Defect engineering induces ultra-high solar container characteristics

Herein, cerium oxide nanosheets with abundant strain-V O defects were anchored on Au hollow nanomushroom through atomically sharp interfaces to construct a novel semiconductor/plasmonic ...

World-leaders in unravelling the physics of defects in high-efficiency devices Successfully developed a wide range of processes to remove defects in solar cells and improve their efficiency

The dielectric energy storage films must effectively integrate strong relaxor characteristics with high polarization properties in order to achieve superior energy storage ...

In this work, defect chemistry is employed to achieve this purpose. TiS2 as a typical electrode material is chosen to complete the study of controllable defect engineering. Theoretical ...

Solar-blind photodetectors (SBPDs) are core essential components for many critical applications such as precision guidance, fire warning, and space communications. Ultra-wide ...

The sol-gel method was used to fabricate lead-free Bi5-xSmxMg0.5Ti3.5O15 (BSxMTO, x = 0.25) relaxor ferroelectric film, which exhibited a recoverable energy storage density of 64 J/cm3 and an ...

This review provides a comprehensive examination of these defects, encompassing point defects, surface irregularities, grain boundaries, and ion migration, elucidating their detrimental ...

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Defect engineering is a low-cost and effective modification technique for designing and developing single-phase catalysts for atomic-scale regulation and the formation of active sites on ...

Micro-defects in UHPFRC, inevitably generated from the manufacturing to engineering service stage, impact its durability under extreme service environments. However, relevant ...

Post-selenization treatment is a widely used approach to improve crystallization and passivate defects for chalcogenide thin-film solar cells. The overall performance of the final device is ...

Defect engineering induces ultra-high solar container characteristics

In the development of CZTSSe solar cells, a good understanding and effective engineering of the defects in CZTSSe absorbers have been demonstrated to be crucial factors for the fabrication of high ...

Herein, we have systematically explored the influence of selenization pressure on Sb2 Se 3 thin-film solar cells fabricated via sputtering and post-selenization. High-quality Sb 2 Se 3 thin ...

This review precisely examines defect engineering in nanomaterials across various industries, emphasizing the nuanced role of defects in tailoring properties for specific applications.

The g-C 3 N 4 with dual defect sites exhibits excellent photocatalytic H 2 O 2 generation activity and selectivity, and the key role of each defect site in the surface reaction mechanism is revealed.

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