

Structural and Compositional Analyses of Perovskite-like Cesium Lead Halides

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Inorganic CsPbX₃ (X=I, Cl, Br) thin films are investigated as supposedly more stable alternative to methyl-ammonium-containing, perovskite-like CH₃NH₃PbI₃ layers for thin-film solar cells. For the present contribution, wide-gap CsPbBr₃ thin films were synthesized by spin-coating and evaporation. In addition, also corresponding powder samples were produced as reference. Structural properties were obtained by X-ray diffraction as well as by high-resolution imaging and electron diffraction in transmission electron microscopy, while elemental distributions were analyzed by means of energy-dispersive X-ray spectrometry. Evaluation of these results has so far not resulted in unambiguous phase identification of the Cs-Pb-Br thin films, in contrast to the powder sample. The present contribution will report also about experiences with beam damage in the electron beam and how to avoid it.