Huifengyang Solar Support Materials

Are thick-film organic solar cells suitable for large-area solar panels?
The high-efficient organic solar cells (OSCs) with thicker active layers are potential candidatesfor large-area solar panels fabrication. The low charge carrier mobility of the photoactive materials has been identified as the major problem hindering photovoltaic performance of the thick-film OSCs.

How efficient are spiro-typed hole transporting monolayers for planar perovskite solar cells?
ACS Nano. 10, 6816-6825 (2016). Magomedov, A. et al. Self-assembled hole transporting monolayer for highly efficient perovskite solar cells. Adv. Energy Mater. 8, 1801892 (2018). Deng, Z. et al. Design of low crystallinity spiro-typed hole transporting material for planar perovskite solar cells to achieve 21.76% efficiency. Chem.

Are flexible organic solar cells a viable alternative to rigid solar cells?
The power conversion efficiencies (PCEs) of flexible organic solar cells (OSCs) still lag behind those of rigid devices and their mechanical stability is unable to meet the needs of flexible electronics at presentdue to the lack of a high-performance flexible transparent electrode (FTE).

What are a-Si based solar PV cells?
The a-Si based solar PV cells are thinand its variety of compounds includes "a-Si nitride,a-Si germanium m-crystalline silicon and a-Si carbide" with the PCE of about 5-7%. The vapor deposition technique is generally used to form a-Si solar PV cells with metal or gas as a substrate material.

What materials are used in solar PV cells?
Semiconductor materialsranged from "micromorphous and amorphous silicon" to quaternary or binary semiconductors,such as "gallium arsenide (GaAs),cadmium telluride (CdTe) and copper indium gallium selenide (CIGS)" are used in thin films based solar PV cells ,,.

Can MHP-PV panels scale a sustainable supply chain?
Here we outline how MHP-PV panels could scale a sustainable supply chainwhile appreciably contributing to a global renewable energy transition. We evaluate the critical material concerns,embodied energy,carbon impacts and circular supply chain processes of MHP-PVs.

?Nanjing Forestry University? - ??Cited by 14,323?? - ?organic solar cells? - ?field-effect transistors? - ?lead-free perovskite? ... ACS applied materials & interfaces 7 (17), 9274-9280, 2015. 130: 2015: The ...

Organic solar cells (OSCs) have great potentials in practical applications as a clean-energy harvesting technology, which possess advantages in low-cost solution processing method and ...

select article High enthalpy efficiency lignin-polyimide porous hybrid aerogel composite phase change

material with flame retardancy for superior solar-to-thermal energy conversion and ...

GUELPH, Ontario, May 11, 2016 /PRNewswire/ -- Canadian Solar Inc. (the "Company" or "Canadian Solar") (NASDAQ: CSIQ), one of the world"s largest solar power companies, today ...

[4-(3,6-dimethyl-9H-carbazol-9yl)butyl]phosphonic acid (Me-4PACz) self-assembly material has been recognized as a highly effective approach for mitigating nickel ...

The stability of perovskite solar cells (PSCs) is adversely affected by nonradiative recombination resulting from buried interface defects. Herein, we synthesize a polyionic liquid, poly(p ...

This criterion derives from the solar to energy efficiency for a one-step photoexcitation system, which should reach around 10%, enabling the solar hydrogen production to be cost ...

In recent years, poly[bis(4-phenyl)(2,4,6-trimethylphenyl)amine] (PTAA)-based inverted perovskite solar cells (IPSCs) have gained tremendous attention due to their simple ...

At present, PEDOT:PSS and MoO3 are the most widely used hole transport layer (HTL) in organic solar cells (OSCs); however, some drawbacks still limit their practical use. In this study, we ...

Advanced Functional Materials, part of the prestigious Advanced portfolio and a top-tier materials science journal, publishes outstanding research across the field. ...

Charge transport materials in heterojunction solar cells (e.g. perovskite solar cells (PSCs)) play critical roles in determining charge dynamics, photovoltaic performance and device stability ...

With the rapid development of polymer solar cells (PSCs), the manufacture of high-performance large area PSC modules is becoming a critical issue in commercial applications. However, ...

The introduction of an ammonia modified graphene oxide (GO:NH3) layer into perovskite-based solar cells (PSCs) with a structure of indium-tin oxide (ITO)/poly(3,4-ethylene ...

Bright-red CsPbIBr2 films possess intrinsic semitransparent feature, which make it a promising material for smart photovoltaic windows, power curtain walls, top cells for tandem solar cells, ...

Poly(3-hexylthiophene) (P3HT) is a broadly used donor material for polymer solar cells (PSCs) due to its simple molecular structure and low production cost. In recent years, the P3HT-based ...

A new polymer donor (PBDB-T-SF) and a new small molecule acceptor (IT-4F) for fullerene-free organic solar cells (OSCs) were designed and synthesized. The influences of ...

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