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Stability of Methylammonium Lead Tri-bromide with Diffused Metal Electrodes

Thursday, 11 July 2019 15:00 (2 hours)

The interactions between aluminium, gold, silver, tin, gold/zinc metal electrodes with methylammonium lead tribromide perovskite were studied. The metals were deposited on the substrates by physical vapour deposition using a resistive evaporator. Likewise, methylammonium lead tri-bromide perovskite thin films were grown on the deposited metal films by sequential physical vapour deposition of lead (II) bromide and methylammonium bromide. The structural and morphological properties were observed over a period of one month. Field emission scanning electron microscopy showed that aluminium reacts aggressively with the perovskites immediately after deposition leading to exfoliation of the grains. X-ray diffraction patterns confirmed that the exfoliation was a result formation of alumina in air. On the other hand, gold/zinc alloy was relatively stable with methylammonium lead tri-bromide. This study paves the way for the selection of electrode metals for stable methylammonium lead tri-bromide perovskites solar cells

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Yes

Level for award
 (Hons, MSc,
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PhD

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