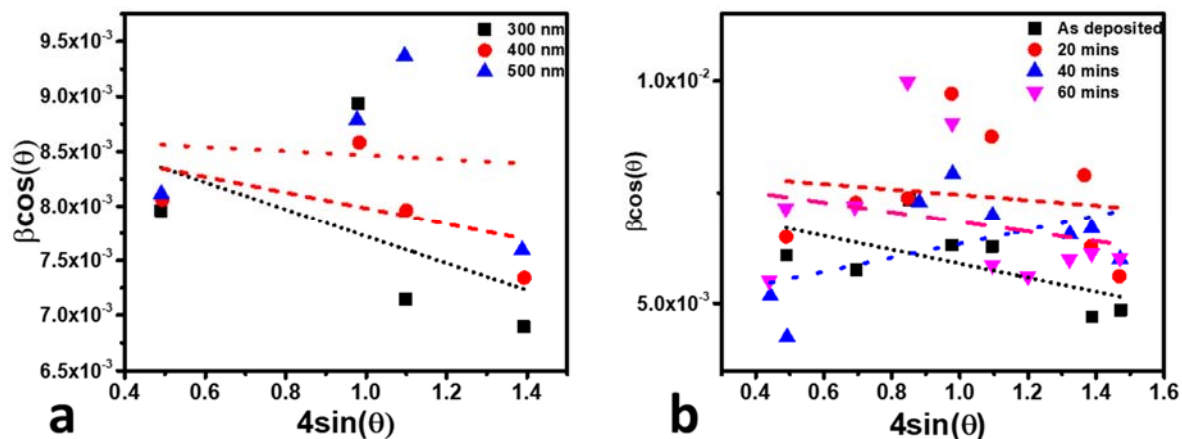
<sup>a</sup>Department of Physics, University of Pretoria, Private Bag X20, Hatfield 0028, South Africa

<sup>b</sup>Department of Chemistry, University of Pretoria, Private Bag X20, Hatfield 0028, South Africa

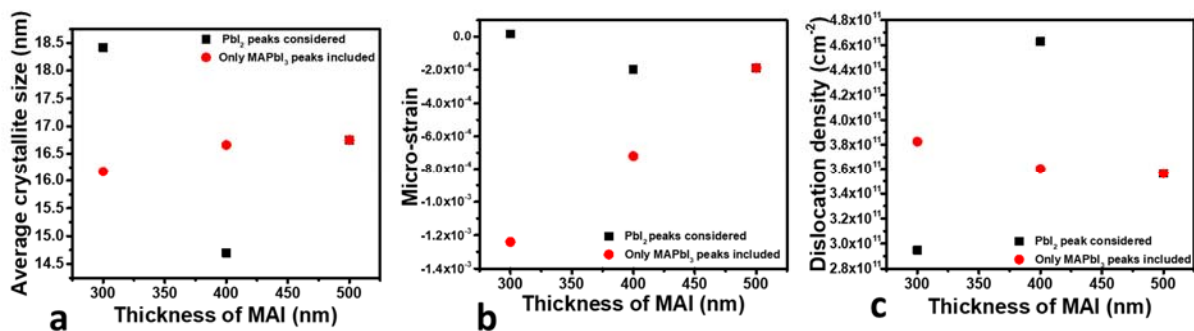
Correspondence author's email and phone number: [mmantsae.diale@up.ac.za](mailto:mmantsae.diale@up.ac.za), +27124204418



**Figure S1.** X-ray diffractograms showing films with ratio of PbI<sub>2</sub> to MAI greater than one and films with ratio of PbI<sub>2</sub> to MAI less than one.



**Figure S2.** a) W-H plot of SPL1 thin films for various thicknesses of MAI. b) W-H plot of SPL2 thin films for various annealing times.



**Figure S3.** a) Average crystallite size of SPL1 thin films for various MAI thickness with extra  $\text{PbI}_2$  peaks included. b) Micro-strain of  $\text{MAPbI}_3$  for various MAI thickness with extra  $\text{PbI}_2$  peaks included. c) Dislocation density of  $\text{MAPbI}_3$  for various MAI thickness with extra  $\text{PbI}_2$  peaks included.