Topclass Solar

Fa perovskite





Fa perovskite

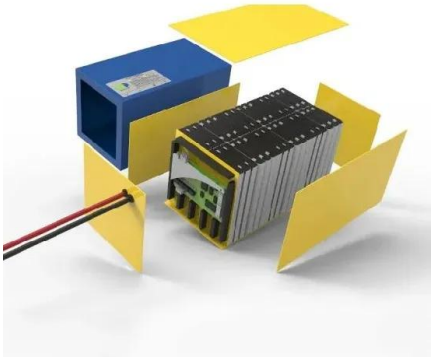


Orientated crystallization of FA-based perovskite via hydrogen

Therefore, we design a multifunctional fluorinated additive, which restrains the complicated intermediate phases and promotes orientated crystallization of ?-phase of perovskite.

Over 24% efficient MA-free CsxFA1-xPbX3 perovskite solar cells

Summary Methylammonium (MA)-free perovskites such as Csx FA 1-x PbX 3 (CsFA) show excellent thermal stability, favoring their use in perovskite solar cells (PSCs). However, the





FA/Cs-based mixed Pb-Sn perovskite solar cells: A review of recent

Thus, this review focuses on mixed Pb-Sn perovskite solar cells that use formamidinium (FA) or mixed cations of FA and cesium (Cs) without MA. These materials have bandgap energies

Ambient-air fabrication of wide-band-gap perovskites via a dual

The pursuit of all-perovskite tandems for commercialization demands scalable and robust manufacturing processes. Ambient-air (relative humidity > 40%) fabrication of high-quality, large-





Efficient MAPbI3 and FA based mixed perovskite solar cells with a

Efficient MAPbI3 and FA based mixed perovskite solar cells with a linear or a carbon ring based antisolvent, Chandel, Anjali, Wu, Jia-Ren, Tang, Po-Wen, Chang, Sheng Hsiung

Scalable crystal-solvate seeding strategy for the fabrication of

A crystal-solvate pre-seeding strategy is developed to suppress the morphological and electronic defects that occur at the bottom of solution-processed perovskite films in inverted





Formamidinium lead triiodide perovskites with improved structural

Most PSC materials employ organic formamidinium (FA) or methylamine (MA) cations in conjunction with inorganic PbI 3 perovskite components 15.

Aqueous synthesis of perovskite precursors for highly efficient

Perovskite solar cells have a high defect tolerance, but impurities and nonstoichiometries in the film precursor have limited power conversion efficiency. Zhu et al. report that the aqueous





Unlocking the Ambient Temperature Effect on FA-Based Perovskites

This work reveals the limiting factors for achieving high-quality FA-based perovskite films and helps to unlock the existing narrow processing window for future large-scale production.

Anti-solvent free fabrication of FA-Based perovskite at low

FA-based flexible perovskite solar cell fabricated at low temperature without using anti-solvent exhibits an efficiency of 18.5% and excellent mechanical stability.





Crystal-solvate pre-seeded synthesis for scalable perovskite

Scalable fabrication of inverted perovskite solar cells is achieved through crystal-solvate (CSV) pre-seeding. The pre-seeded, nanostructured CSV layer suppresses morphological and

Toward stabilization of formamidinium lead iodide perovskites

The black phase formamidinium lead iodide perovskite (?-FAPbI3) undergoes an undesired transformation to a non-perovskite ?-phase, rendering it inactive. Here authors show the



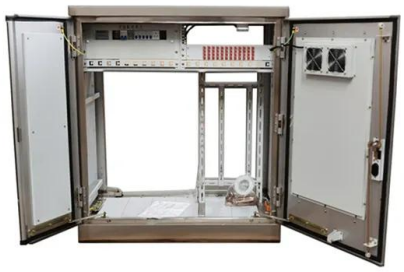


Orientated crystallization of FA-based perovskite via hydrogen-bonded

Formamidinum lead iodide perovskite solar cells commonly suffer from photoinduced phase segregation and humidity instability. Here, the authors design a multifunctional fluorinated

Efficient and Stable FA-Rich Perovskite Photovoltaics: From Material

The perovskite photovoltaic field has developed rapidly within a decade. In particular, formamidinium (FA)-rich perovskite allows a broad absorption spectrum, and is considered to be one





Suppressing the phase separation in FAMA mixed perovskite solar

The separation of FA-MA can be understood by the disparity in the affinity of A-site cations towards the PbI 3- frameworks. During the crystallization of perovskite, one specific A-site cation

MA Cation-Induced Diffusional Growth of Low-Bandgap FA-Cs

Herein, we take advantage of such temperature gradient for the diffusional growth of high-quality FA-Cs perovskites by introducing a thermally unstable MA + cation, which would firstly





Boosting optoelectronic performance of (FA)X(MA)1-XPbI3 perovskite

The mixed-cation-based FA X MA 1-X PbI 3 perovskite with significant and large grain size, uniform and compact morphology, highly crystallization, and consequently reducing defect density of

Homogenizing out-of-plane cation composition in perovskite

We added out-of-plane cations to homogenize the distribution of cations in perovskite films, resulting in a solar cell with improved efficiency and stability.





Unveiling the additive-assisted oriented growth of perovskite

Additives have been widely used for passivating defects in perovskite semiconductors, yet the role of additive and their interaction is not clear. Here, the authors reveal an additive-assisted

High-efficiency and thermally stable FACsPbI3 perovskite

Suppressing surface Cs+ accumulation in methylammonium-free ?-FA1-xCsxPbI3 perovskite with an& nbsp;intermediate phase-assisted strategy enables high-efficiency and thermally





Perovskite solar cells , Nature Reviews Methods Primers

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

Photoswitchable isomers to improve grain boundary resilience and

The operational stability of perovskite solar cells remains a challenge. Zhang et al. incorporate photoswitchable isomers at grain boundaries to improve their resilience and the stability





FA/MA Cation Exchange for Efficient and Reproducible Tin-Based

Nontoxic tin-based perovskite solar cells (Sn-PSCs) as a promising alternative to toxic Pb-PSCs have drawn great attention in recent years for their environmental friendliness and unique

Stable Triple-Cation (Cs+-MA+-FA+) Perovskite Powder Formation

Organometallic halide perovskite materials have promising photovoltaic properties and emerged as a cost-effective solar cell technology. However, a synthesis protocol to fabricate high





Compressive Strain Induced With Lattice-Matching Molecule for

The compressively strained Cs 0.05 FA 0.8 MA 0.15 Pb (I 0.77 Br 0.23) 3 perovskite film has been prepared via lattice-matching chelation with [3,4-bipyridine]-6-carboxylic acid, resulting in

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