

The heterojunction structure, and the ability of amorphous silicon layers to effectively passivate crystalline silicon has been well documented since the 1970s. [9] ... [107] [108] Hybrid ...

Schematic diagram of the bulk heterojunction organic solar cells (OSC) structure and energy band diagram and the operating principles of an OSCs. Reproduced with ...

Organic solar cells have emerged as promising alternatives to traditional inorganic solar cells due to their low cost, flexibility, and tunable properties. ... bulk ...

Schematic diagram of the band structure of a heterojunction organic solar cell. The active layer in this type of device contains a donor and an acceptor. Also, here the ...

Organic solar cells (OSCs) have reached their second golden age in recent two years with a boosted number of publications. Non-fullerene acceptor (NFA) materials have become a rising ...

Solution-processed organic bulk-heterojunction (BHJ) active layers form sophisticated nanostructures during the drying of the wet-deposited solution, because of complex physical ...

Power conversion efficiencies of about 8-9% for polymer-based bulk heterojunction (BHJ) devices and over 8% for small molecule based planar heterojunction ...

Recently, much effort has been devoted to improve the efficiency of organic photovoltaic solar cells based on blends of donors and acceptors molecules in bulk ...

In this work, a bulk-heterojunction-buried (buried-BHJ) structure is introduced by sequential deposition to realize efficient exciton dissociation and charge collection, thereby ...

The optical properties of the fabricated glass substrate with the nanoscale glass structure were measured at wavelengths ranging from 350 to 700 nm using a UV-VIS-NIR ...

Bulk heterojunction organic solar cells have attracted considerable interest for their promise in cost-effective, lightweight, and flexible photovoltaic applications. This paper ...

Additive-assisted layer-by-layer deposition creates a bulk p-i-n structure and vertically segregated fibril network morphology in the active layer of organic solar cells. This morphology optimizes ...

Substantial enhancements in the efficiencies of bulk-heterojunction (BHJ) organic solar cells (OSCs) have come from largely trial-and-error-based optimizations of the morphology of the active layers. Further ...

Planar Heterojunction Solar Cell without Organic Hole Transport Layer It is found that a graded band structure can form in the 2D-3D perovskite-perovskite heterojunction. As a result, the 2D ...

The graded bulk heterojunction (GBHJ) organic solar cell (OSC), with an active layer of donor-blend-acceptor structure, has recently paid much attention in developing the ...

Obtaining a well-accurate vertical distribution active layer morphology through the air-printing process is an essential task for achieving efficient scalable large-area organic solar cells (OSCs).

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