

Lightweight PV Project





Overview

In this project, we will develop lightweight, flexible, high-performance perovskite PV modules, which provide high power conversion efficiency (PCE), light weight, and high stability and flexibility. Are lightweight PV modules a viable solution for photovoltaic applications?

The expanding scale of the photovoltaic (PV) market has intensified the focus on PV module designs for diverse applications. Research actively pursues lightweight PV modules, replacing front glass with polymer films as a suitable design solution.

What is reducing the weight of PV modules?

A notable trend in PV system development involves reducing the weight of PV modules to better suit specific applications. Typically, lightweight PV modules are fabricated by replacing the front glass with a transparent polymer film [1, 2].

How to fabricate a lightweight PV module?

For the fabrication of a lightweight PV module, we laminated a front sheet/EVA/solar cell array/EVA/FRP/EVA/Al honeycomb core/EVA/FRP structures using a simple one-step lamination process with lamination system (BSL2222OC, Boostsolar) at 140 °C for 660 s.

Are lightweight PV devices possible?

Regarding potential solutions for lightweight PV devices known from the literature above, one has to emphasize that the results of works on the designing/manufacturing technology of small- and medium-scale modules cannot be directly related to the standard-sized devices.



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[Prototype design and development of low-load-roof ...](#)

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Mar 1, 2024 · PV Expo Tokyo 2024, Japan's main solar industry event, has concluded with record numbers, innovative products, and new trends.



[Fraunhofer ISE develops agriPV modules to ...](#)

Apr 8, 2025 · Scientists at Fraunhofer ISE and weather protection provider VOEN have developed lightweight modules for agriPV applications.

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in Le Cheylas, southeastern France, according to the European Climate, Infrastructure and ...



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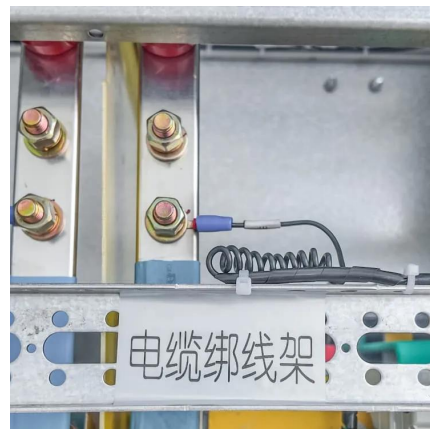


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Abstract. This study aims at performing an assessment of lightweight photovoltaic (PV) module's reliability by comparing module's performances and reliability of several manufacturers. ...



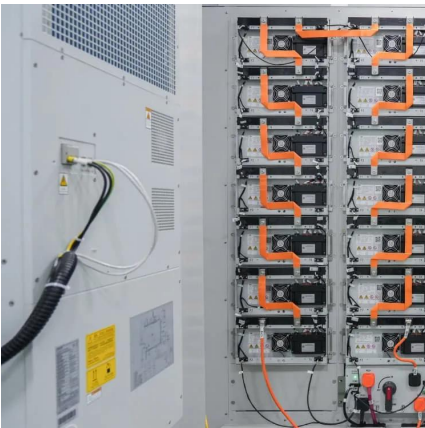
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PhD project Zhang J and Boyer C

Jun 21, 2023 · PhD Projects on Lightweight Modules for Low Load Capacity This project aims to develop lightweight and reliable expand solar energy installations onto low-load materials





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