High-performance perovskite solar cells

High-Performance Perovskite Solar Cells with Enhanced Environmental Stability Based on a (p-FC 6 H 4 C 2 H 4 NH 3) 2 [PbI 4] Capping Layer. ... When employing the 3D-2D perovskite as ...

An article in Science Advances reports a new approach to stabilizing perovskite precursor solutions for the reproducible fabrication of high-performance solar cells

In this review paper, we will highlight two approaches that able to improve the perovskite solar cells performance namely crystallinity and morphological control of the ...

In summary, high performance solution-processed perovskites solar cells were demonstrated through development of hybrid perovskite materials co-crystallized with poly ...

Perovskite solar cells (PSCs) have demonstrated remarkable photovoltaic performance, positioning themselves as promising devices in the field. Theoretical calculations ...

In just over a decade, certified single-junction perovskite solar cells (PSCs) boast an impressive power conversion efficiency (PCE) of 26.1%. Such outstanding performance ...

Metal halide perovskite solar cells are emerging as next-generation photovoltaics, offering an alternative to silicon-based cells. This Primer gives an overview of ...

We demonstrate that charge carrier diffusion lengths of two classes of perovskites, CH3NH3PbI3-x Cl x and CH3NH3PbI3, are both highly sensitive to film ...

Two asymmetrical molecules, namely IDT6CN-TM and IDT6CN-4F, are developed and used for multiple energy applications. The properties of these molecules, such ...

A certified PCE of 20.1% was achieved in late 2014 following the first study of long-term stable all-solid-state perovskite solar cell with a PCE of 9.7% in 2012, showing their promising potential ...

In recent years, mixed organic-inorganic halide perovskite solar cells have been the subject of intense research because of their attractive properties such as high carrier ...

To date, SAMs have pushed the PCE of single-junction PSCs more than 25% 13, of perovskite-CIGS tandem devices more than 24% 51,52, of all-perovskite tandem solar ...

High-performance perovskite solar cells (PVSCs) with absorber layer thickness insensitive features are

important for practical fabrication, however these features are difficult to be realized. There are very few reports of the ...

To address this problem, we combined an efficient perovskite composition with an interface modification. Thorough analysis reveals the mechanism leading to high V OC-values ...

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A vapor-to-solid deposition of high-quality large-area perovskite films is developed via a new process based on a 2D intermediated phase. Efficiencies of 21.1% and ...

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