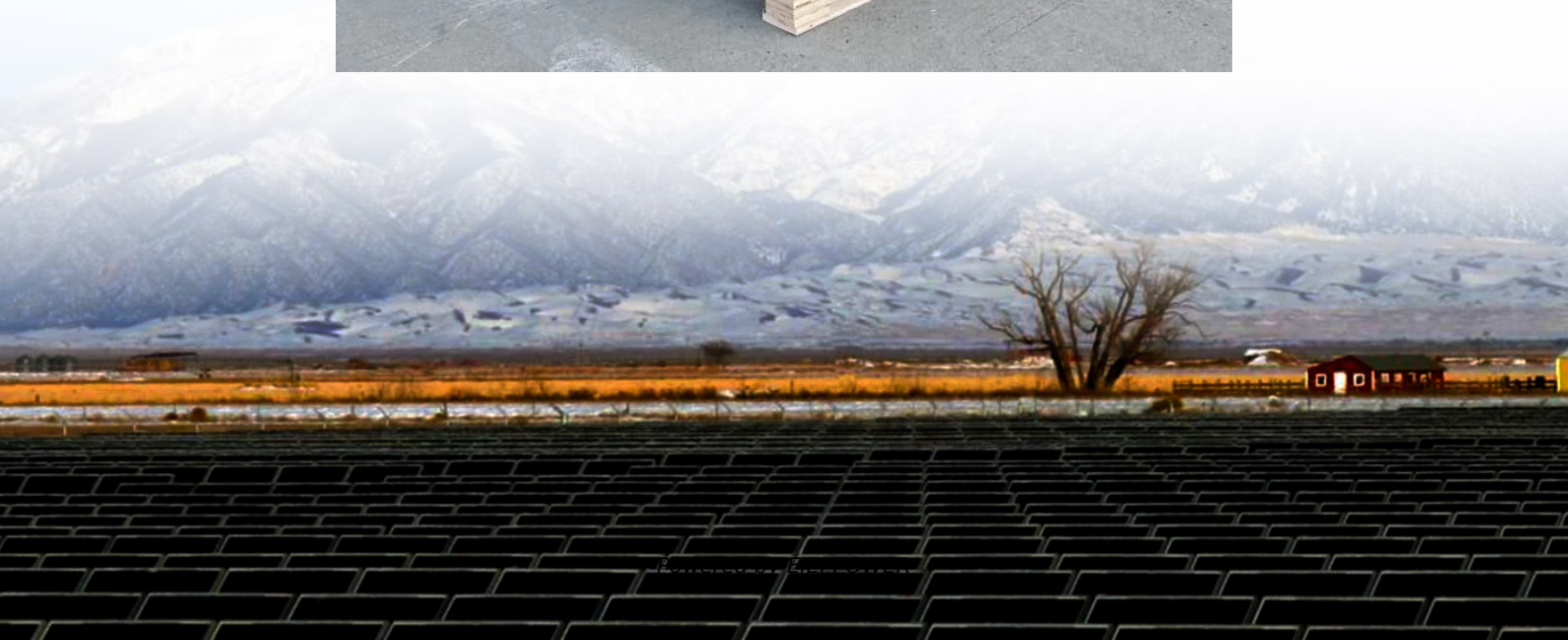


Passive Control Solar Tracking System





Overview

What is passive solar tracking?

Passive Solar Tracking is an exploration the challenges and benefits of using thermally active materials to actuate a sun-tracking surface. Orienting a surface perpendicular to the sun throughout the day has potential benefits for both solar energy generation and daylight management.

How do passive sun tracking systems work?

There are already passive sun tracking systems that exist today. Many of them use liquid freon or another highly responsive, volatile liquid as the thermally active component. The liquid condenses in certain areas when exposed to sunlight, causing a shift in the center of gravity that tilts the array towards the sun throughout the day.

Are passive solar trackers reliable?

Passive solar trackers face challenges in returning PV panels to the east position before sunrise. Specifically, bimetallic strip deflection-based trackers are unreliable due to ambient temperature changes at night, resulting in inconsistency across different locations and times.

Are passive-type solar trackers suitable for underdeveloped countries?

Due to this advantage, tracking systems have become more prevalent on a global scale [1, 2]. More specifically, passive-type solar trackers with bimetallic strip activators for PV panels are suitable for underdeveloped countries due to their limited access to technology, lower cost, and lower complexity than the active type.



Passive Control Solar Tracking System



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Passive solar tracker using a bimetallic strip activator with an

This study addresses this issue by designing a passive solar tracker with a bimetallic strip deflector independent of nighttime temperature differences. Field tests were conducted ...



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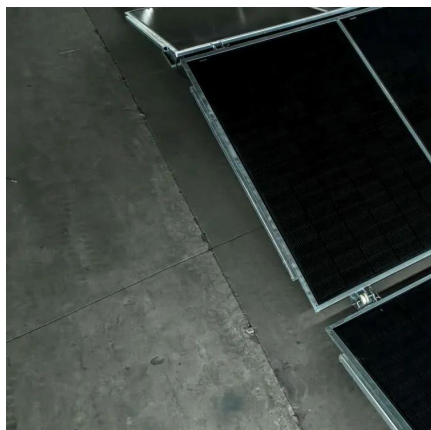
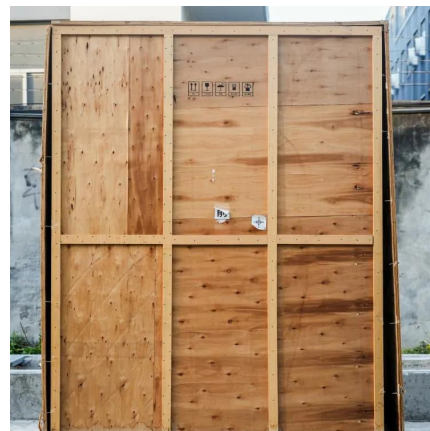


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