

Using optical discs to generate solar power

Can a Blu-ray Disc help solar cells absorb sunlight?

The Northwestern researchers have demonstrated that a Blu-ray disc's strings of binary code 0s and 1s, embedded as islands and pits to store video information, give solar cells the near-optimal surface texture to improve their absorption over the broad spectrum of sunlight.

Could old Blu-ray movie discs make solar cells more efficient?

As it turns out, old Blu-ray movie discs can be turned into something other than just colorful drink coasters: their semi-reflective surfaces may be the key to making more efficient solar cells. This discovery was made by engineers from Northwestern University and published in the journal Nature.

How BR disc can be used for solar panels?

In this paper we propose a solar panel using Blu-Ray (BR) disc. BR disc is mainly used for high data storage purpose but it also can be used for light trapping. By using the light trapping from sun rays we regulate the electrons from the BR disc. The regulated electrons flow through the copper coil which is connected to Zener diode.

Can Blu-ray discs be recycled into solar panels?

While it's certainly appealing to think about recycling our Blu-ray discs directly into more efficient solar panels, a more realistic approach might be to use the mass-production infrastructure that's already in place to create optical media that's adapted to improving solar cell performance.

Can Blu-ray patterned solar cells be used for light trapping?

The overall broadband absorption enhancement of a Blu-ray patterned solar cell was measured to be 21.8 percent, the researchers report. "In addition to improving polymer solar cells, our simulation suggests the Blu-ray patterns could be broadly applied for light trapping in other kinds of solar cells," Sun said.

Does a Blu-ray imprinted solar cell increase power conversion efficiency?

When comparing the results for the Blu-ray imprinted solar cell to a non-patterned solar cell, the Blu-ray imprinted cell showed a 21.8% increase in light absorption over the entire solar spectrum, leading to an 11.9% increase in power conversion efficiency.

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The researchers say the discovery paves the way for the creation of an "optical battery" that could harness power from the sun without the use of solar cells. [SUBSCRIBE AD ...](#)

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All worked equally well for enhancing light absorption in solar cells. The findings are published today (Nov. 25) in the journal Nature Communications. In the field of solar cells, it is known that if texture is placed ...

You can't replace the ordinary solar panel with a CD solar panel, unfortunately. The power you generate from the CD can only be used for very few objects. You can't compare it with a highly efficient solar panel with ...

Using solar energy to generate electricity can be done either directly and indirectly. In the direct method, PV modules are utilized to convert solar irradiation into electricity.

Forget commentaries or deleted scenes; a new special feature found within Blu-ray discs unleashes the power to harness the sun. Researchers from Northwestern University, in a study published in...

Solar power is a clean and renewable energy source that harnesses the sun's light to generate electricity. Solar power is becoming increasingly popular due to its environmental benefits and ...

Although they may look smooth, Blu-ray discs are etched with nanostructures--the islands and pits that store the information contained in high-definition movies. These nanostructures are also what make Blu-ray discs ...

An interdisciplinary team from the McCormick School of Engineering and Applied Science at Northwestern University has published research stating that Blu-ray discs can be used to improve the performance of ...

Deciding what you want to power with your solar panel is entirely up to you. While its overall power output may be limited, many choose to power small handheld fans or even miniature lights. Once you're confident ...

Solar arrays are installed on offshore platforms to provide daytime power to support the seawater desalination process, and they are further supplemented by solar power satellites (SPS) in ...

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