

Crystals that generate more electricity than solar panels





Overview

Are solar panels a viable alternative to nuclear power?

Photovoltaic energy has established itself as the most powerful source, even taking space away from the dreaded nuclear power. However, there is still a challenge ahead, and that is to make way for a new generation of solar panels that produce more electricity (i.e., have higher efficiency).

Could ultra-thin solar panels be more efficient than conventional solar panels?

Scientists in Germany have engineered a major leap forward in solar panel design by devising plans for ultra-thin solar panels that are up to 1,000 times more efficient than conventional silicon models. The key is a new crystal-layering technique that could drastically change how we harvest energy from sunlight.

Why are new solar panels so popular?

So, while these new solar panels are ultra-thin and produce more power, they are also simpler to make and far more durable. The ferroelectric materials used here naturally generate electricity when exposed to light, and by alternating them with paraelectric layers, the team drastically boosted the photovoltaic response.

Could a new 'crystal sandwich' revolutionize solar energy harvesting?

The key is a new crystal-layering technique that could drastically change how we harvest energy from sunlight. The team, working at Martin Luther University Halle-Wittenberg, built these next-generation panels using a special “crystal sandwich” of barium titanate, strontium titanate, and calcium titanate.



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