Solar Power Generation and Materials Science

Researchers have engineered a solar thermoelectric generator that is 15 times more efficient than current state-of-the-art devices, by using "black metal" technology in combination with ...

This overview explores commonly used materials for solar and wind power, exploring their limitations and continuing research trends for more sustainable and improved materials for these two ...

We review the electrical characteristics of record-efficiency cells made from 16 widely studied photovoltaic material geometries and illuminated under the standard AM1.5 solar spectrum, ...

These publications explore the frontiers of new classes of solar PV materials, including organic PVs and metal halide perovskites, and they also span different aspects from understanding ...

Solar photovoltaic technology has experienced significant growth and development in recent years, making it a significant figure in the field of renewable energy. The basic principle of solar...

In a study published in Light: Science and Applications, the team described their unique spectral engineering and thermal management methods to create a STEG device that generates 15 times ...

Photochemistry, the study of chemical reactions initiated by light, is fundamentally shaping this landscape, particularly in solar energy conversion. This review provides a ...

Solar Energy Materials & Solar Cells is intended as a vehicle for the dissemination of research results on materials science and technology related to photovoltaic, photothermal and ...

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This Review compares the state of the art of photovoltaic materials and technologies, detailing efficiency limitations and the innovations needed to overcome them.

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