

Design of high temperature solar energy system in Saudi Arabia





Overview

The present work carries about a unique experimental investigation in the thermal management and cooling realms of the Photovoltaic (PV) panels under the most harsh environmental conditions. The pe.

Does Saudi Arabia have optimal cooling mechanisms for PV modules?

Assessing the optimal cooling mechanisms for PV modules in Saudi Arabia seems very limited or un-established based on the analytical approach ,and solutions found, approved, or possibly assessed based on satellite observations of the atmosphere.

What factors affect the performance of solar panels in Saudi Arabia?

On other hand there are two factors that affect the performance in Saudi Arabia, temperature and dust. The higher the temperature reduces the voltage by 2.2mV per degree rise of temperature. The usage of certain PV materials that are not much affected by temperature can help in that regard.

What is the radiation level in Saudi Arabia?

In Saudi Arabia, The average total radiation over the year on a horizontal level is 6.2 KWh/ (m2.d) which is considered as one of the highest radiation on earth. On other hand there are two factors that affect the performance in Saudi Arabia, temperature and dust.

Can solar energy be used for thermal applications at lower level?

Resourceful and cost-effective heat storage are the key elements for the effective utilization of solar energy for thermal applications at lower level . It was shown that higher ambient temperature results in lower solar cell temperature.



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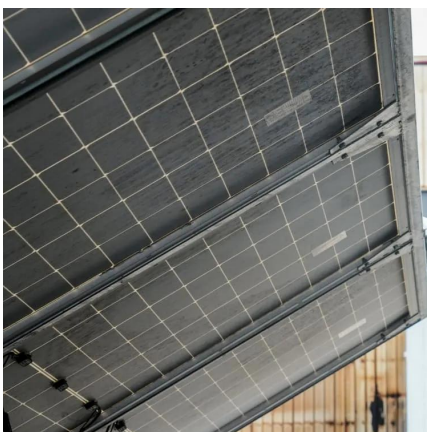


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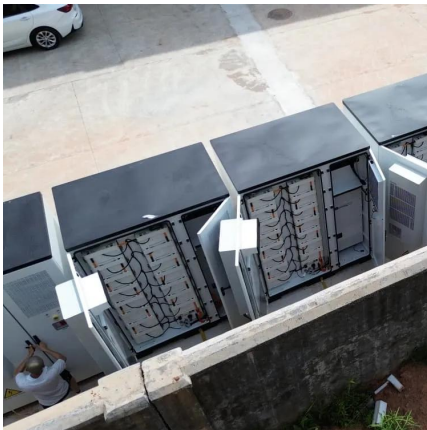


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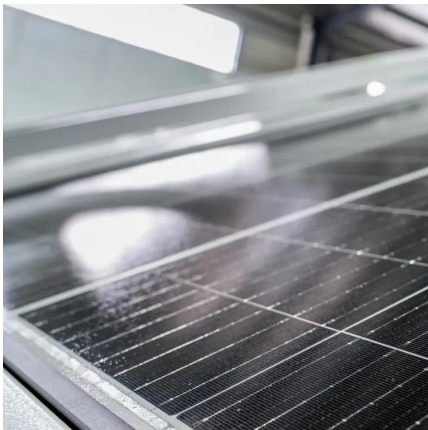
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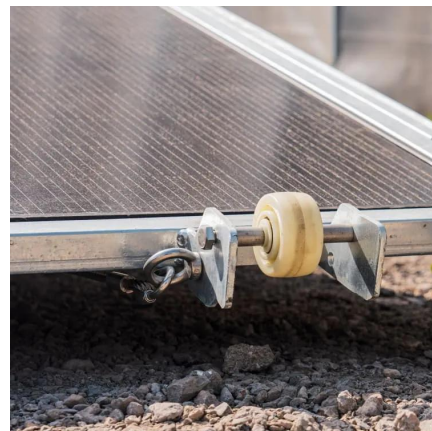


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