

# Space station photovoltaic panel folding mechanism

Could origami-inspired solar panels be sent into space?

NASA engineer Brian Trease holds the prototype of the origami-inspired solar panel arrays. (Image credit: NASA/JPL-Caltech) Some scientists think that one day solar panels could be sent into space to create orbiting power plants. The panels would soak up sun and beam back solar energy to Earth in the form of microwaves.

Does the International Space Station use solar panels?

The International Space Station also uses solar arrays to power everything on the station. The 262,400 solar cells cover around 27,000 square feet (2,500 m<sup>2</sup>) of space.

What happens if a solar module is folded?

When the solar modules subjected to folding, the  $J_{sc}$  started to decrease and gradually saturated at around 4 mA cm<sup>-2</sup> after 10 cycles of folding/unfolding, while the  $V_{oc}$  almost remained constant throughout 40 times folding/unfolding, as shown in Figure 3D. Foldable solar cells with crease in the predesigned place.

Can a solar panel fold up like origami?

Researchers at NASA's Jet Propulsion Laboratory, Pasadena, California, and Brigham Young University, Provo, Utah, collaborated to construct a prototype of a solar panel array that folds up in the style of origami, to make for easier deployment. Image copyright BYU Photo

Can a solar cell be folded away compactly on a spacecraft?

A toy has inspired a new design for a solar cell that could be folded away compactly on a spacecraft and then rapidly expanded when needed. The structure can unfold to increase its surface area by ten times in just 40 seconds without any power source; instead, it uses a polymer that moves in response to temperature changes.

How can retractable solar array models contribute to Mission Enabling Technologies?

Develop reliably retractable solar array models. Demonstrate that these methods can contribute to mission-enabling technologies of NASA Technology Area 3: Space Power and Energy Storage by prototyping concept models which have low mass, low stowed volume, and high strength and stiffness.

Overview Patent History on ISS Applications See also External links The Roll Out Solar Array (ROSA) and its larger version ISS Roll Out Solar Array (iROSA) are lightweight, flexible power sources for spacecraft designed and developed by Redwire. This new type of solar array provides much more energy than traditional solar arrays at much less mass. Traditional solar panels used to power satellites ar...

Recently, flexible solar cells, with the advantages of low cost, light weight, foldability, roll-to-roll fabrication, have attracted wide attention. The deformation of flexible solar cells mainly includes bending, folding, stretching, ...

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