

Thin film solar cells (TFSCs) are one of the leading candidates to reduce the cost of photovoltaic production. However, low absorption coefficient due to relatively low light ...

The J_{sc} of the flat perovskite solar cell reference (Fig. 1f) with neither the embedded Ag nanoparticles nor the ITO AR grating is calculated to be $\sim 20.02 \text{ mA/cm}^2$, ...

The goals were to achieve a low reflectivity level and to make the fabrication method more accessible and cost-effective for solar cell manufacturers. One of the key ...

A double-layer cascaded grating solar cell with an isosceles triangular back-reflective layer is designed to significantly enhance the light-capturing capability of thin-film ...

Constructing optical structures often can benefit from micro-nanophotonic imprinting. Here, a simple and facile strategy is developed to introduce a large area grating structure into the ...

spectrum is a direct method to increasing the J_{sc} , and more adaptability in further works for other solar cell systems. Therefore, a grating mesoporous TiO_2 (mp- TiO_2 ... Materials used and ...

Model of GaAs Thin-Film Solar Cell. In this research, the structure of the proposed GaAs thin-film solar cell is shown in Fig. 1, where Fig. 1a shows the three ...

Stimulated by the extraordinary power conversion efficiency (PCE) of hybrid organic-inorganic perovskites (HOIP) based solar cells (SCs), the derivative studies on inorganic perovskites (IOP) based SCs have been intensely ...

Nanoscale grating-based perovskite solar cell with Improved efficiency, Ahmed Fathi Salem, Ramy Elbashar, Sanaa M. El-Rabaie, Hamdy Abdelhamid, Mohamed Farhat O. Hameed, ...

By integrating grating structures into conventional solar cell designs, they have demonstrated short-circuit current density enhancements of 3.4 and 4.1 mA/cm^2 for rectangular and ...

Here, a simple and facile strategy is developed to introduce a large area grating structure into the perovskite-active layer of a solar cell by utilizing commercial optical discs (CD-R and DVD-R) ...

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