Bameng Solar Photovoltaic Power Generation

The core of a PBL system is the photovoltaic laser power converter (PVLPC), which transforms the laser light delivered through an optical fiber into electricity. Recently, a PVLPC has ...

The prospects for power beaming and space solar hold both compelling opportunities and formidable challenges, each of which will be illuminated first by those that move decisively and ...

Anyone familiar with both laser beams and solar cells might imagine how power beaming might work: A laser can shine its beam at a distant solar array, which can convert that light to electricity.

For almost 50 years, the National Renewable Energy Laboratory (NREL) has developed solar cells to power satellites and spacecraft. Today, we are working to improve the durability, performance, and ...

Recently, a PVLPC has demonstrated the highest efficiency for any photovoltaic converter, i.e. 68.9% at a laser illumination of 858 nm. This review begins with a brief overview of the...

Laser beaming holds the promise of effectively implementing this paradigm. With this perspective, this work evaluates the optical-to-electrical power conversion that is created when a collimated laser ...

In this study, we investigated InGaP/InGaAs/Ge triple-junction solar cells simultaneously irradiated with three laser beams with wavelengths of 635 nm, 850 nm, and 1550 nm to improve ...

We demonstrate the use of laser diodes and multijunction photovoltaic power converters to efficiently deliver watts of electrical power for long-distance or cryogenic applications.

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