# Magnetoelectric technology optical solar container

Can magnetoelectric coupling reduce energy consumption?
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Multiferroic materials are intensively investigated as potential candidates for a new generation of solar cells, due to the coexistence in their phases of ferroelectricity and magnetic order ...

Recently, we developed a solar control of magnetism, allowing the magnetic moment to be manipulated by sunlight instead of the magnetic field, current, or laser. Here, binary and ternary photoactive ...

Abstract Poly(vinylidenefluoride-co-trifluoroethylene) (P(VDF-TrFE)) based pyroelectric as well as magnetoelectric materials offer great promises for energy harvesting for flexible and wearable ...

If the technology succeeds, this one-way glass could also make solar cells more efficient by blocking the thermal emissions that existing cells radiate back toward the sun, which reduces the ...

Here, we demonstrate all-optical writing of antiferromagnetic domains using the inverse optical magnetoelectric effect (IOME) in ferrotoroidic LiNiPO4. The writing process is nonvolatile, non ...

Pin-loaded ultrathin magnetoelectric dipole antenna with unidirectional radiation Microwave and Optical Technology Letters ( IF 1.0 ) Pub Date : 2022-09-15, DOI: 10.1002/mop.33454 Li-jie Xu 1, Xiaoyu Jin ...

Controllable electrical, magnetoelectric and optical properties of BiFeO3 via domain engineering Published: 2022-06 Issue: Volume: 127 Page: 100943 ISSN: 0079-6425 Container-title: Progress in ...

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The magnetoelectric (ME) materials and related devices have been attracting increasing research attention over the last few years. They exhibit strong ME coupling effect at room ...

Poly(vinylidenefluoride-co-trifluoroethylene) (P(VDF-TrFE)) based pyroelectric as well as magnetoelectric materials offer great promises for energy harvesting for flexible and wearable ...

ng nearly coupling. This strong interaction raises the intriguing possibility that the inverse process--the inverse optical magnetoelectric (IOME) effect--could serve as an efficient mechanism for optically ...

Investigations into optical phenomena associated with nonlinear magnetoelectric effects are attracting growing attention within the scientific community. Technologies constantly ...

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Then, electrical properties (ferroelectricity, piezoelectricity and conduction), magnetoelectric couplings and optical effects (photovoltaic, photocatalytic, mechanical-optical, etc.) ...

A 3D metamaterial developed at Aalto University demonstrates an isotropic and resonant nonreciprocal magnetoelectric (NME) response in the visible frequency range, enabling technologies such as true ...

Magnetoelectric technology is also an interesting contender for more efficient, transportable power generation in beamed laser-power appJj- cations or for solar conversion in harsh environments like ...

Recently, we developed a solar control of magnetism, allowing the magnetic moment to be manipulated by sunlight instead of the magnetic field, current, or laser. Here, binary and ternary ...

Magnetoelectric coupling, as a fundamental physical nature and with the potential to add functionality to devices while also reducing energy consump-tion, has been challenging to be probed in freestanding ...

In this article, we discuss recent progresses on the understanding of magnetoelectric coupling mechanisms and the design of magnetoelectric heterostructures guided by theory and ...

In particular, our symmetry analysis indicates the existence of a magnetoelectric electro-optical effect, derived from the simultaneous presence of Berry curvature and magnetic moment, which requires ...

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