# Cesium-based perovskite solar cells

CsBiSCl 2, a new Pb-free perovskite system, was synthesized for the first time as a light absorber. By preparing DMABiS 2 as an intermediate, Cs-Bi-based CsBiSCl 2 perovskite films with a band gap over 2.012 eV were ...

While originally developed for modelling polycrystalline CdTe and CIGS based thin film solar cells, perovskite based solar cells can also be studied in SCAPS due to their similar structure and presence of Wannier-type ...

Article Cesium Titanium(IV) Bromide Thin Films Based Stable Lead-free Perovskite Solar Cells Min Chen,1 Ming-Gang Ju,2 Alexander D. Carl,3 Yingxia Zong,1 Ronald L. Grimm,3 Jiajun ...

Perovskite films fabricated by a two-step method have the potential to produce high-performance perovskite solar cells (PSCs). The morphology and quality of the inorganic ...

Formamidinium-cesium (FA-Cs) lead halide has attracted wide interest for enhancing the stability of perovskite solar cells; however, the crystallization of FA-Cs ...

Efficiency enhancement by changing perovskite crystal phase and adding a charge extraction interlayer in organic amine free-perovskite solar cells based on cesium

In organic perovskite-based solar cells, the state-of-the-art deposition methods, such as two-step sequential method, thermal evaporation, and antisolvent-washing have been ...

The wide bandgap CsPbI2Br perovskite materials have attracted significant attention due to their high thermal stability and compatibility with narrow bandgap materials in ...

Boosting the stability of cesium/formamidinium (Cs/FA) based perovskite solar cells (PSCs) has received tremendous attention. However, the crystallization of perovskites ...

To fabricate complete solid state based perovskite solar cells, we have preferred to use CsPbI 3 and CsPbBr 3 because, ... enhancement by changing perovskite crystal phase ...

Figures 2 and 3 show the J-V curves and performances for the Si and FACs perovskite solar cells under light-emitting diode (emission wavelength, 450-460 nm) and ...

By an abrupt rise in the power conservation efficiency (PCE) of perovskite solar cells (PSCs) within a short span of time, the instability and toxicity of lead were raised as major ...

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These studies have demonstrated that cesium lead halide (CsPbX 3) and Pb-free cesium tin halide (CsSnX 3) perovskites are promising materials for the fabrication of thermally ...

Lead(II)-acetate (Pb(Ac) 2) is a promising lead source for the preparation of organolead trihalide perovskite materials, which avoids the use of inconvenient anti-solvent ...

In Fig. 1 (B), the simulated design in the Cesium-based perovskite is illustrated. Initially, the ITO behaves as the top electrode, while 0.1 um thicker biosynthesized ZnO layer is ...

In this work, one dimensional SCAPS-1D (v3.3.07) has been used to study the performance of the proposed solar cell. While originally developed for modelling polycrystalline ...

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