

A woman with short dark hair, wearing a grey lab coat, is holding a small, circular, reflective solar sticker in her gloved hand. The sticker is highly reflective, showing a distorted image of the surroundings. The background is a laboratory setting with various equipment and shelves.

# Solar Stickers

**Narrator:** The energy from the sun's light is enough to fulfill all the world's power needs many times over. There are different ways to collect this (1)\_\_\_\_\_. One method is to use solar electric panels. You can think of solar panels as a kind of sun-powered (2)\_\_\_\_\_.

Most solar panels are made of a special material called (3)\_\_\_\_\_. When the sun shines on the silicon solar panels, they convert the sunlight into electricity.

However, solar panels are (4)\_\_\_\_\_, and installing the equipment can be difficult. An invention by scientist and National Geographic Explorer Xiaolin Zheng could make things much simpler.

Xiaolin Zheng is a professor at (5)\_\_\_\_\_ University. She works in the field of nanoscience—the study of structures and materials on the scale of nanometers.

**Xiaolin:** Nanoscience studies materials that are extremely tiny. A human hair is about (6)\_\_\_\_\_ nanometers.

**Narrator:** Using nanotechnology, Zheng and her team of engineers created a type of solar cell that works like a sticker. It is very thin—only (7)\_\_\_\_\_ of the thickness of plastic wrap. It can stick to paper, plastic, (8)\_\_\_\_\_, and many other materials. These “peel-and stick” solar cells are also flexible, so they can bend easily. This means that they can stick to any surface—even curvy or (9)\_\_\_\_\_ ones. When a solar sticker is stuck to the back of a cell phone, it will (10)\_\_\_\_\_ sunlight and produce electricity, thereby charging the phone.

When solar stickers are stuck to windows, they could even be used to help power buildings. And because solar stickers are much smaller and lighter than typical solar panels, they will be easier and (11)\_\_\_\_\_ expensive to install.

As long as the sun continues to shine, there will always be a supply of solar energy. This means it is (12)\_\_\_\_\_. Furthermore, solar power is clean and does not (13)\_\_\_\_\_ greenhouse gases.

**Xiaolin:** If you realize the electricity you are using does not generate (14)\_\_\_\_\_ and is renewable, I think people will be (15)\_\_\_\_\_.