

Abstract Ferroelectric photovoltaic oxides have attracted extensive attention for low-cost solar cells owing to high structure stability and abundant resources. In this paper, we report new ...

With the capability to manipulate the built-in field in solar cells, ferroelectricity is found to be a promising attribute for harvesting solar energy in solar cell devices by influencing associated device parameters. ...

Comparative analysis with a traditional ferroelectric $0.25\text{BaTiO}_3 - 0.75\text{BiFeO}_3$ solar cell is conducted to confirm the impact of ferroelectric polarization and J-V scanning direction on ...

The difficulty in obtaining high efficiency ferroelectric solar cell devices is developing low- E_g ferroelectric thin film deposition technique with cost-effective, high-quality features, which ...

In general, the effect does not depend on the direction of the polarization; however, there are few conditions where photovoltage of the Schottky-junction ferroelectric photovoltaic devices ...

Developing efficient and sustainable hydrogen production technologies is key to addressing the energy crisis and environmental pollution. Piezo-photocatalytic water splitting technology, which directly ...

Carrier management is a critical factor influencing the photovoltaic performance of perovskite solar cells (PSCs). The incorporation of ferroelectric materials into PSCs enhances both carrier management ...

Solar energy conversion using semiconductors to fabricate photovoltaic devices relies on efficient light absorption, charge separation of electron-hole pair carriers or excitons, and fast ...

In this work, the large electric field of ferroelectric BaTiO_3 nanoparticles (BTO NPs) is used to tailor the carrier transport in the CZTSSe solar cells by embedding BTO NPs into the interface of CZTSSe/CdS ...

This review addresses the working principles of different types of ferroelectric high power density energy storage and power generation systems and the ferroelectric materials for high ...

The features of ferroelectric materials and their applications are presented. State-of-the-art employment of characterization techniques, and the properties of ferroelectric materials are ...

With the capability to manipulate the built-in field in solar cells, ferroelectricity is found to be a promising attribute for harvesting solar energy in solar cell devices by influencing...

Overall, this work establishes a new surface-based ferroelectric effect in SrTiO_{3-x} and its use for solar energy

conversion during photoelectrochemical water oxidation. Because oxygen ...

In this review, we provide a critical overview of the physical principles and mechanisms of solar energy conversion using ferroelectric semiconductors and contact layers, as well as the main ...

This article reviews recent achievements in ferroelectric nanomaterials and their applications in energy harvesting and self-powered sensing. Different categories of ferroelectric ...

This research aims to solve the kinetic barrier of photocatalytic H₂O splitting fundamentally through delocalized ferroelectric engineering, which will greatly boost the development ...

In this review, we refer to the solar cells based on both ferroelectric and photovoltaic effects of photoferroelectric perovskites as the photoferroelectric perovskite solar cells (PPSCs), and ...

Highlights o We employed ferroelectric Fe-doped bismuth titanate (Fe-BLT) to apply to Dye-sensitized solar cells (DSSCs). o Nanometer-size Fe-doped bismuth titanate (Fe-BLT) particles ...



Ferroelectric solar container direction

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