KREATYWNY ENERGY POLSKA

Efficiency of self-assembled solar cells

Overview

In this review, we explore the diverse roles of SAM in OSCs, highlighting their impact on charge generation, transport, and extraction, particularly in high-efficiency, non-fullerene acceptor (NFA)-based devices. The emergence of high-performing donor and acceptor materials, along with tailored interfacial layers, has enabled efficient and stable organic solar cells (OSCs) that are comparable to other state-of-the-art technologies. With power conversion efficiencies (PCEs) now exceeding 20%, further. NLR maintains a chart of the highest confirmed conversion efficiencies for research cells for a range of photovoltaic technologies, plotted from 1976 to the present. Access our research-cell efficiency data.

Efficiency of self-assembled solar cells

Recent Advances in Self-Assembled Molecular Application in Solar Cells

With the development of various materials in perovskite solar cells, self-assembled monolayers (SAMs) have rapidly become an important factor in improving power conversion ...

Organic Solar Cells with 20.12% Efficiency Enabled by ...

Carbazole-derived self-assembled monolayer (SAM) materials as hole transport layers are widely used in organic photovoltaics, yet the role of subtle substituent effects on interfacial structure and device ...

Robust buried interface by cross-linkable self-assembled monolayers

Self-assembled monolayers (SAMs) have contributed substantially to enhancing the performance of perovskite solar cells. In Nature, Jen and co-workers reported a certified efficiency of ...

Rational design strategy of co-self-

assembled monolayers for high

A carefully designed co-assembly strategy significantly improved the uniformity and density of the interface, minimizing leakage current and mitigating device degradation, which enabled ...

Enhancing efficiency and stability in perovskite solar cells

Perovskite solar cells (PVSCs) show remarkable potential due to their high-power conversion efficiencies and scalability. However, challenges related to stability and long-term performance ...

Toughened self-assembled monolayers for durable perovskite solar cells

Here we employ a cross-linkable co-SAM to enhance the conformational stability of hole-selective SAMs against external stresses, while suppressing the formation of defects and voids in ...

Best Research-Cell Efficiency Chart , Photovoltaic Research , NLR

Best Research-Cell Efficiency Chart NLR maintains a chart of the highest confirmed conversion efficiencies for

research cells for a range of photovoltaic technologies, plotted from 1976 ...

Thiophene-Bridged Conjugated Self-Assembled Hole Transport ...

A new thiophene-bridged conjugated self-assembled hole transport monolayer was designed and synthesized, which exhibit a power conversion efficiency of 25.53% in perovskite solar cells.

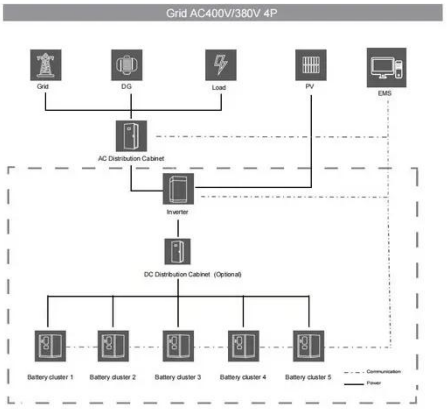
Anti-aggregation self-assembled monolayers enable high

This study demonstrates that suppressing interfacial molecular aggregation enables highly efficient and scalable perovskite solar cells.

Advances in self-assembled monolayer-engineered organic solar cells

In this review, we explore the diverse roles of SAM in OSCs, highlighting their impact on charge generation, transport,

and extraction, particularly in high-efficiency, non-fullerene acceptor ...



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