PIENAAR ENERGY (PTY) LTD

Can electron tubes generate solar power

Overview

Tiny carbon tubes beam out stronger light by stealing a boost from internal vibrations—a discovery that could revolutionize solar power and advanced electronics. Three RIKEN physicists have discovered how tiny tubes of carbon spit out light that is more energetic than the light shone on them 1. This finding could help to exploit the process in applications such as solar power and biological imaging. The outer surface of the tube is assembled with an organic solar cell to harvest incident light and. While earlier theories proposed that up-conversion photoluminescence required defects in the nanotube structure to trap excitons, researchers at RIKEN observed the phenomenon occurring efficiently even in pristine nanotubes. When infrared light (orange ray) hits a carbon nanotube in a silicon. The incorporation of carbon nanotubes in solar cells has been reported to be a promising approach, due to their exceptional electrical and physical properties.

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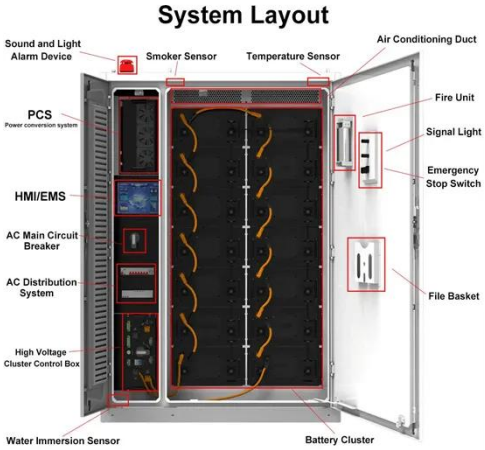

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Overview. MIT chemists and electrical engineers have joined forces to make the first solar cell that produces two electrons for every incoming photon of sunlight in the visible spectrum, thereby wasting ...

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High-performance bifacial perovskite solar cells enabled by single

Bifacial perovskite solar cells have shown great promise for increasing power output by capturing light from both sides.

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A solar tube: Efficiently converting sunlight into electricity and heat

It contains two compartments: a solar cell at outer tube surface to convert solar into electrical energy, and an underlying thermal collector to convert solar into thermal energy.

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Carbon nanotubes release more energetic light than they receive

A team of scientists from Japan's RIKEN Center for Advanced Photonics have revealed how carbon nanotubes emit more energetic light than the light they absorb. Since materials typically ...

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The Carbon Nanotube Comeback: A New Dawn for Solar Energy?

Solar panels generate electricity when excitons, or electron-hole pairs, are formed by photons (particles of light) hitting the panel. Electrons and holes separate to generate and

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Carbon Nanotubes for Solar Cells and Photovoltaics

The incorporation of carbon nanotubes in solar cells has been reported to be a promising approach, due to their exceptional electrical and physical properties. In this chapter, first, we reviewed the principle ...

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Carbon Nanotubes for Photovoltaics: From Lab to Industry

The use of carbon nanotubes (CNTs) in photovoltaics could have significant ramifications on the commercial solar cell market.

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New Light Trick in Carbon Nanotubes Could Boost Solar Power

Tiny carbon tubes beam out stronger light by stealing a boost from internal vibrations--a discovery that could revolutionize solar power and advanced electronics.

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Can solar heating of hot cathodes generate useful power?

Any accelerating voltage that you would apply would supply the power that was in the electron beam, once the electrons were liberated from the cathode, so no, you wouldn't be able to ...

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How carbon nanotubes give out more than they receive , RIKEN

RIKEN researchers have studied how up-conversion photoluminescence in carbon nanotubes could be used to give light an energy boost in solar power or laser-cooling applications.

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