

Improving solar control of magnetism in ternary organic photovoltaic system with enhanced photo-induced electrons doping Nano Research ( IF 9 ) Pub Date : 2021-09-04, DOI: 10.1007/s12274-021 ...

This study investigates the effect of lithium doping on the structural, morphological, and optoelectronic properties of  $\text{Cu}_2\text{ZnGe}(\text{SS})_4$  (CZGSe) absorbers prepared using sputtered metallic...

B-site doping with  $\text{Bi}^{3+}$  enhances the crystallinity and stability and reduces the defect density of  $\text{CsSnI}_3$  perovskite. As a result, the assembled PSC deliver a power conversion efficiency ...

Introducing moderate iodide vacancies in halide perovskites has been frequently observed to form n-type doping effect and optimize the power conversion efficiency (PCE) of perovskite solar cells (PSCs).

Highly Efficient Electron Transport Obtained by Doping PCBM with Graphdiyne in Planar-Heterojunction Perovskite Solar Cells Nano Letters ( IF 9.1 ) Pub Date : 2015-03-26 00:00:00, DOI: ...

This  $\text{CO}_2$  doping method significantly improved the HTL conductivity by approximately 100-fold [16], and thus effectively enhanced the hole mobility and facilitated smoother pathway for ...

Silicon is one of the main components of commercial solar cells and is used in many other solar-light-harvesting devices. The overall efficiency of these devices can be increased by the use of ...

We explore how doping creates potential differences and electric fields that guide charge carriers and enhance mobility. Additionally, we study how doping gradients can control ...

Therefore, the ion doping [19], noble metal [20] and semiconductor sensitization [21] are used to enhance the solar utilization activity. Bismuth-based photocatalysts caused intense ...

Compared to the conventional perovskite solar cells (PSCs) containing hole-transport materials (HTM), carbon materials based HTM-free PSCs (C-PSCs) have often suffered from inferior power conversion ...

Electronic doping of conjugated semiconductor plays a critical role in the fabrication of high efficiency organic optoelectronic devices. Here, we report an organic solar cell (OSC) by doping n -type DMBI ...

The findings of this study not only enhance the understanding of the intricate relationship between doping elements and  $\text{CuO}$  properties but also highlight the significant potential ...

Black materials are the key to convert solar light to thermal energy, but it is not easy to economically achieve

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full solar-spectrum light absorption and maximally harvest solar energy. Herein, ...

Surface n-doping for perovskite solar cells with simultaneously enhanced efficiency and oxygen stability Nano Research ( IF 9 ) Pub Date : 2025-7-22, DOI: 10.26599/nr.2025.94907645

Compared to Sb doping, Na-Sb co-doping strategy offers multiple advantages. Na doping compensates for the alkali metal deficiency in flexible metal substrates, which is capable of ...

These findings establish alkali doping as a promising strategy for optimizing CCTS solar cells, with Na emerging as the most effective dopant to enhance device performance.

N-doping also shrinks the band gap, and enables the generation of additional electron-hole ( $e^- - h^+$ ) pairs upon illumination, thereby enhancing photocurrents. Tian et al. studied the ...

Our findings highlight the significant potential of co-doping with  $Li^+$  and  $Na^+$  to enhance the performance and stability of lead-free double perovskite solar cells, paving the way for ...



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