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INSECT EYES INSPIRE STRUCTURE OF NEW SOLAR PANEL CELL

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Scientists from Stanford University used creepy crawlies to help develop solar cells with a fragile photovoltaic material.

Solar energy is in high demand as more businesses and civilians alike look to make greener moves to help both the environment and their bank accounts. Building blocks integrated with solar technology recently hit the news, with innovators looking to create the most efficient and sustainable forms of solar energy possible, even taking inspiration from butterflies.

Butterflies aren't the only bug acting as inspiration for researchers. Scientists at the USA's Stanford University have looked at the eyes of insects to create the newest form of solar cells. They have discovered that packing tiny solar cells together could pave the way for a new generation of advanced photovoltaics. In a new study, the Stanford team used the insect-inspired design to protect a fragile photovoltaic material called perovskite from deteriorating when exposed to heat, moisture or mechanical stress. Most solar devices, such as rooftop panels, use a flat design, but that approach doesn't work well with perovskite solar cells.

Using an insect eye as a model, scientists created a compound solar cell consisting of a vast honeycomb of perovskite microcells, each encapsulated in a hexagon-shaped scaffold just 0.02 inches wide. To find out if the cells could withstand heat experienced on rooftops, the researchers exposed encapsulated perovskite cells to temperatures of 185F (85C) and 85 percent relative humidity for six weeks. Despite these extreme conditions, the cells continued to generate electricity at relatively high rates of efficiency. How integral do you think solar energy will be within society in the next five years?