

These Super-Efficient Solar Panels Are Light Enough to Install Almost Anywhere

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Sunflare is a Los Angeles startup that's making solar panels smaller and lighter. That sounds pretty good, but the real innovation comes when you see what you can do with them.

Unlike heavier panels, which require proper construction techniques to hang, Sunflare's panels are so light that the company claims they can be hung with "little more than a 3M tab on the side of buildings." Add to that the fact that they're flexible and you have a panel that can quickly be adapted to fit into any space that gets the sun.

The Sunflare panels do without a glass substrate, allowing them to be flexible. They're a variant the CIGS (copper indium gallium selenide) type solar cell, which already requires only a thin film to construct. The problem so far with CIGS has been the cost of manufacture, compared to regular crystalline silicon panels, which are used almost everywhere else. Sunflare makes some bold claims: It says it has solved the production costs, while making a panel that's 65% lighter and able to produce 10% more energy throughout the day, thanks in part to better efficiency in low light at dusk and dawn.

"To make the most efficient solar power the cells must absorb as much light as possible while reflecting as little light as possible," says Sunflare founder Len Gao. "Sunflare's cells produce less glare and capture more light."

The improved absorption combines with better high-temperature performance to increase efficiency yet further, generating more power at midday when temperatures are hottest.

Gao also says that Sunflare's manufacturing process is greener than that used to make other panels. In addition to using less chemicals in the manufacture (no lead or cadmium, for example), the factory recycles spent materials, and also recycles its water.

The most practical difference, though, is also the most mundane aspect. The Sunflare panels can be deployed on roofs without having to reinforce them—you just stick them up there and wire them into your system. You don't need to reinforce the roof, or build out frames on which to mount them. That could make for big savings, opening up the possibility of solar to many people who wouldn't normally consider it.
