

Magnetic nanomaterials were proven to have a significant impact in improving the efficiency of power conversion in solar cells, increasing transmission of visible light (for applications as window layers in solar cells), and reducing reflection of visible light (for applications as antireflective coatings in solar cells).

Magnetism-assisted photovoltaic, studies to uncover the underlying mechanisms of magnetohydrodynamic (MHD) phenomena (explore how the application of magnetic fields influences the transport, recombination, and collection of charge carriers within PV devices) and harness the potential benefits.

Here we propose a donor-acceptor model for a generic organic photovoltaic cell in which the process of charge separation is modulated by a magnetic field which tunes the energy levels. The...

Along with the demand for power conversion system efficiency, selecting magnetic components for photovoltaic solutions can be challenging for design engineers. This article addresses some key principles of power conversion and magnetics solutions in solar energy applications to simplify the challenge for design engineers.

In this study, we mainly looked into how magnetic fields affect solar cells. We structured our work into four components. The first section is theoretical research that uses the ...

While the guiding principle for BPVE materials is to break the crystal centrosymmetry, here we propose a magnetic photogalvanic effect (MPGE) that introduces the ...

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