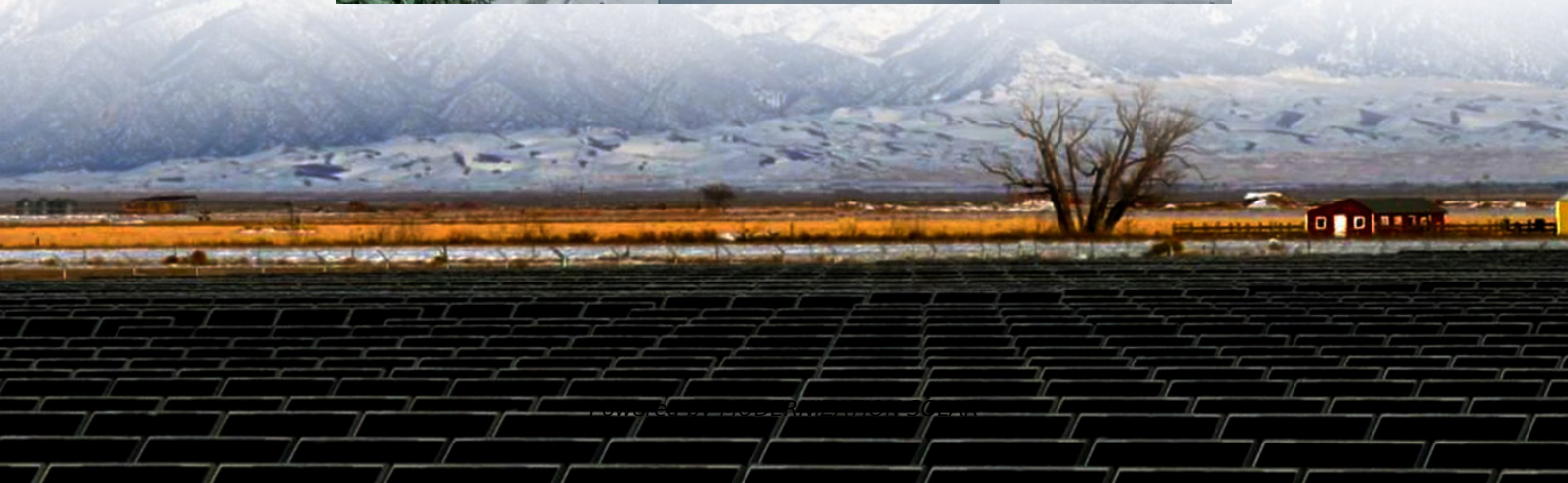


# **High-power solar power generation and storage integrated machine**





## Overview

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What is a hybrid solar energy system?

The proposed hybrid solar energy system uses AI blends machine-learning-driven solar tracking, material upgrade with intelligence, adaptive photovoltaics, and energy management using blockchain into a common and intelligent platform for energy optimization.

How efficient is a hybrid solar energy system?

To mitigate this issue, a hybrid device has been developed, featuring a solar energy storage and cooling layer integrated with a silicon-based PV cell. This hybrid system demonstrated a solar utilization efficiency of 14.9%, indicating its potential to achieve even greater efficiencies in future advanced hybrid photovoltaic solar energy systems.

What are the benefits of AI-augmented hybrid solar energy systems?

The performance achieved by the provided AI-augmented hybrid solar energy system benefits from quantifiable improvement in forecasting, monitoring, photovoltaic optimization, energy management, and system reliability.

What is AI-based solar energy system?

The AI-based hybrid solar energy system integrates multiple integrated modules to enhance the decentralized energy management, energy conversion, and solar tracking. The system integrates CNN-LSTM solar irradiance forecasting, RL-based dual-axis tracking, and Edge AI for real-time applications to facilitate adaptive and efficient solar tracking.



## High-power solar power generation and storage integrated machine

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### Hybrid solar energy device for simultaneous electric power generation

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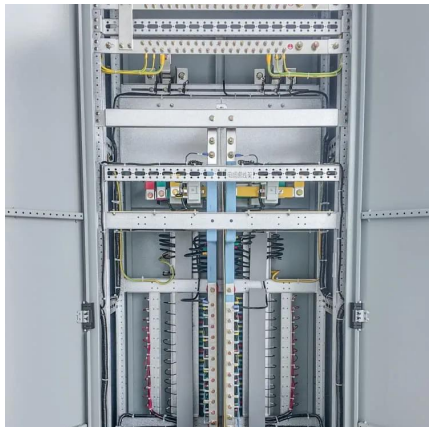
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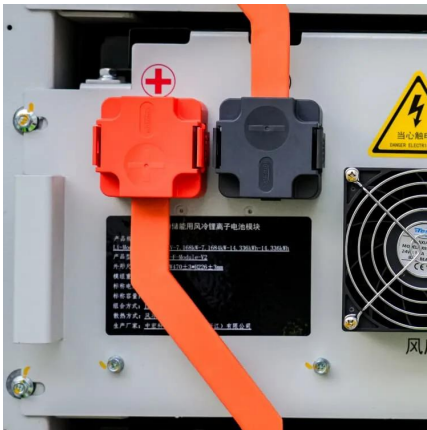






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