

# Solar power generation electrode





## Overview

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- An integrated electricity generator seamlessly integrates the solar panel and DEG without sacrificing individual performance.

How to reduce solar panel photovoltaic efficiency decrement in conventional solar-water electricity generators?

To eliminate the solar panel photovoltaic efficiency decrement in conventional hybrid solar-water electricity generators and improve the water energy harvesting efficiency, we developed a hybrid electricity generator with common-electrode architecture (HEG-CEA), in which the solar panel shares the positive electrode with the DEG.

Are antimony-based solar cells a step forward?

The results represent a step forward in the development of antimony-based solar cells. Dong et al. achieve  $Sb_2(S,Se)_3$  solar cells with 10.7% efficiency by increasing charge generation with a textured electrode and reducing charge recombination and transport loss with a conformal electron-selective layer.

What is common-electrode architecture?

In summary, the common-electrode architecture endows the hybrid solar water electricity generator with mutual enhancement on solar and water energy harvesting.

How to make a HEG-CEA Solar panel?

The HEG-CEA could be conveniently manufactured by depositing a fluorinated ethylene propylene (FEP) film on a solar panel ( Figs. 1 b and 1 c) followed by installing a very tiny aluminum electrode ( $1\text{ mm} \times 50\text{ mm} \times 50\text{ }\mu\text{m}$ ) on it. Notably, the output is not sensitive to the width of the aluminum electrode ( Fig. S1 ).



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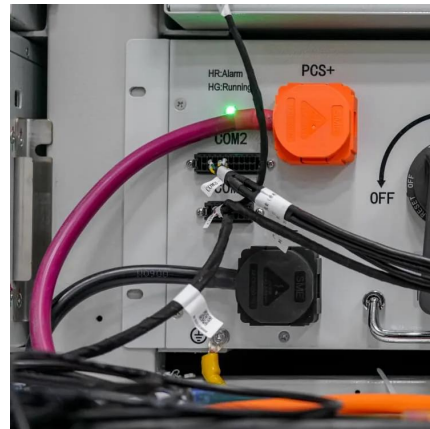


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Pooran Koli \* and Jyoti Saren Solar energy is a limitless energy resource that can be used to produce electricity forever. Photogalvanic cells can convert solar energy into electricity with ...



### Solar power generation electrode function

For organic solar cells, the resultant flattening of open-circuit voltage ( $V_{oc}$ ) and fill factor (FF) leads to a "plateau" that maximizes power conversion efficiency (PCE).



### **An integrated electricity generator harnessing water and solar energy**

Nov 1, 2023 · To eliminate the solar panel photovoltaic efficiency decrement in conventional hybrid solar-water electricity generators and improve the water energy harvesting efficiency, ...

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