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Thermal stability of perovskite precursors

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We report on a thermal stability of Perovskite solar cells precursors (CH₃NH₃I and PbI₂) synthesized following a simple precipitate method. The structure, morphology, mass loss behavior, thermal behavior and thermal stability of these materials were investigated using X-ray diffraction (XRD), Scanning electron microscope (SEM), Differential scanning calorimetry (DSC), Fourier transform infrared spectroscopy (FTIR) and Thermogravimetric analysis (TGA), respectively. XRD measurements indicated the presence of both organic and inorganic materials. SEM analyses revealed that both materials have similar morphologies that makes it compatible to work as a loyal active layer. TGA analysis suggested that both CH₃NH₃I and PbI₂ components are stable at temperatures up to 244 degrees celsius and 500 degrees celsius, respectively. The various functional groups present both CH₃NH₃I and PbI₂ components were identified by FTIR analysis

Apply to be considered for a student award (Yes / No)?

yes

Level for award (Hons, MSc, PhD, N/A)?

PhD

Main supervisor (name and email) and his / her institution

Ocaya R.O

University of the Free State

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

yes

Primary author: Mr MALEVU, Thembinkosi Donald (University of The Free State)

Presenter: Mr MALEVU, Thembinkosi Donald (University of The Free State)

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