

Carbon-based perovskite solar cells (C-PSCs) are emerging as low-cost stable photovoltaics. However, their power conversion efficiency (PCE) still lags behind ...

Graphene-based silicon solar cells comprise a promising class of photovoltaic devices that integrate the exceptional electrical and optical properties of graphene with the mature,...

Abstract Graphene-related materials (GRMs) such as graphene quantum dots (GQDs), graphene oxide (GO), reduced graphene oxide (rGO), graphene ...

The need for high-performance and environmental friendly energy storage systems has prompted researchers to develop novel and improved electrode materials that can meet the ...

Solar desalination is a promising strategy to utilize solar energy to purify saline water. However, the accumulation of salt on the solar evaporator surface severely reduces light absorption ...

Conventional and inverted organic solar cells with 3 nm Cu/graphene hybrid electrodes showed 1.4 and 4.5 times larger power conversion efficiencies (PCE), respectively, than those of the ...

The solar cells combine multilayer graphene with silicon wafers, harvesting both solar and kinetic energy for continuous operation. Tests show the cells can autonomously power ...

Understanding of low-dimension carbon material family (CNT, fullerenes, graphene, and graphene quantum dots) has arrived at a certain extension. In this report, graphene quantum ...

Here, we propose a sustainable approach for the rapid and eco-friendly production of few-layer graphene flakes based on the exfoliation of graphite in water by a combination of high ...

New study shows how a major space storm dramatically shrank Earth's protective plasma layer and slowed its recovery, helping improve solar storm forecasts and protect space infrastructure we ...

Salt-resistant continuous solar evaporation composites based on nonwovens with synergistic photothermal effect of graphene oxide/copper sulphide + Wenbo Sunab, Huan Qi * bc, ...

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Carbon-based perovskite solar cells (C-PSCs) are emerging as low-cost stable photovoltaics. However, their

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power conversion efficiency (PCE) still lags behind that of devices based on Au or Ag as current ...

Graphene Power Storage gives you the ability to store low-cost energy when rates are low--and use it during expensive peak hours. Our systems respond in real-time, flattening demand curves and ...

Graphene's two-dimensional structural arrangement has sparked a revolutionary transformation in the domain of conductive transparent devices, ...

High performance solar cells based on graphene/GaAs heterostructures Xiaoqiang Li, + ?Shengjiao Zhang, + ?Peng Wang, + ?Huikai Zhong, + Zhiqian Wu, +Hongsheng Chen, +? Erping Li, +Cheng ...

Despite the fascinating optoelectronic properties of graphene, the power conversion efficiency (PCE) of graphene based solar cells remains to be ...

Graphene, a two-dimensional carbon nanomaterial with exceptional electrical, mechanical, and chemical properties, has emerged as a game-changing material in the field of ...

Recent advancements in graphene-based solar cells, including bulk heterojunction, Schottky junction, and graphene quantum dots, are discussed in detail, highlighting their impact on ...

This review summarizes recent advances in MOG, focusing on structure-property-performance relationships and applications in solar energy conversion. A ...

Graphene (GR) is one of the promising candidates as transparent conductive electrodes (TCEs) for flexible photovoltaic cells, but high sheet resistance of GR limits the efficiency of the cells.

This comprehensive Review critically evaluates the most recent advances in graphene production and its employment in solar cells, focusing on ...

Black materials are the key to convert solar light to thermal energy, but it is not easy to economically achieve full solar-spectrum light absorption and maximally harvest solar energy. Herein, ...

They also noted that graphene solar cells were chosen over conventional high-efficiency PV cells because graphene can harvest kinetic energy, allowing the device to operate even ...

The limitations in growing and transferring graphene are among the major obstacles in the progress of graphene-integrated devices where the large area is relevant ($>0.2 \text{ cm}^2$). This ...

By combining the porous structure of the electrospun membrane with the high-efficiency photothermal material, the efficiency of the device in absorbing solar energy is increased, ...

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Graphene-based materials are frequently highlighted as the candidate for solar steam generation (SSG) because of their advantages such as high solar absorption, tunable structure and ...

Finally, Life Cycle Assessment of graphene engineered photovoltaic solar cells and their implementation for the service operation are concluded. However, the review also discusses the ...

Scientists have created hybrid perovskite-graphene solar cells that show good stability upon exposure to sunlight, while still maintaining efficiency over 18% - ...

Here, we report a solar desalination device, with efficient two-dimensional water supply and suppressed thermal loss, which can enable an ...

Interfacial solar desalination has been widely favored as a convenient technology to relieve the prominent lack of clean water. However, it remains urgent and challenging to develop ...

Abstract Solar steam generation, as a novel technology, has attracted received extensive attention in recent years. In order to further improve the evaporation performance of the ...

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